

FOUNDATIONS OF CHILD PSYCHIATRY

EDITED BY

EMANUEL MILLER

with the collaboration of several authors

“Speak not of your children but of your builders”
(Ethics of the Fathers, Talmud.)



THE QUEEN'S AWARD
TO INDUSTRY 1966

PERGAMON PRESS

OXFORD · LONDON · EDINBURGH · NEW YORK
TORONTO · SYDNEY · PARIS · BRAUNSCHWEIG



Pergamon Press Ltd., Headington Hill Hall, Oxford
4 & 5 Fitzroy Square, London W.1

Pergamon Press (Scotland) Ltd., 2 & 3 Teviot Place, Edinburgh 1

Pergamon Press Inc., 44-01 21st Street, Long Island City, New York 11101

Pergamon of Canada Ltd., 207 Queen's Quay West, Toronto 1

Pergamon Press (Aust.) Pty. Ltd., Rushcutters Bay, Sydney, N.S.W.

Pergamon Press S.A.R.L., 24 rue des Écoles, Paris 5^e

Vieweg & Sohn GmbH, Burgplatz 1, Braunschweig

Copyright © 1968
Pergamon Press Ltd.

First edition 1968

Library of Congress Catalog Card No. 66-17268

08 002794 6

68 / 8550

Contents

LIST OF CONTRIBUTORS	vii
PREFACE	ix
INTRODUCTION	xi

SECTION 1. THEORIES AND METHODS

CHAPTER 1. <i>Child Psychiatry and the World Health Organization</i> by DONALD F. BUCKLE	3
CHAPTER 2. <i>The Relationship of Pediatrics to Child Psychiatry: U.S.A. View</i> by MILTON J. E. SENN	9
CHAPTER 3. <i>Paediatrics and Child Psychiatry in Great Britain</i> by JOHN APLEY	29
CHAPTER 4. <i>Assessment of Childhood Disturbances</i> by ANNA FREUD	43
CHAPTER 5. <i>The Psychoanalytic Theory of Child Development</i> by W. H. GILLESPIE	51
CHAPTER 6. <i>On Observing Children</i> by E. J. ANTHONY	71
CHAPTER 7. <i>The Psycho-diagnostic Approach to Problems of the Very Young</i> by RUTH GRIFFITHS	125
CHAPTER 8. <i>The Place of Longitudinal Research in the Study of Child Development</i> by TERENCE MOORE	151
CHAPTER 9. <i>The Comparative Approach to Early Child Development: The Data of Ethology</i> by ANTHONY AMBROSE	183
CHAPTER 10. <i>What Sort of Ego has an Infant? A Methodological Approach</i> by J. O. WISDOM	233
CHAPTER 11. <i>The Problem of Classification in Child Psychiatry (Some Epidemiological Considerations)</i> by E. MILLER	251

SECTION 2. SOME BASIC CLINICAL PROBLEMS IN CHILD PSYCHIATRY

CHAPTER 1. <i>The Directive Function of Speech in Development and Dissolution</i> by A. R. LURIA	273
<i>Part I: Development of the Directive Function of Speech in Early Childhood</i>	273
<i>Part II: Dissolution of the Regulative Function of Speech in Pathology of the Brain</i>	282
CHAPTER 2. <i>Psychogenic and Allied Disorders of Communication in Childhood</i> by L. STEIN and S. E. MASON	295
CHAPTER 3. <i>Psychosis in Childhood</i> by MILDRED CREAK	323

CHAPTER 4. <i>Problems in Assessing the Later Effects of Early Experience</i> by A. D. B. CLARKE	339
CHAPTER 5. <i>Social Problems of Mental Subnormality</i> by A. KUSHLICK	369
CHAPTER 6. <i>School Phobia</i> by G. STEWART PRINCE	413
CHAPTER 7. <i>Bereavement and Lack of a Parent in Childhood</i> by FELIX BROWN	437
CHAPTER 8. <i>The Genetics of Mental Deficiency</i> by J. T. R. BAVIN	457
CHAPTER 9. <i>Some Aspects of Delinquent Behaviour in Children and Adolescents</i> by W. H. ALLCHIN	489
SECTION 3. FAMILY AND SOCIAL APPROACHES IN CHILD PSYCHIATRY	
CHAPTER 1. <i>The Role of the Family in the Emergence of Child Disorders</i> by NATHAN W. ACKERMAN	509
CHAPTER 2. <i>Family Vicissitudes in Relation to Personality Development</i> by PORTIA HOLMAN	535
CHAPTER 3. <i>Family Relationships, Fathers, and the Law</i> by R. G. ANDRY	555
SECTION 4. SOME THERAPEUTIC METHODS AND PROPHYLAXIS	
CHAPTER 1. <i>The Value of the Therapeutic Consultation</i> by D. W. WINNICOTT	593
CHAPTER 2. <i>Community Therapy</i> by SERGE LEBOVICI	609
CHAPTER 3. <i>Psychopharmacology in Childhood: a Critique</i> by LEON EISENBERG	625
CHAPTER 4. <i>Behaviour Therapy and Conditioning Techniques</i> by H. GWYNNE JONES	643
CHAPTER 5. <i>Opportunities for School Psychologists in the Primary Prevention of Mental Disorders in Childhood</i> by GERALD CAPLAN	671
NAME INDEX	689
SUBJECT INDEX	701

List of Contributors

- EMANUEL MILLER, M.A. (Cantab.), F.R.C.P. (Lond.), D.P.M. (Cantab.), Fellow Brit. Psychol. Soc., Emeritus Physician, Maudsley Hospital, London; Hon. Physician and Director Child Psychiatry, St. George's Hospital, London; Hon. Physician, the Tavistock Clinic; Joint Editor, *British Journal of Criminology*; Late Joint Editor, *Journal of Child Psychiatry*.
- J. T. BAVIN, M.B., B.S., B.Sc., D.P.M., Consultant Psychiatrist, Leavesden Hospital, England.
- H. GWYNNE JONES, B.Sc., Senior Psychologist, St. George's Hospital, London; Psychological Department, Maudsley Hospital.
- LEOPOLD STEIN, M.D., Fellow Brit. Psychol. Soc., Emeritus Physician, Tavistock Clinic, London; Advisor in Speech Therapy, the War Office, London; Founder Fellow, London College of Speech Therapy; Assistant Editor *Journal of Analytical Psychology*.
- ELWYN JAMES ANTHONY, M.D. (Lond.), Ittleson Professor of Child Psychiatry, Washington University, U.S.A.; Late Consultant Physician, Child Psychiatry Dept., Maudsley Hospital; Member American and International Psychoanalytical Associations.
- JOHN APLEY, M.D. (Lond.), F.R.C.P. (Lond.), Consultant Paediatrician, United Bristol Hospital and Royal United Hospital, Bath; Lecturer in Child Health, Bristol Univ., Bristol.
- TERENCE MOORE, Research Psychologist, Centre for Study of Human Development, University of London, Institute of Education.
- MILTON SENN, M.D., Professor of Child Health and Child Psychiatry, Yale University, U.S.A.
- RUTH GRIFFITHS, M.A., Dip. Psychol. (Oxon.), Ph.D. (Lond.), Director, The Child Development Research Centre, London; Organizer of courses in Diagnostic Testing; Late Research Psychologist, The Burden Mental Research Trust; Principal Psychologist, St. George's Hospital, London.
- D. W. WINNICOTT, F.R.C.P., Physician, The Paddington Hospital for Children; Member British Psychoanalytical Society.
- FELIX BROWN, D.M. (Oxon.), M.R.C.P., D.P.M., Medical Director, Earls Court Child Guidance Clinic; Psychiatrist, West London Hospital; Psychiatrist, Hampstead General Hospital.
- NATHAN ACKERMAN, B.A., M.D., F.A.P.A., Family Study Unit, New York, U.S.A.
- MILDRED CREAK, M.D., F.R.C.P., D.P.M., Reader in Child Psychiatry, Institute of Child Health, London; Late Physician the Maudsley Hospital.
- G. STEWART PRINCE, F.R.C.P.I., D.P.M., Consultant in Child Psychiatry, King's College Hospital.
- DONALD BUCKLE, B.Sc., M.B., D.P.M., Regional Officer in Mental Health (Europe), World Health Organization.
- A. D. B. CLARKE, Ph.D., Professor of Psychology, The University, Hull, England.
- J. O. WISDOM, Ph.D., Reader in the Philosophy of Scientific Method, London School of Economics.
- A. KUSCHLICK, Ph.D., Physician in Mental Defect, Leavesden Hospital, Hertfordshire.
- ROBERT G. ANDREY, M.A., Ph.D., Lecturer in Psychology, Institute of Education, Lond. Univ.: Senior Clinical Psychologist, St. Thomas' Hospital, London: Assistant Editor, *British Journal of Criminology*.

- ANNA FREUD, L.L.D., Director of the Hampstead Clinic for Child Therapy; Member of the British Psychoanalytic Society and Institute since 1938.
- ANTHONY AMBROSE, B.Sc., M.A., Ph.D., Senior Research Psychologist, Tavistock Clinic and Institute of Human Relations; Associate member British Psychoanalytic Society; Association for Study of Animal Behaviour; Fellow, Royal Society of Medicine.
- LEON EISENBERG, M.D., Professor of Child Psychiatry, Dept. of Paediatrics and Psychiatry, Johns Hopkins University School of Medicine; Psychiatrist in Charge, Children's Psychiatric Service, Harriet Lane Medical Service, the Johns Hopkins Hospital.
- WILLIAM HEWITT GILLESPIE, M.D. (Edin.), Psych. Dipl. (Edin.), F.R.C.P. (Lond.), Late President International Psychoanalytical Association; Late President, British Psychoanalytical Society.
- STELLA E. MASON, Fellow of Royal Anthropological Institute; Licentiate, College of Speech Therapists.
- W. H. ALLCHIN, M.A., M.B., B.Ch., D.P.M., Medical Director, Wessex Regional Adolescent Unit; Late Assistant Psychiatrist, the Portman Clinic and Middlesex Hospital, Visiting Psychiatrist, London County Council.
- A. R. LURIA, Professor of Neuro-Psychiatry, Institute of Education, Academy of Paedagogics, Moscow University, U.S.S.R.
- SERGE LEOVICI, M.D., Psychoanalyst; Physician, Les Hopitaux de Paris.
- PORTIA HOLMAN, M.A., M.D., F.R.C.P., D.P.M., Physician in Child Psychiatry, Elizabeth Garrett Anderson Hospital, London; Fellow of Newnham College, Cambridge.
- GERALD CAPLAN, M.D., D.P.M., Associate Professor of Mental Health, Harvard School of Public Health, U.S.A.

Preface

SOME six years ago a group of child psychiatrists felt the need for the establishment of an Association of Child Psychiatrists and those who were necessary co-workers coming from cognate fields. It soon became clear that the medium for the publication of researches and clinical experience was a necessary instrument of communication. Today both the Association and the *Journal of Child Psychology and Psychiatry* have succeeded in being important vehicles for the discussion of the rapidly developing specialty. Pergamon Press saw that the success of the journal gave grounds for the shaping of a composite volume embodying the theories, methods and clinical problems up to date. It was at first suggested that an *Encyclopaedia of Child Psychiatry* was called for, or at least a handbook of reference for the growing number of workers in the field. When the Editor was approached to consider this proposal it was felt that both these suggestions were not only premature but far too ambitious for so nascent a subject with so many affiliated disciplines. In accepting the invitation (with some trepidation) the Press and the Editor came to the conclusion that there were reasonable grounds for designing a joint endeavour which would mobilize the present attitudes to theory, method, and the basic clinical manifestations and such social issues which seemed to play so important a part in the lives of parents and children. The passage of time, in the editor's forty years of child psychiatric experience, has begun to show that the subject seemed to disclose certain basic theories and methods which were being employed, sometimes not clearly expressed, which influenced the subsequent edifice of clinical observations and the therapeutic endeavours which urgent child problems confronted the psychiatrist and his associates. The title *Foundations of Child Psychiatry* seemed to fall in with the existing state of the subject, that is that there were basic principles about which there was some measure of agreement and which seemed to be a safe substrate area on which the edifice of thinking and practice could be based. The demonstrative article "the" has been carefully omitted as it might well imply that these were certain incontrovertible foundation stones. These foundations are not all laid bare but such as have been disclosed by a number of thinkers and workers are a good basis for operational work. The superstructure of clinical work and therapy can be altered as time enriches our data and gives ground for change. It was obvious that no person could dare embrace the whole of a growing discipline and therefore the co-operation of specialists was a prime necessity. That such a collective was possible does, the editor claims, show that the

many collaborators have a common interest, and can work together. The table of contents will show that there are some serious omissions, that is, subjects of growing clinical import receive scant attention. It was hoped to have an authoritative chapter on the growing interest in the effects of minimal brain injuries at the peri-natal period. This contribution was not forthcoming. Further, and associated with this subject, was the important field of the epilepsies and the episodic disorders of a like kind which present interesting clinical and theoretical problems. There are other problems too which biochemical advances throw up which psychiatrists cannot ignore, and the sequelae of glandular dysfunctions which have grave mental consequences. But these are in many respects the province of paediatric thought and practice which is becoming, as this volume shows, closer and closer linked with child psychiatry. In other words, these issues are not ignored but may be left to the pediatric field. This field of the close relations between paediatrics and psychiatry has, we feel, been recognized by the inclusion of two chapters representing American and British views.

Equally the growing interest in, and the striking new insights into the genetics of mental subnormality justifies the considerable space allotted this subject which has tended to be regarded as a study in its own right, and properly left to special textbooks. But in a study of foundations as in this volume, it was felt that it should be woven into child psychiatric theory and practice. Social studies have also been given special weight in order to stress the part that the family and the social situation play in the emergence of psychological disorders and the need for a social orientation in therapy.

The editor expresses his indebtedness to the Directors of Pergamon Press for having suggested the creation of this book and stimulated its production as a composite work by prominent thinkers and workers in this field.

Introduction

OWING to the prominence that has been given in recent years to the Child Guidance Clinic many are left with the impression that the overall study and treatment of the psychological disorders of childhood stem from this establishment. This had its origin in the United States where the munificence of the Commonwealth Fund gave prominence to the new and novel approach, indeed it standardized a type of team endeavour which has perhaps had its good and its limiting effects. The very term "child guidance" implied that we had an instrument, efficient as well as insightful, for the guidance of parents and teachers in their management of disturbed children. To guide, means to have the necessary knowledge for prescribing remedies. Although the clinic used the services and expertise of psychiatrist, psychologist and social worker it gave an air of omniscience and omnipotence. The team acted as a unity and therefore its decisions had some measure of finality. This team structure did have an organic quality which implied, and rightly, that the three basic disciplines were interconnected and disclosed the many facets which made understanding almost complete. It is true that with the progress of modern medicine a growing number of sciences were co-opted to make diagnosis more comprehensive. Nevertheless the working together has not achieved the unity that the Child Guidance Clinic appeared to claim. Historically viewed, however, the approach to child disorders of conduct and character had roots in many discrete fields. Naturally paediatrics had the first entry into the field of study because the very structure of medicine concentrated the physician's attention on the vicissitudes of a child's health seen as the outcome of bodily disturbances which clearly did have psychological consequences. Anatomy and physiology and the growing interest in the organic roots of emotional expression established a bias which dominated all aspects of child disorder. The turning point in the study appears to have been the emergence of the psychodynamic theories of conduct initiated largely by Freud and some of the French school. The delinquency studies of Healey and Bronner in America, and of Aichorn in Vienna, well before the emergence of the Clinic team were the beginnings of the practical application of psychodynamics to child disorders of behaviour. It would be shortsighted and unhistorical to deny to earlier physicians and laymen concern about the health both physical and mental, of children. Dr. Alexander Walk has recently surveyed what he called the prehistory of child psychiatry, disclosing that over the centuries child disturbances were viewed at times with surprising insight. Alienists were prone to apply the

concepts of adult mental disorders to children, but their knowledge was largely based upon similarity of appearances rather than to the operation of similar causal agencies. Yet even in the Renaissance the great families were concerned with the proper upbringing of children. Phillippe Aries has disclosed in his book *The Centuries of Childhood* that the attitude to children in our Western culture was profoundly influenced by the religious structure of the community and its social hierarchical unfolding and changes. All these contributed to the pressures on the growing child and on parental attitudes towards them. The Age of Enlightenment to which Rousseau made the most striking contribution as far as child upbringing was concerned, might well be regarded as a catalytic agent which accelerated the interest in the specific problems of the child as well as by encouraging profound social changes. Alongside the advances in medicine went the psychological approach to education as something more than the application of discipline and rote learning to child growth on the mental side. Later the designing of tests of abilities and the overall cognitive endowment became a cornerstone in the edifice; further, the rapid growth of sociology and social anthropology made of the family and its social relations a special study of the child and its destiny a special concern. Genetics and biochemistry were to make fundamental contributions to the organic roots of the mental life, and finally psychoanalysis with its individual approach to the growth of the mind made of childhood experiences one of the foundations of the character of the adult. The aphorism that the child is the father of the man became more than a poet's insight.

These considerations bring into relief the many foundation stones upon which a scientific study of the child is possible.

Those who are to enter this expanding field of child study ought to be acquainted not only with the case material which is presented to them in bewildering complexity but with the theoretical constructs which tend to shape the collected data and for good or ill determine the therapeutic measures applied. A detached examination of these theories and clinical issues is the scientific intention of this book. There will be much inevitable overlap in such a volume but there is no need to apologize for this because on such issues as paediatric relations which may vary in different countries, developing sciences do not always follow similar lines. In the social field there will be and must be differences in approach, and not alone in the varieties of clinical experiences, but, in the evaluative judgements which inevitably enter into the normative and still young sciences. This is not a confession that child psychiatry remains wholly within the confines of scientific method, but an indication of the intellectual adventure which should attract all those who enter a developing field of such vital import to the community.

SECTION 1

THEORIES AND METHODS

CHAPTER 1

Child Psychiatry and the World Health Organization

by DONALD F. BUCKLE

THE explicit aim of the World Health Organization is to promote and protect the health of all peoples, health being a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.⁽¹⁾ In practice, the Organization deals in ideas, education and assistance.⁽²⁾

Within a year of the establishment of the World Health Organization in September 1948, it had convened a meeting of an expert committee to advise on its future programme in mental health.⁽³⁾ This expert committee made two important recommendations, the first that "the most important single long-term principle for the future work of WHO in the fostering of mental health is the encouragement of the incorporation into public-health work of the responsibility for promoting the mental as well as the physical health of the community", and the second "the desirability of concentrating especially on the therapeutic and preventive psychiatry of childhood". Within a short space of time, two monographs were published, both based on surveys of situations as they existed in the Member States. The first monograph was by Bovey⁽⁴⁾ on *Psychiatric aspects of juvenile delinquency*; ten years later, there appeared, also as a contribution to the United Nations programme on the prevention of crime, a study on juvenile delinquency by Gibbens.⁽⁷⁾

The second monograph was by Bowlby⁽⁹⁾ on *Maternal care and mental health*. It had a tremendous impact and aroused world-wide attention to the unfavourable effects of separating sick children from their parents, with consequent improvements in practices. A later follow-up in this field was the establishment of a European WHO study group on the child in hospital which specified ways of avoiding a sick child having the anxieties of separation added to those of his physical illness.⁽¹⁰⁾ Various researches in this subject were sponsored by WHO.⁽¹¹⁻¹⁴⁾

The provision of more detailed help to the Member States of WHO is organized through its six regional offices in Alexandria, Brazzaville, New Delhi, Manila, Washington and Copenhagen. Naturally, problems of ill

health brought about by infectious diseases have received priority in Asia, Africa and Latin America, although nutritional problems sometimes complicate mental health.^(41, 42) In Europe, where the presenting health problems are different, and where the need to tackle mental health questions is more urgent, the Organization has been most active in implementing the recommendations of its first expert committee. European countries possess a reasonably well-structured organization for the treatment of adult psychoses, but there are serious gaps in the health services for the psychiatric disorders of children. The Regional Office for Europe has endeavoured to improve this position in two principal ways, through providing training by means of consultations, courses and fellowships, and through the setting up of a series of small highly-organized international seminars for the discussion of key problems in this field. These seminars usually contain about fifty participants, most of whom are nominated by Member States. Three such seminars on child guidance have been held in 1952, 1956 and 1960,^(16, 17, 20) and two have been held on problems of subnormal children, in 1957 and 1959.^(23, 24) In 1962 a seminar was held on mental health and the family,⁽²⁹⁾ and in 1963 a seminar was held on the in-patient psychiatric treatment of children.⁽⁴³⁾ The aims of all these meetings have been to provide, through discussion, a kind of mutual education for the participants through the appreciation of one another's work and points of view. In all more than 400 persons have been involved in these seminars, including eighty consultants and lecturers; all the countries in the European Region have been represented. The United Nations and UNESCO have collaborated. Arising from the European meeting in 1956, a third WHO monograph in the field of child psychiatry was published on the subject of child guidance centres, under the joint authorship of Buckle and Lebovici.⁽¹⁷⁾

The foster care of children was the subject of three United Nations seminars in which WHO participated.

WHO has also sponsored two important seminars conducted by the World Federation for Mental Health, the one on mental health and infant development, held in the United Kingdom in 1952,⁽³³⁾ and the other on mental health and family life, held in the Philippines in 1958.⁽³¹⁾ A WHO seminar on mental health in childhood was held in 1953 in Australia.⁽³⁴⁾ A UNESCO conference on education and the mental health of children in Europe was held in Paris in 1952;⁽³⁷⁾ WHO was represented at this meeting, which based part of its discussions on a joint UNESCO-WHO report on mental hygiene in the nursery school.⁽³⁶⁾

More direct training activities have included the provision of numerous fellowships for study abroad for short and long periods of up to 2 years or more, and a systematic course in child psychotherapy arranged by WHO was given in Barcelona from 1957 to 1960. On many occasions WHO has sponsored and financed lectureships in different countries. Its expert committees have advised on education and training in mental health.^(44, 45, 46)

Although at the beginning of its work it was clear that the main needs in the more developed countries lay in increasing the amount of services in child psychiatry—particularly in child guidance—and in the solution of certain inter-professional problems which arise through the demands of teamwork in this complex field, two currently important lines of development now require attention.

The first of these is the application of scientific methods of assessment, recording and statistics to the evaluation of child psychiatric work.⁽¹⁹⁾ This can only be done through the establishment of regular, operational, recording systems which include prognostic assessments. Thus, through classification of methods of treatment—psychotherapy, medication, social work, counselling, and combinations of these methods, and through regular, periodic assessments of the children and families under treatment, one may learn something of the effects of the different forms of therapy offered by child psychiatric teams. These studies can be commenced on a relatively short-term basis, but need to be continued over a long period, with long-term catamnestic studies, before findings of permanent value can be adduced. This type of operational research is already under way in some countries. The methodology of surveys of child mental ill-health, necessary to provide information for planning services, has been of recent concern.^(20, 25) Briefly, the need for treatment of children is such that about one-sixth of children in a European community require professional attention at one time. However, such a loose statement is of little value to an administrator who is planning a therapeutic service; accurate assessments of the terrain are required, and such complicated subjects as the relation of incidence rates to changing public appreciation of mental health services must be dealt with in a realistic manner. This epidemiological problem is being faced in several projects with which WHO is closely concerned.

The second current problem in the field of the child psychiatry arises from an ever increasing and deeper appreciation of the importance of the family to the child's psychological state and the need for a more highly-integrated treatment of the family as a unit than has hitherto been the case. A book on this subject, dealing with questions of group therapy with families, the relation of marital problems to child development, the changing roles of women in our societies, and research in parent-child simultaneous therapy has been prepared.⁽³²⁾ Although child psychiatry has always recognized the importance of parents, the psychiatry of the future will expose more intimate relationships in family transmission and family learning and, consequently, new therapeutic techniques based on ideas deriving from milieu therapy, and new educational procedures using role-playing games, transactional analysis and psychodrama will evolve.

REFERENCES

General

1. World Health Organization, *Basic Documents*, 16th ed., Geneva, 1965.
2. WHO and Mental Health, 1949–1961. *Chron. Wld. Hlth. Org.* (1962) March to July; also published as a reprint.
3. World Health Organization, Expert Committee on Mental Health, Report on the First Session (1950) *Wld. Hlth. Org. techn. Rep. Ser.* 9.

Juvenile Delinquency

4. BOVET, L. (1951) *Psychiatric aspects of juvenile delinquency*, Geneva (*World Health Organization: Monograph Series*, No. 1).
5. European Exchange Plan Seminar on the Institutional Treatment of Juvenile Offenders, Vienna 1954, United Nations (Document ST/TAA/Ser. C/23).
6. The Detection of the "Pre-Delinquent" Juvenile; Comments on the methodology of research. (A contribution from the World Health Organization to the United Nations Congress on the Prevention of Crime and the Treatment of Offenders, 1955) *Int. Rev. Crim. Policy*, 1956, 9, 74–79.
7. GIBBENS, T. C. N. (1961) *Trends in Juvenile Delinquency* (*Wld. Hlth. Org. publ. Hlth. Pap.* No. 5), Geneva.
8. European Seminar on the Evaluation of Methods used in the Prevention of Juvenile Delinquency, Rome, 1962. GIBBENS, T. C. N. (1962) *Evaluation of methods of prevention of juvenile delinquency: the medical contribution*, European Office of United Nations, Office of Social Affairs. (Unpublished working document UN/SOA/SEM/8/WP. 3.)

Mother-Child Separation

9. BOWLBY, J. (1952) *Maternal care and mental health*, Geneva (*World Health Organization: Monograph Series*, No. 2).
10. Study group on the Child in Hospital, Stockholm, 1954. *The child in hospital* (account of meeting prepared by M. Capes) *Bull. Wld. Hlth. Org.*, 1955, 12, 427–470.
11. AUBRY, J. (1955) *La carence de soins maternels*, Paris, Centre international de l'Enfance.
12. DÜHRSSSEN, A. *Heimkinder und Pflegekinder in ihrer Entwicklung; eine vergleichende Untersuchung an 150 Kindern in Elternhaus, Heim und Pflegefamilie*. Göttingen, Verlag für medizinische Psychologie, 1958. (Beiheft zur Praxis der Kinderpsychologie und Kinderpsychiatrie, 1).
13. DAVID, M., ADAM, C., APPELL, G., and ANCELIN, J. Les séparations précoces mère-enfant; étude épidémiologique, *Informations sociales*, 1961, 15, No. 6/7, pp. 34–57.
14. AINSWORTH, M. D. *et al.* (1962) *Deprivation of maternal care* (*Wld. Hlth. Org. publ. Hlth. Pap.* No. 14), Geneva.
15. World Health Organization, Joint UN/WHO Meeting of Experts on the Mental-Health Aspects of Adoption (1953) *Report*, Geneva (*Wld. Hlth. Org. techn. Rep. Ser.* 70).

Child Guidance and Prevention

16. World Health Organization, Regional Office for Europe (1952) *Scandinavian Seminar on Child Psychiatry and Child Guidance Work, Report*, Copenhagen.
17. BUCKLE, D. F., and LEOVICI, S. (1960) *Child guidance centres*, Geneva (*World Health Organization: Monograph Series*, No. 40).

18. LEOVICI, S. (1958) La prévention en santé mentale chez l'enfant; réflexions à propos du Séminaire de Copenhague sous les auspices de l'Organisation mondiale de la Santé, Copenhague. *Psychiat. Enf.*, 1959, 2, 197-226.
19. BUCKLE, D. F. (1960) The efficacy of child guidance clinics. In: *Child guidance at home and abroad*. Proceedings of 16th Inter-Clinic Conference, London National Association for Mental Health.
20. World Health Organization, Regional Office for Europe (1960) *Seminar on Child Guidance* (Unpublished working papers), Copenhagen.

Subnormal Children

21. World Health Organization, Joint Expert Committee on The Mentally Subnormal Child (1954) *Report*, Geneva (*Wld. Hlth. Org. techn. Rep. Ser. 75*).
22. TIZARD, J. (1953) The prevalence of mental subnormality, *Bull. Wld. Hlth. Org.* 9, 423-440.
23. World Health Organization, Regional Office for Europe (1957) *European Seminar on the Mental Health of the Subnormal Child, Oslo Report*, Copenhagen.
24. BUCKLE, D. F. (1960) Community services for subnormal children. WHO European Seminar on the Mental Health of the Subnormal Child, Milan, 1959. In: *Planning and action for mental health*, London World Federation for Mental Health, 1961.
25. PETRINI, G. C. (1959) *Fréquence des insuffisances mentales chez les enfants des écoles primaires de la Province de Milan*. European Seminar on the Mental Health of the Subnormal Child, Milan. WHO, unpublished working document EURO-108.2/WP 7.
26. LURIA, A. R. (1959) Experimental study of the higher nervous activity of the abnormal child, *J. Ment. Def. Research*, Vol. 2, Part I, June 1959, 1-22.
27. LURIA, A. R. (1959) Dynamic approach to the mental development of the abnormal child, *J. Ment. Def. Research*, Vol. 2, Part 2, December 1959, 37-52.
28. EGG, M. (1962) *What happens to the backward child in western Europe?* International Conference on the Backward Child, London.

Mental Health and the Family

29. World Health Organization, Regional Office for Europe (1962) *Seminar on Mental Health and the Family*, Selected working papers, Copenhagen.
30. KRAPP, E. (1960) L'hygiène mentale et la famille. *Méd. et Hyg.* 18, 412-413.
31. LIN, TSUNG-YI (1960) *Reality and Vision*. A Report of the First Asian Seminar on Mental Health and Family Life, Baguio, Philippines, December 1958, Manila, Bureau of Printing.
32. BUCKLE, D. F. *et al.* (1965) *Aspects of Family Mental Health in Europe* (*Wld. Hlth. Org. publ. Hlth. Pap.* No. 28).

Child Development

33. SODDY, K. (ed.) (1955) *Mental Health and Infant Development*, 2 Vols. London, Routledge and Kegan Paul.
34. World Health Organization, Regional Office for Western Pacific (1953) *Seminar on Mental Health in Childhood, Report*, Manila.
35. TANNER, J. M., and INHELDER, B. (ed.) *Discussions on child development*. Vols. 1-4. World Health Organization Study Group on the Psychobiological Development of the Child. Geneva 1956-1960, London, Tavistock Publications.
36. World Health Organization/UNESCO, Mental hygiene in the nursery school, Paris, UNESCO, 1951 (Problems in Education, No. 9).
37. WALL, W. D. (1955) *Education and Mental Health*, UNESCO, Paris.

38. World Health Organization, Regional Office for Europe (1965) *European Seminar on Child Health and The School, Report*, Copenhagen.
39. BUCKLE, D. F. (1966) *Children and Schools: a reaction*. In: DAVID, H. P., ed., *International trends in Mental Health*, New York, McGraw-Hill.

Clinical

40. World Health Organization, Study Group on Juvenile Epilepsy (1957), *Report*, Geneva (*Wld. Hlth. Org. techn. Rep. Ser. 130*).
41. GEBER, M., and DEAN, R. F. A. (1955) Psychological factors in the etiology of kwashiorkor, *Bull. Wld. Hlth. Org.* **12**, 471.
42. GEBER, M., and DEAN, R. F. A. (1958) Psychomotor development in African children: the effects of social class and the need for improved tests, *Bull. Wld. Hlth. Org.* **18**, 471.
43. World Health Organization, Regional Office for Europe (1964) *Seminar on the In-Patient Psychiatric Treatment of Children, Report*, Copenhagen.

Education

44. World Health Organization, Expert Committee on the Undergraduate Teaching of Psychiatry and Mental Health Promotion (1961), *Report*, Geneva (*Wld. Hlth. Org. techn. Rep. Ser. 208*).
45. World Health Organization, Expert Committee on the Role of Public Health Officers and General Practitioners in Mental Health Care (1962), *Report*, Geneva (*Wld. Hlth. Org. techn. Rep. Ser. 235*).
46. World Health Organization, Expert Committee on Mental Health (1963), *Twelfth Report*, Geneva (*Wld. Hlth. Org. techn. Rep. Ser. 252*).

CHAPTER 2

The Relationship of Pediatrics to Child Psychiatry

U.S.A. View by MILTON J. E. SENN

HISTORICAL EVOLUTION OF THE RELATIONSHIP

That there is an established relationship between the disciplines of pediatrics and child psychiatry is today generally acknowledged. The depth and scope of the liaison, and its practical utilization in everyday activity is yet to be fully realized—but that a relationship exists is no longer questioned.

It was not always so. It took several decades to establish the groundwork and prove the premises for such a relationship before it could undertake to assume its valid role in the gestalt picture of the child—physiologically, psychologically, sociologically, and culturally.

Hence, one may view the relationship of pediatrics to child psychiatry, and their importance to each other, in terms of what they have been, what they are now and what the potential seems to be for the future.

There are some who feel that pediatrics failed as a precursor for child psychiatry, yet they would like to believe that pediatrics can still redeem itself as a significant contributor to the training services of child psychiatrists.

Looking at the past, there is evidence of very early interest on the part of pediatrics in what today is called child psychiatry. It is also clear that such interest waxed and waned over the years and was implemented too infrequently with appropriate changes in the diagnosis and treatment of patients and in training pediatricians. But what is more important and encouraging is that it engaged the attention of a few leading American and British practitioners of pediatrics in the behavior of children. This attention persisted and culminated in profound changes in pediatric education in the U.S.A. and in fostering within psychiatry an awareness of the unique nature of infants and children and the family.

Although no body of knowledge or of clinical practice was sufficiently integrated to constitute an organized speciality called “child psychiatry” until the nineteen-twenties, the roots of that development in medicine may be clearly traced to concepts held by a few unusual pediatricians as early as the end of the preceding century.

Such writers as Jacobi and Rachford in the U.S.A., Guthrie in Great Britain, and Czerny in Germany, were pioneers not only in fostering

specialization in medicine of a profession dealing with the diseases of children, but in emphasizing that the pediatrician's scope of concern must be broad and comprehensive. "Pediatrics deals with the entire organism", wrote Jacobi in 1889.⁽¹⁾ The natural tie of pediatrics with psychiatry was envisioned when in the same paper on The Relations of Pediatrics to General Medicine Jacobi said, "Psychiatry, too, has learned from the mental aberrations occurring at an early age."

Those medical writers among the American and British pediatricians who early foresaw the emergence of a changing pediatrics did little realize that they were fostering child psychiatry. They thought of behaviour principally as resulting from physiological functions of various parts of the body. Their interest in organic pathology naturally led them to think of psychopathology in terms of neurologic mechanisms, especially functions of the brain.

Rachford⁽²⁾ followed Setchenow, the Russian physiologist, in linking neuroses of childhood with action in involuntary inhibitory centers of the brain. Faulty nervous systems, especially structural deficiencies of the cortex of the brain, were believed responsible for a variety of behavioral disorders which included epilepsy, hysteria, enuresis, neurasthenia and many others. The general immaturity of the young human organism made it particularly susceptible to influences of heredity and environment. Intoxications of various kinds were believed to affect the central nervous system. These could be the products of auto-intoxication as in diseases of the biliary system, or of the glands of internal secretion, such as toxins from the thyroid gland.

Although thyrotoxicosis of the variety seen in adulthood was not recognized in infancy and early childhood, nervous babies with general irritability and rapid heart action were recognized frequently in clinical practice. Their symptoms were believed due to thyroid gland malfunction which produced intoxication. Cretinism and myxoedema were recognized as distinct clinical entities produced by a perversion of the normal chemistry of the body resulting from a deficiency of thyroid secretion. Excess of thyroid gland secretion was also considered as a cause of neurotic disease, the behavioral pathology being the result of a speed-up in the growth and development of the nervous system.

The American pediatrician Rachford had been trained in chemistry as well as in clinical medicine and so it was natural for him to think of disease in terms of physiological and chemical mechanisms. Practicing at a time when there was much interest in nutrition and in infant feeding, Rachford used the model which explained the etiology of malnutrition to explain the genesis of hysteria. Rachford reasoned that if there was not enough food to nourish muscle cells and this produced poor nutrition and a failure to thrive, why could there not also be a lack of nutriment in the nerve cells, thus producing a malfunctioning central nervous system? Poor blood, intestinal toxemias, as well as bacterial intoxications from infectious diseases

such as tuberculosis, often seemed combined in producing the "hysterical personality".

Present-day concerns about the ill effects of rapid and extreme changes in our society especially urbanization and industrialization, were even at that time advanced by Rachford in connection with those forces and neurotic illness. In the early nineteen hundreds the impure air and the noises of the city, the strain of school life and of school examinations, were already given a prominent place in the list of etiological agents making children emotionally disturbed. Many of the same behavioral traits which are considered as symptoms of neurotic difficulties today, such as sleep disturbances, habit spasms, finger sucking, and masturbation were described in Rachford's book in 1905. One difference is that sexuality was dealt with sparingly, but its relationship to neurotic disorders was expressed unequivocally: masturbation caused insanity!

A book even more remarkable than Rachford's was printed in London in 1907.⁽³⁾ Although its author's interest in pediatrics was as broad as that of his American counterpart, he dealt more deeply with his subject as if he were, in fact, a child psychiatrist. Leonard Guthrie must have been an unusual person because his book is so unusual. The extent to which he and his writings influenced and excited interest in the neurotic child of the twentieth century is not known. Unfortunately for pediatrics and for child psychiatry, his premature and tragic death deprived us of what might have been an especially rich blending of clinical pediatric insight with that of dynamic psychology.

Like others of his time, Guthrie listed as basic causes of neuroses the instability of the nervous system in early life, the imperfect development of the higher brain centers, defects in the inhibitory function by the higher over the lower centers along with other imperfections in the pathways of the various nerve impulses. Like Rachford and medical scientists everywhere, he also believed that autointoxication, gastrointestinal disease and parasites were agents commonly producing neurotic illness.

Yet Guthrie was not satisfied that these theories explained all the behavioral problems he encountered in pediatric practice. Although he had no theory of emotional development, his intuition, erudition and extensive reading of the best in literature, as well as clinical experience, gave him psychological insights into some of the mental mechanisms accepted today by psychiatrists as being basic forces in the production of many behavioral traits. Coinciding too with some current concepts of personality development derived from many present-day studies, are Guthrie's ideas about the influence of heredity as a determinant of neuroses; neurotic children invariably were the products of neurotic parents; an unstable emotional temperament was passed on from parent to child.

But Guthrie was interested not only in tracing the causative relationships of emotional disorders such as neurasthenia, hysteria, and various psycho-

somatic conditions (particularly the allergies), but he also attempted to help parents and children to overcome their difficulties. With this in mind he admonished them not to view themselves as sinners and warned against the psychic hazard of excessive guilt feelings. "The forces of heredity are mysterious, complex and little understood. It is therefore unjust to parents and to children alike to exaggerate the scanty knowledge we possess. 'Neither hath this man sinned nor his parents, that he was born blind', is a statement which might be remembered with advantage."

The high incidence of communicable diseases and the high infant mortality in the first quarter of this century focused interest of pediatricians on bacterial diseases and their prophylaxis. Yet the pediatric horizon was ever widening in a measurable fashion. Practices in public health and preventive medicine proved successful in controlling infectious diseases. These results stimulated some pediatricians to think of the possibility of combating the harmful influences of social deprivation. It opened the door to a view that this was not the "best of all possible worlds" and that many disorders stemmed directly from inadequacies of the social system. In 1915, Chapin⁽⁴⁾ advocated the selective boarding out of infants who were being reared in poor physical surroundings so they might receive individual care, better food, and affection.

Behavioral disorders were increasingly given more attention in pediatric practice because they frustrated physicians who did not have scientific techniques for correcting them, as they did for the management of physical diseases. Psychopathology continued to be explained primarily as neuropathology. This point of view was held by both pediatricians and psychiatrists, and methods of treatment were those of the neurologist, that is primarily by drugs, re-education by conditioning or persuasion. With a rise of interest by American psychologists in psycho-metric testing, pediatrics became aware of the value of intelligence testing.

In 1911 at Yale, Gesell, working as a psychologist, began his systematic studies on the problems of mental retardation leading to extensive investigations of normative behavior of infants and children. The work of Gesell gave pediatricians some maturational landmarks of development to identify in their growing child-patients. However, his research had little influence in basically changing the concepts held by psychiatrists about behavior and personality development. Only recently has his technique of developmental diagnosis been found practical and useful to pediatric neurologists.⁽⁵⁾ In Great Britain, Hector C. Cameron⁽⁶⁾ in 1919 reminded physicians and others of the emotional features of parent-child relationships, an aspect of human relations too often neglected in pediatric practice and only now re-discovered by child guidance clinics.

Beginning about 1930, strong voices were heard in Great Britain and in the U.S.A., provoking pediatricians and psychiatrists to consider the value which might come to such practitioners if they converged their interests,

which for so long had maintained only sporadic and tenuous contacts. In 1930, Kanner was assigned by Adolf Meyer, Chairman of the Department of Psychiatry at Johns Hopkins, to a position in the pediatric division of that School of Medicine. At the invitation of the Professor of Pediatrics, Edwards Park, an arrangement had been made which permitted Kanner to study children and their problems in an environment which brought together a number of medical scientists with a common aim to study the diseases of children. Kanner⁽⁷⁾ found the recorded observations of his medical colleagues valuable in his studies and in turn he was able to point up the psychological, educational, social and cultural ramifications of illness.

Of his work Kanner likes to say that his appointment was, "the first pseudopodium stretching out into pediatrics from the psychiatric amoeba". But his appointment was much more than an excrescence. It was an act having great influence in the rapprochement between pediatrics and psychiatry locally and nationally. The appointment of Kanner was tangible evidence of the interest in mental hygiene and child guidance held by Meyer, whose theory of psychobiology stressed the importance of the patient as a person whose entire life history must be studied in order to understand his problems as well as his mental and physical capacities.

Following Meyer's precepts and examples, Kanner used social workers, schools and other agencies to provide information about the patient and to help him in his life's adjustment. These practical suggestions not only became basic principles in child psychiatry but influenced both pediatric education and practice to think of mental health as a part of physical growth. The pediatric and child psychiatry alliance developed by Kanner not only helped to dispel the criticism of such prominent American pediatricians as Brennemann⁽⁸⁾ who accused psychiatry of viewing emotional disorders unscientifically, but it helped to do away with a conception of neurotic behavior as being caused by either organic *or* non-organic conditions. Multiple causality as well as eclecticism in the treatment of emotional disorders were demonstrated by Kanner.

The community child guidance clinics which had started in the U.S.A. about 1920 had little direct relationship with pediatrics except through the use of a pediatrician to help assess physical health of patients presenting emotional problems. Nor did pediatrics have more to offer to psychiatry at that time, and it was not until late in the nineteen-thirties that child psychiatrists and pediatricians in child guidance clinics began to teach each other about the development of infants and children, and to assess critically the relationship between physical illness and behavior. A small number of pediatricians who had become active partners in the work of the child guidance clinic became restless and dissatisfied with the narrowness of their roles and were stimulated to learn more about personality development and human behavior. As a result some left pediatrics, sought training in psychiatry and psychoanalysis,

and themselves became directors of clinics or practitioners of child psychiatry.

In the nineteen-thirties, as pediatricians in the U.S.A. had contact with psychoanalytically oriented psychiatrists, the influence of psychoanalytic theory and practice became manifest in pediatrics. Psychoanalysts urged pediatricians to view child development through their concepts of personality development, as well as the pediatric concepts and techniques used in the care of physically sick children. Many pediatricians were made uncomfortable, even angry, by such an approach and found a champion in Brenne-⁽⁸⁾mann who challenged psychiatrists to forsake an attitude of absolutism in viewing emotional disorders and urged them to become more objective, self-scrutinizing, pluralistic and relativistic.

Other pediatric leaders such as Powers and Aldrich were more sympathetic to the psychoanalytic point of view. Although not endorsing Freud's theories entirely and without reservation, they found that many child-care practices were too rigid and impersonally treated and recommended the more humane and psychologic approach derived in part from dynamic psychology.

The British pediatrician and psychoanalyst Winnicott, in 1931⁽⁹⁾ published a book of clinical notes on disorders of childhood which was read with interest and benefit by those pediatricians who were more accepting of psychoanalytic theory. Winnicott was not only a worthy successor to Guthrie at the Paddington Green Childrens' Hospital, but his book was in a way an extension of Guthrie's efforts. Contrary to the more ready acceptance of Winnicott's views in the U.S.A., one reviewer in Britain not only damned the book but called its author dangerous. In 1939, Crothers⁽¹⁰⁾ a pediatrician at Harvard, with neurological training, described the quest of "the pediatrician in search of mental hygiene", and pointed out the usefulness of educators, social workers and psychologists in pediatric practice. Crothers presented a broad view of pediatrics and redefined the field as one to include behavior, without making the pediatric practitioner a child psychiatrist.

By that time the Commonwealth Fund had established fellowships in psychiatry for persons qualified in pediatrics. It provided training for a two-year period to prepare them as teachers in centres where pediatricians and nurses might be given a working knowledge of medical psychology. Thus medical psychology could then be incorporated into the practice of pediatrics within hospital settings, both in-patient and out-patient services.

Kanner at Hopkins, Allen at the Philadelphia Child Guidance Clinic, Putnam and Jackson at Yale, and Senn^(11, 12) at Cornell and Yale, took prominent parts in training pediatricians in this fellowship program. From this program emerged a group who sought further training in psychiatry and ultimately became child psychiatrists. Others remained psychologically

oriented pediatricians whose aim was to assist the integration of psychiatry with other branches of medicine.

Although pediatrics by tradition and practice has had an interest in physical growth and development for many years, pediatricians like Washburn at Colorado, Stuart at Harvard and Sontag at the Fels Research Institute in Ohio, increasingly incorporated studies of personality development with their observations of physical growth and change. At first using only tests of intelligence, these workers then turned to personality tests, to psychoanalytic theory, theories of cognition and learning to judge and measure behavioral changes of children in their study populations. Psychoanalysts, especially Kris in New York and Anna Freud in London, increasingly urged pediatricians to interest themselves in infant and child behavior and to make long-term observations of children beginning in the neonatal period and extending through adolescence. The prime reason was to learn directly about the many facets of human personality with the aim of filling gaps in existing knowledge. In a few centers such as the Yale Child Study Center, the University of Colorado, the Mayo Clinic, the New York Medical College, and the Fels Institute in Ohio, pediatricians joined child psychiatrists, psychologists, educators and sociologists in programs of prospective research in child development which, with the study of retrospective psychoanalysis, was hoped would yield information from which basic principles of child rearing, child education and child care in health and in sickness would be evolved.

Although in theory, pediatricians have always had an opportunity to study infants and children in a longitudinal fashion beginning from birth, and physicians treating children have made many observations of growing infants and children, yet American pediatric literature contains few data of this kind. Most often such perceptions were incidental to patient care, made in the course of treating sick children, and frequently were not recorded. The merits of assessing physical growth and development of individuals longitudinally, instead of sporadically, were recognized only recently by pediatricians, as it became apparent that fluctuations and wide limits of difference in normal growth were easily mistaken for pathology if viewed only at various time intervals. When similar recognition is accorded to the merits of longitudinal studies of emotional growth and development, it is seen that these processes also proceed regularly but with individual variations, and have a wide range of normality. Interest in longitudinal research of growing infants and children has led to the belief by many pediatricians today, as well as by psychiatrists, that there are advantages to viewing human behavior and personality *developmentally* in clinic work as well as in the research laboratory. The result of such thinking has been a change of philosophy about the nature of children, their physical, psychological, social, and intellectual selves, as well as a change of attitude about the fundamental education and training of pediatricians and psychiatrists.

PRESENT-DAY RELATIONSHIP OF PEDIATRICS AND CHILD PSYCHIATRY

A definition of modern pediatrics may help one understand the nature of the contributions which are possible from that discipline in medicine to general and child psychiatry.

Today pediatrics is considered that sector of medical science concerned with growth and development of the child from conception through adolescence, with prevention and correction of conditions interfering with his health and his performance as a human being. This includes prevention of all diseases, whether physical or mental, accurate and prompt diagnosis and treatment of all pathological conditions, guidance of the child and his parents, and association with all other persons, medical and non-medical, required to help each child develop fully his potential capacities. In order to practice pediatrics in such a comprehensive manner, the pediatrician requires knowledge and skill to deal with a large spectrum of physical, psychological and social problems, and to use methods of public health, preventive medicine, clinical psychology and education. To do this adequately and successfully necessitates collaboration with persons in other disciplines, particularly psychiatrists, clinical psychologists, social workers, educators and sociologists. All these individuals with mutual concern and interest in children have contributed to each other.

The particular contributions of pediatrics stem from its traditional interest in physical disease (diagnosis, treatment and prevention), growth and development and genetics, and from its research which has been based primarily in biology, biochemistry, physiology, pathology, and epidemiology. It is from each of these segments within pediatrics that have come concepts and facts about the nature of infants, children and families, and of practices in their care which have applicability to child psychiatry, and the training of child psychiatrists.

It is recognized that the breadth of interrelation envisioned above is the goal towards which practitioners of both sciences would do well to aspire. It is also recognized that this ultimate blending of effort is fraught with many practical difficulties, especially in private practice. But if the guide-posts and directional motivation exist, and are well established in the educational program, there is every reason to believe that they will permeate and influence the entire practicing body of pediatrics and child psychiatry.

No attempt will be made in this paper to describe or even to name the various excellent programs of pediatric education and patient care which are today being carried forward in Great Britain and the U.S.A. Instead an attempt will be made to present a composite picture of the best of these endeavors, especially those which have been experimenting for several years in improving their work and in attempting to make contributions to child psychiatry.

CONTRIBUTIONS FROM PEDIATRICS TO CHILD PSYCHIATRY

1. Pediatrics offers an opportunity for child psychiatrists *to observe comprehensively the processes of physical and behavioral development, and for recognition of the physical and behavioral traits which ensue.*

Increasingly the pediatrician in the U.S.A. is beginning his service as guardian of the health of the infant before its birth. He serves as a consultant to the obstetrician and provides anticipatory guidance to parents as they early plan care and feeding of their babies.

The first opportunities for actually witnessing the behavior of the infant comes post-natally, when the newborn's reactions to birth stress and to extra-uterine life are observed by the medical and nursing team and when he is given the usual physical examination. In order to record in detail and with precision those developmental characteristics which in the future may serve as reference points against which to measure progress, the pediatrician does well to give each newborn a Gesell developmental examination. That technique has proved meritorious because it is structured and comprehensive in its approach. If the examination is made regularly by the same competent examiner for stated periods in the first two years of the baby's life, much will be learned about both the neurological as well as the psychological development, and any aberrations may be detected very early.

The newborn nurseries serve as places for observing the baby's first reactions to feeding and to sensory stimulation. It is not uncommon for nurses to suspect mental retardation in babies before there are any demonstrable signs of pathology. Such "sixth sense" intuition of experienced nurses may be checked out and then more precisely diagnosed by the developmental examination.

Early socialization responses of babies, reacting to their mothers, may be identified by watching the nursing-couple interact. In those hospitals where rooming-in arrangements are provided for mother and newborn, it is not uncommon that such women make cogent observations about many aspects of their baby's behavior. These, too, provide clues about normal and abnormal behavior which become more apparent with further growth and development of the child.

Maturational phenomena such as the onset of smiling, talking, walking and bowel and bladder control are best witnessed by parents in the home. When reported to the attending pediatrician in the regular well-child conferences and accurately recorded and arranged by him in a linear fashion, they become important data in gauging the nature of the baby's development. Such vital statistics provide clues about the nature of the maternal and child relationships, particularly the amount and kind of stimulation being provided, and the kind of discipline being invoked. The acceptance or non-acceptance of an infant's particular pattern of development and behavior tells much about parental behavior and personality. Although the

entrée to the pediatrician is predicated on specific immediate concerns about the baby or child, other concerns which are not quite so obvious may be inherent in the visit. The mother may be seeking help for herself. There may be stressful environmental problems, or serious health and emotional problems affecting members of the family. The pediatrician sees himself as being responsible for the child's care yet there is also an associated responsibility in terms of the entire family. It opens the door to unlimited opportunities for learning about families, their intra-member relationships, and what these mean for the development and health of all the members. For example, the spread of anxiety, as if by contagion, may be seen to spread from one person to another in a family, particularly from parent to child.

In their day-by-day practice pediatricians are epidemiologists of sorts. They become expert important members of the public health team when they deliberately search for diseases or other afflictions common at the same time to many individuals in their communities. Whenever a pediatrician records in detail an accurate family history he is making an epidemiological survey, whether the disorder is the common cold or a compulsion neurosis. As he elaborates his history to include family collaterals and other members of the community, he assumes as well the role of a social psychiatrist. Today pediatricians and child psychiatrists are concerned not only with the spread of infectious diseases in poverty ridden communities, but also with delinquency, school failures and racial antagonisms resulting from inequities of social, economic and political practices.

Narrowing the focus of inquiry to the family group permits also a precise formulation of the influence of heredity on physical disease and behavior. An accurate and detailed genetic family history has now become an essential part of every pediatric history. With a break-through in research on the causes of mental retardation have come important advances in understanding about the inborn errors of metabolism and their affects in the production of mental deficiency, as well as important clues about the relationship between other genetic errors and aberrations and mental illness.

A variety of projects are now being studied jointly by geneticists, biochemists, physiologists, pediatricians and psychiatrists to establish the nature of the relationship of defects in the human germ-plasm, whether genetically or environmentally produced, and the production of off-spring who are physically or mentally damaged. Studies of the effects of irradiation are examples of such detailed and longitudinal investigations being attempted.

Extensive investigations of intra-uterine environmental factors such as virus diseases of the mother, nutritional deficiencies, and various immunological reactions reveal interesting associations between the production of organic neuropsychiatric conditions and such toxic elements. Many investigations by pediatric groups joining with experts in obstetrics, epidemiology and neuropsychiatry demonstrate numerous sequelae of neuro-

logical and behavioral disorders in children born prematurely. Attempts to improve maternal care during the pregnancy period, to provide better obstetrical practices, as well as to obtain more prompt and adequate pediatric care for the newborn are aimed at reducing the frequency of brain damage which is responsible for many behavior disorders. Such steps constitute important and effective measures of primary and secondary prevention.

A number of physical variants such as prematurity, nutritional deficiency and some infections are found in association with mental disorders more frequently in the lower than in the higher social economic groups. Various possibilities may be considered in the interpretation of these relationships. Social psychiatrists in child psychiatry as well as pediatricians are offered a tempting fare of research material in this area.

Varieties of physique and of temperament are already quite distinguishable in early infancy, and the implications of constitutional differences for susceptibility to illness, as for the promotion of good health, are often suggested. Somato-typing has never become scientific enough to be used for specific forecasting of physical health, of growth and maturation or personality development. However, a few good studies have demonstrated that temperament of later childhood, and possibly longer, is set early in life and its *anlagen* may be perceived in the baby's pattern of reaction throughout the first several months of life. Psychiatrists as well as pediatricians interested in the etiologies of individual difference in behavioral style are combining forces in examining the genetic, familial, pre-natal, para-natal and early life experiences as well as the physical typologies.

On the basis of data available now, no single determinant is recognized as being more powerful than any other. Left with the realization that a variety of environmental mechanisms affect initial behavioral reactivity and contribute to its final product, students of behavior find it imperative to study the infant and young child not only within the framework of the hospital, clinic and office, but within other milieu such as foster homes, larger institutions, day care centers, and nursery schools. In all of these, it is possible to see changes in behavior which follow progressively day after day, and the developmental crises which are part of human development. For example, the early separation anxiety which normally appears towards the end of the first year of life, may be seen in a doctor's office as an infant clings to the arms of the mother at the time of an attempted examination. But it will already have been reported by mothers when their babies in the home were unwilling to be out of their view even for a few minutes at a time; and it may be witnessed again later at the time of starting school.

The conflict of independence and dependence, which remains for so many years in each child's life, manifests itself early around such things as feeding relationships. From then on it repeats itself at every opportunity which the child has for striking out on his own, and yet is held back by his own ambivalence. The specific original pattern of reaction which each child follows

in coping with his conflict of independence versus dependence tends to repeat itself, but in turn is reacted to by his environment.

Each environment responds selectively in showing distinct preferences thus reinforcing these basic patterns. Long-term observations of infants, children and their parents provide the psychologically oriented pediatrician and the child psychiatrist with opportunities for analyzing the psychological characteristics of his patients within the framework of whatever theory he finds congenial. For example, the psychoanalytically inclined may focus on the constancy of drive characteristics at different ages, document his observations by long-term studies, and test the correctness of predictions made from one period of time to the next.

2. Pediatrics offers opportunities for child psychiatrists *to observe the psychological concomitants of physical disease and to study in detail emotional disturbances which are secondary to physical illness.*

Pediatric wards of hospitals, clinics for ambulatory patients, offices of physicians and the family home bring the pediatrician in contact with many children suffering acute and chronic illnesses, with emergencies, with situations of death and near death. To all of these crises, people react with a host of emotions, many of them easily observed but some less overt and even disguised. Today hospitalization continues to be a threatening experience for many people, not only for the uninformed but for those who have some knowledge of what these institutions are and how life goes on there. It may be assumed that every child and his parents enter the hospital, if conscious, with feelings of apprehension, anxiety, resentment as well as with more positive emotions of hope and trust.

Much has been written in child psychiatry, particularly psychoanalysis, about the vulnerability of the pre-school child to surgery and body manipulations of every kind. The observant pediatrician as well as the psychiatrist collecting data may find in every pre-school child who has undergone surgery some evidence of his concern about body change and of fantasy about the nature of the operation. The adolescent who appears more courageous, less tearful and less overtly anxious, nevertheless demonstrates his underlying feelings by his behavior which may be a withdrawnness, non-communicability, complete submission or chronic complaintiveness and excessive demanding of attention. Acute deliria, hallucinations, delusions as well as acting-out aggression are common behavioral characteristics observed in children in hospitals whether facing extensive and serious surgical operations or such ordinary and routine procedures as venipuncture and removal of cerebrospinal fluid.

Chronic illnesses such as diabetes mellitus, nephrosis, or birth defects have their own psychological concomitants, their quality and extent depending on the age of the child, the psychological state of his family, the attitudes and actions of the nursing and medical teams, the nature of the ward populations, and many others. They tell the physicians much about the personality

of the patient and his family members, and such knowledge may be used in predicting the character of the behavioral reactions which possibly may appear after the child has returned to his home and whether he may require psychiatric assistance. Here are opportunities for primary and secondary prevention, not only of neurotic symptoms such as fear of separation from parent, enuresis, night terrors, but probably also of major neuroses as phobic reactions, depressions, and obsessive-compulsive behavior.

Mourning, grief and other reactions to death have been topics of interest to psychiatrists for a long time. As a rule these physicians are not in positions to see the development of grief at its very beginning, because they are not attending physicians to the dying. The family physician and the pediatrician are invariably involved in these matters, and with repeated experience develop ideas about how to deal with a person who is dying, and with those sharing grief because of the death of a loved one. As a result, these physicians, unconsciously more than consciously, develop their own particular patterns of coping with such people, the pattern sometimes being not as beneficial or therapeutic as psychiatrists would like. Within the last few years, child psychiatrists with colleagues in a few departments of pediatrics have selected grief and mourning reactions as topics for study and discussion. The goals have been to understand the psychologic mechanisms involved, and to make the medical and nursery personnel more insightful in facing an unpleasant and uncomfortable task and in helping the patient and those bereaved.

The hospital pavilions and clinics also provide repeated opportunities for pediatricians and child psychiatrists to witness behavior secondary to disorders of the organic central nervous system. Encephalitis with its particular behavioral syndromes is a good example. It is possible that fewer mistakes in diagnosis might be made as when the organic cause of an emotional illness is not recognized, if psychiatrists participated in the diagnostic studies of children with brain tumors, becoming better informed about the relationship of specific lesions in the brain and behavioral aberrations.

3. Pediatrics offers opportunities for child psychiatrists *to observe how modern pediatrics diagnoses illness and cares for sick children.*

In a symposium published recently in the *Journal of Child Psychology and Psychiatry*,^(13, 14) two psychiatrists with different points of view about the training of child psychiatrists, were in agreement that a good knowledge of pediatrics is invaluable for the training of the child psychiatrist. Although many pediatricians believe that no child psychiatrist should be so trained before he has been in pediatric training for at least a year, even a majority of child psychiatrists would agree that a closely supervised training for some period, optimally six months or more, should be within a pediatric department. It is obvious that where such contact with pediatrics is to be meaningful, it should not be cursory, unsupervised or deficient in other ways. For child psychiatrists who have been trained in their specialty without an

educational experience in pediatrics beyond medical undergraduate teaching, an association with a department of pediatrics while in child psychiatric training, or even later when in practice, could offer much. Especially those psychiatrists who have not had close contact with a modern department of pediatrics for a few years would do well to assume a relationship for even a brief period of time in order to get a review of the newer advances in the field of diagnosis and management of childhood illnesses. Such an association would demonstrate the prevalent problems which bring parents and children to pediatricians and family physicians. They would probably be amazed at the decrease in the number of diseases which formerly took so much of the physician's time in home and hospital, and even more so at the great amount of behavioral disturbances and of health and child rearing problems which now replace them. The decline in prevalence and in complications of communicable and infectious diseases are surprising to the child psychiatrist who has not been aware of them. Facts about the large numbers of new drugs (anti-biotic, anti-cancer, psychopharmacological), constitute medical information with which the psychiatrists should be almost as well informed as the pediatrician. Furthermore, the dramatic new techniques in surgery, such as open heart repair, organ transplantations and limb reattachment, all carry with them not only the potential for saving and prolonging lives, but a constellation of emotions, as despair gives way to hope and the near-dead are restored to life as if by magic. These crucibles of human trauma generate the need to talk with physicians and nurses about their feelings; to express gratitude, relief, and great joy. But also new anxieties can develop about what the future may hold. For example, there may be many questions about the future of the child whose congenitally damaged heart has been repaired, the probability of tissue breakdown, the possibility of assuming a more active life physically, the advisability of marrying and having children. The parent of the child with a transplanted organ, asks what influence this may have in changing his body function, lifespan, personality, sex, and his life as an adult. Too frequently the pediatrician plays his role as counselor by intuition rather than with knowledge gained from experience or accurate information learned from those who have worked with such patients over long periods of time. Here is a situation where it is logical for psychiatrists to join with pediatricians not only in research, but once facts are determined, in the counseling and in providing of psychotherapy.

4. Pediatrics offers an opportunity for child psychiatrists *to observe abbreviated interviewing techniques and study of biographical family history patterns.*

The psychiatrist by training is the most skilled of all the medical professions in the art and science of taking medical histories, of interviewing patients and families. He has taught much to non-psychiatric physicians about the medical anamnesis and the techniques of establishing relationships

with patients through interviewing. This is pertinent not only for the collection of accurate and valid data but for serving as instruments of psychotherapy.

The pediatrician because of the limitations set by the reality of practice is not inclined to take the detailed history of the psychiatrist. The more conscientious pediatrician nevertheless tries to demonstrate the value of his shorter method of interviewing in which he is able to get pertinent facts which help him elucidate family patterns, note onset of behavior disorders in the children and in other family members. This enables him to cope with many minor disorders like feeding and sleep irregularities in infancy, finger sucking, nail biting, enuresis, soiling and masturbation.

The child psychiatrist who by training in psychiatry has felt safe only in studying patients in great detail, in depth and for long periods of time, has increasingly been forced to look to transitory methods, and abbreviated techniques because of the great number of people who need his help. He has not come to this change of practice with great confidence, continuing to feel that short cuts invariably are poor substitutes for sound management. However, briefer methods of therapy and short-term relationships as opposed to long-term and depth analysis are methods which the psychiatrically oriented pediatrician has been testing for many years. He is now in the position to demonstrate to his colleagues in psychiatry, that many of the so-called brief methods may have merit in helping children and parents with emotional difficulties and do not necessarily imply superficiality.

This is not to say that the time has come when one may be complacent about any method, whether brief or long-term, or to feel with confidence that brief and long-term methods are interchangeable in treating children with psychological problems. However, pediatric departments afford child psychiatrists a laboratory where further experimentation may be carried on, and where new methods may be tried with safety and new drugs administered under properly controlled conditions.

5. Pediatrics offers opportunities for child psychiatrists *to deal with acute situations in which the behavior brings the child patient and his family for emergency care and first aid treatment.*

Mention has already been made of the value of emergency room experience for pediatrician and for child psychiatrist in observing behavior which has suddenly and unexpectedly appeared and requires medical attention. There are many conditions of this kind which demand prompt first-aid care and which are primarily psychological in nature. Attempts at suicide are probably the most frequent. Not only are physicians called upon to save the life of the patient, but when that is done, to protect him from other attempts at self-injury; to relieve his guilt, to assuage the apprehension of relatives and to deal with the episode in ways which are neither disturbing to the community or falsely reassuring to anyone.

What the pediatrician does in saving the life of the patient, not only has an effect subsequently on the physical condition of the patient but also on

his sensorium and behavior. For example, a brain may be spared trauma, like anoxia, by prompt and correct use of techniques and methods in resuscitating a patient. Furthermore, what the physician does psychologically will have a long-term influence. Punitive moralizing, as well as the deliberate use of fear, may arouse further feelings of depression, guilt, resentment or anxiety, and propel the patient into further thoughts of self-destruction. The psychiatrist with his skill and knowledge could be brought into a program of patient management as soon as possible if it were usual practice to have him in the emergency room. The contribution of pediatrics to psychiatry lies in part in his early sharing with the child psychiatrist of the responsibility for the care of these patients.

The list of psychological emergencies facing pediatricians are many, and include in addition to suicide attempts, child abuse (at the hands of deranged parents or others), rape, overt disorders such as hysteria, acute schizophrenic reactions, and anti-social behaviour such as fighting. Each of these requires of the pediatrician quick and accurate diagnosis and emergency management. His direct observations provide child psychiatrists with information about the nature of the behavioral reaction, and even something about the defences and mechanisms which are brought into play, consciously and unconsciously, by the patient and others as they attempt to deal with the crisis.

In the case of a rape, for example, a pediatrician is not only in a position to witness the acute emotional reactions in the child, but those of his parents, neighbors, civil authorities and sometimes the clergy. Regardless of his inclinations, he plays many roles. He is a combination of pediatrician, psychiatrist, policeman, psychotherapist. The information he collects is naturally of help to the psychiatrist interested in psychic trauma, in preventive psychiatry, and social psychiatry. The emergency room of a city hospital is a microcosm of a special kind, often serving as a laboratory for studying sociological trends in a community, cultural changes, economic conditions—all of which are reflected in the physical and emotional conditions of patients brought to it for immediate assistance.

6. Pediatrics provides an opportunity for child psychiatrists *to collaborate in patient study and care, and to test hypotheses and techniques in a controlled environment.*

One of the trends in pediatric practice is the increase in numbers of children admitted to hospitals because of what are called "psychosomatic disorders". Ulcerative colitis, anorexia nervosa, diarrheas, allergies, and many other conditions now constitute a large segment of the pediatrician's practice. Very often he is skilled in sensing early the relationship between psyche and soma, and in knowing that one does not hurriedly attempt to deal with one or the other aspect of the patient's problem before giving consideration to all the elements involved.

Fixation of attention to one aspect of the problem only, as in a hurried attempt to rid the patient of his physical symptoms, may give temporary

relief but may very soon lead to an exacerbation and even a worsening of the patient's condition. Or, unduly emphasizing the psychological side may give the impression to the patient and his family that the pediatrician is not competent to deal with the physical illness, or worse, is careless and without understanding of suffering. Neither approach facilitates the efforts of the psychiatrist who sooner or later joins the pediatrician as a diagnostician and therapist. Granted that it is not always immediately possible to engage the help of this colleague because of the unavailability of a child psychiatrist, or because of the reluctance on the part of the parent and the patient to have him in attendance, yet there is merit in an early sharing by the pediatrician of information and plan of study procedure.

The pediatrician like the psychiatrist will have theories about the etiology of the psychosomatic disturbance and these may be tested within a hospital setting, particularly where a *milieu* is provided which removes some of the variables which must play a part in the causation of the illness. Selective restriction of visitors and protection from other stress may serve as therapeutic tests. The administration of special tests and of particular drugs may be easier in the hospital. After the patient and his life situation have been studied and understood as well as possible, the hospital *milieu* may be gradually changed to somewhat resemble life outside of the hospital, a decompression experience if you will, in order to prepare the patient to cope more successfully with the ordinary exigencies of life.

7. Pediatrics offers child psychiatrists *a setting in a teamwork milieu for psychiatric training.*

Up to now, mention has been made of pediatrics as a place where the child psychiatrist may renew his knowledge about modern pediatric work and where he might try out some of his special skills as a trained psychiatrist. Consideration may also be given to the concept of using a pediatric service for training a child psychiatrist in psychiatry, by having him serve as a trainee consultant to the pediatrician in the hospital wards, clinics and in agencies outside the hospital.

In those hospitals with university affiliation where trained child psychiatrists have worked as consultants, they have often felt that they have been called in too late to help hospital professional persons cope in their own way with emotionally disturbed and mentally sick people. But this has changed as pediatricians have found child psychiatrists valuable colleagues, non-threatening and helpful associates, with mutual interest in the care of child patients. As a consequence they have sought psychiatric consultation earlier and more readily even in instances where no psychological problems were yet very evident.

At Cornell and at Yale, for example, child psychiatrists and trainees in that field have quite regularly made ward rounds with the pediatric staff, not because they expected to be or were sought as consultants each time, but where along with other medical colleagues and associates from other

sciences, there might be a joining together in thinking about children who for one reason or another had been admitted to hospital.

Out of such mass ward rounds have come some unusual suggestions from even the non-medical participants which have been helpful in better understanding the processes in the child, reasons for his illness, and methods of helping him and his family. The social scientist and the geneticist, for example, have pointed out clues showing the familial nature of a difficulty; the child psychiatrist like the pediatrician has been helped to see the comprehensiveness of the problem, the variety of etiological influences, as well as the continuum of their effects, and the manifold steps to be considered in helping the patient resolve his problem whether it be one of physical illness or emotional disequilibrium. The old fashioned pediatric ward-rounds, like those of other medical rounds, whereby the Chief or the Professor was the sole leader, is no longer realistic.

Medicine has become much too complex for any single person, however scholarly and skilled in his particular discipline, to be the sole interpreter of the phenomena in a patient, and the only one capable of teaching other professional persons. Combined and integrated staff ward-rounds have proved successful as a modern teaching device, particularly when it has grown up naturally so that the participants have a mutual respect for each other and enjoy an association in teaching.

8. *Pediatrics serves as the "source of origin" for child psychiatrists in recognizing special mental health needs of patients and the disorders requiring psychiatric help.*

Although modern pediatrics feels more competent and has been more successful than ever in dealing with some of the behavioral disorders in infants and children and in modifying pediatric care so as to prevent some of the so-called minor psychologic problems, there are still too many failures in management of even that group of disturbances. But when one looks at severe mental illnesses such as schizophrenia, autism, the depressions, one is impressed with the lack of skill, especially in pediatricians and others dealing with young children, in warding off and preventing them. The pediatrician does not have the tools, the skills, the insights to deal effectively in a prophylactic manner with severe mental illness. His contribution to child psychiatry then, in this sense, is a negative one.

However, there are elements of a positive nature in a pediatric approach when child psychiatrists are given opportunities to examine and to work with those children, and particularly those parents, where the pediatrician feels that he is unskilled in more than intuitively recognizing what lies ahead emotionally for his patients. Early referral to a child psychiatrist may not always assure prevention of a nervous disorder. On the other hand, it has been demonstrated many times that timely referral permits earlier and better psychotherapeutic assistance and amelioration of symptoms. The pediatrician has learned how to refer, when to refer and how to maintain a sup-

portive role to those patients and their families when child psychiatrists have become physicians in charge.

CONCLUSION

The goal of pediatrics continues to be the development of a profession in medicine which promotes mental and physical health and well-being of children. To attain this aim, modern pediatrics is attempting to combine new skills and insights from the biological sciences and the social sciences with old abilities of child study and patient care. This involves a synthesis of many disciplines, both within and without medicine. Attempts to do this vary from one institution to another.

The most effective methods of integration have been those in pediatric education at the graduate level where pediatricians in training and their pediatric teachers have opportunities to work with colleagues in psychiatry, social work, biological and social science and education. In its development, modern pediatrics has attempted to broaden its scope of interest and medical involvement without sacrificing proficiency and knowledgeability in the diagnosis and treatment of children who are ill with physical disorders and without diluting efforts to protect the physical health of the child. It is believed that pediatrics has fashioned itself into an important therapeutic instrument; but more, it has become an important component of preventive psychiatry and in this, it is closely related to both general and child psychiatry.

From a recognition and acceptance by both pediatricians and child psychiatrists that theirs is indeed an "indissoluble union" will come an acceleration to both sciences in their dynamic and essential trends of progress.

REFERENCES

1. JACOBI, A. The Relations of Pediatrics to General Medicine, *Arch. Pediatrics*, **6**, 758-769, 1889.
2. RACHFORD, B. K. *Neurotic Disorders of Childhood*, New York, Treat, 1905.
3. GUTHRIE, L. G. *Functional Nervous Disorders in Childhood*, London, Frowde, 1907.
4. CHAPIN, H. D. Are Institutions for Infants Necessary? *J.A.M.A.* **64**, 1-3, 1915.
5. GESELL, A., and AMATRUDA, C. S. *Developmental Diagnosis*, New York, Hoeber, 1941.
6. CAMERON, H. C. *The Nervous Child*, London, Oxford, 1919.
7. KANNER, L. *Child Psychiatry*, Springfield, Thomas, 1935.
8. BRENNEMANN, J. Pediatric Psychology and the Child Guidance Movement, *J. Pediatrics*, **2**, 1-26, 1933.
9. WINNICOTT, D. W. *Clinical Notes on Disorders of Childhood*, London, Heinemann, 1931.
10. CROTHERS, B. *A Pediatrician in Search of Mental Hygiene*, New York, Commonwealth Fund, 1937.
11. SENN, M. J. E. Relationship of Pediatrics to Psychiatry, *Am. J. Dis. Childhood*, **71**, 537-549, 1946.

12. SENN, M. J. E. Pediatrics in Orthopsychiatry, In: *Orthopsychiatry 1923-1948: Retrospect and Prospect* (edited by L. G. Lowrey), 300-309, 1948.
13. LEWIS, A. Symposium: Training for Child Psychiatry, *J. Child Psychol.* 4, 75-84, 1963.
14. WINNICOTT, D. W. Symposium: Training for Child Psychiatry, *J. Child Psychol.* 4, 85-91, 1963.

CHAPTER 3

Paediatrics and Child Psychiatry in Great Britain

by JOHN APLEY

SPECIALIZATION

Specialization increases knowledge, but at the same time fragments it. In medicine the disadvantages of fragmentation are greatest in specialities which are predominantly concerned with a part of the patient, a system or organ, or which rely on special techniques. The disadvantages should be less in those branches of medicine which focus on an age group.

When white light is resolved by a prism the colours of the spectrum can be observed in detail; but to see whiteness the colours must be fused again. There is no denying the need for intensive specialization in restricted fields; paediatric haematology and paediatric cardiology have essential contributions to make, and paediatric surgery and child psychiatry are now recognized disciplines in their own right. While they amply justify specialization, at the same time they provide reasons for integration, if the welfare of the whole child is to be paramount. It is, of course, a natural role of the general or family practitioner to integrate and co-ordinate; but his interests are inevitably dispersed, and for integration in depth, as well as for the promotion of knowledge, a concentration on age-groups is contributing much of value in the medicine of today.

What distinguishes childhood from all other ages is, in a word, growth. Growth occurs concurrently, though at different rates, in several dimensions—physical, intellectual, emotional, social—which to some extent overlap and influence each other. When any one of these is considered in isolation their associations and their reciprocal interactions may not be appreciated. Moreover, when a deviation of one becomes manifest clinically in terms of another, its significance may remain hidden.

When we apply these arguments to the medicine of childhood some relevant conclusions are reached. Child psychiatry and paediatrics might both be termed specialties, but this is to use the word in different senses. The child psychiatrist specializes in behaviour and social adaptation and he uses special techniques: the paediatrician is a generalist or consultant in an age-group who integrates all its aspects. The distinction is *not* between a child-mind specialist and a child-body specialist. The two disciplines of child

psychiatry and paediatrics are not competitive but complementary. I believe that they should be much more closely linked than they are at present. There has been a long and desultory flirtation between them, but it is high time they were married—if only for the sake of the children!

The benefits such a union can confer are certainly not restricted either to psychiatry or to paediatrics. I shall discuss them with some diffidence, as one who was trained first in general medicine, then in paediatrics, and has felt impelled to broaden his views, despite the lack of a formal training in psychiatry, to embrace the whole child.

PAEDIATRIC PRACTICE

The picture of paediatric practice which I attempt to outline is that which is seen in Britain, though it applies also to a varying extent in other countries. Even in this country there are considerable differences in individual practice, but the trend is in one direction.

Paediatrics is a recently developed branch of general medicine and is still evolving and adapting. In the early decades of this century malnutrition, infection and other physical aspects of illness absorbed almost all the energies of children's doctors, as they do still in the hungry and under-developed countries of the world. But as nutrition has improved, and as the threat of acute physical disease has lessened, paediatricians are increasingly confronted with childhood problems that were previously concealed and often unsuspected, or are becoming more common. Moreover, they and parents are setting continually advancing standards of all-round health. That the developmental problems of the whole child, which embrace disturbances of intellect, emotion and social adaptation, are forming an increasing part of paediatricians' work is due not only to their own broadening interests, but also to the expectations and, indeed, demands of the public and of the medical profession.

Children Referred to Paediatricians

There are regrettably few "prevalence studies", and the cases referred to consultant paediatricians obviously reflect in varying degrees the preferences of parents and their doctors, the special interests of individual paediatricians, and the availability (or lack of it) of child psychiatrists. A fairly consistent picture can, however, be drawn.

When 14 consultant paediatricians in Britain were asked about the types of cases they saw (Apley, 1962) they replied unanimously that "a considerable proportion" of children with emotional problems were referred to their clinics. These fell into three groups: *group (a)* children with a primary physical disorder (such as congenital heart disease) and an emotional overlay; *group (b)* children with psychosomatic problems; *group (c)* children with emotional and behavioural disturbances as such. In a survey carried

out in Bristol by a colleague with psychiatric and paediatric training (Fairburn, 1962) it was shown that "one third of paediatric referrals are precipitated by psychiatric disorder". At a paediatric out-patient clinic in another large city, while 19 per cent of the cases in 1947 had been referred on account of emotional problems, ten years later the proportion referred for emotional problems had increased to 36 per cent (Craig, 1959).

Personal Series

An analysis of 100 consecutive new cases referred to a paediatric out-patient clinic in Bristol during three winter months is shown in Table 1. It is not intended to perpetuate, still less to approve, an artificial separation between body and mind, but to illustrate that in many children referred by general practitioners to paediatricians the symptoms are not attributable to "an organic disease".

TABLE 1. 100 CONSECUTIVE NEW CASES REFERRED TO A PAEDIATRIC CLINIC

Age when first seen	Organic disease	No organic disease	Total
0—1 years	14	2	16
1—2 years	6	3	9
2—3 years	4	6	10
3—4 years	8	4	12
4—5 years	3	6	9
5—6 years	3	4	7
6—7 years	1	4	5
7—8 years	2	2	4
8—9 years	3	1	4
9—10 years	3	0	3
10—11 years	2	1	3
11—12 years	6	4	10
12—13 years	2	3	5
13 years	1	2	3
	58	42	100

Group I. Primary Organic Disease

The proportion with organic disease was slightly lower than had been found in a similar survey carried out at the same clinic eight years earlier. This group contains an unduly high proportion of children with congenital heart disease (14), in which I have a special interest, and of children with respiratory disease (14) because the survey was carried out in the winter. In many of the children with serious organic disease there was evidence of considerable emotional disturbance.

Group II. No Organic Disease

The proportion of boys to girls was 3 : 1, as compared with 2 : 1 in the whole series.

TABLE 2. NO ORGANIC DISEASE

asthma	9
enuresis	6
recurrent abdominal pain	8
recurrent limb pain	1
recurrent headaches, migraine	2
periodic syndrome	3
sleeplessness	2
behaviour problems	2
diarrhoea	1
feeding problem	1
faintness	1
underdevelopment	1
screaming attacks	1
slow speech development	1
emotional instability	1
normal child	2

Just as Group I is "loaded" because of my special interest in heart disease, so Group II is probably loaded with psychosomatic problems. Nine children with asthma have been tentatively included in this group because, in this multifactorial disorder, causative organic factors were not demonstrated while causative or precipitating emotional disturbances were prominent. Among the enuretic children were some with so-called "maturational delay" and no evidence of emotional disorder. The symptoms of many children reflected excessive parental anxiety. It was considered necessary to refer 7 of the 42 cases from the paediatric clinic to a psychiatrist.

Attention is particularly drawn to the fact that half the cases with no organic disorder were referred for a consultant opinion before they had reached school age or the age at which referrals to child guidance clinics are usually made.

The Paediatrician's Decision

Not only are emotional and behavioural disturbances common in children who suffer from an organic disorder, but many of the children referred to paediatricians have such disturbances without any organic disorder. Clearly, then, paediatrics demands an understanding of the whole child. An expertise restricted either to the body or the mind—somatectomy or psychectomy—is insufficient for more than limited purposes.

If the paediatrician is to recognize the diverse psychological aspects of childhood disorder he must obtain and maintain experience in them. He must continually develop and repeatedly check his experience, if only to

enable him to decide which of the patients that have been referred to him are in need of specialized psychiatric care. Even if it were desirable, it would manifestly be impossible to refer every child with an emotional or behavioural aberration to a psychiatrist.

The paediatrician is forced, then, to make a decision. Shall he refuse consciously to have anything to do with the psychological aspects of his patients?—or shall he attempt to make himself competent to deal adequately with some at least of them? The paediatrician who decides on the latter may be influenced by the impossibility in many instances of separating diagnosis from treatment; for, whatever the complaint, the proper treatment of the patient begins with the first words spoken at the first diagnostic consultation.

The paediatrician's decision is usually based on more obvious factors. On the demands made of him by patients and family doctors; on his personal views regarding the unity of the patient; on his willingness to expand his interests and continue to learn; on his assessment of his ability to deal with psychological problems; on the adequacy and the acceptability of the specialized psychiatric services that are available.

The decision may be largely moulded by the attitude of the paediatrician's psychiatric colleagues. The encouragement that he receives from critical yet co-operative colleagues can provide a constant stimulus in his attempts to understand the whole patient.

If he attempts to provide comprehensive care the paediatrician will constantly have to weigh its many advantages against its potential hazards. Will his efforts result in the harmful postponement of psychiatric treatment? Will disorders be irretrievably mishandled? Will his management create or bring to light new problems? Experience has shown that the hazards can be avoided or minimized and, indeed, in many instances the child who needs expert psychiatric treatment is likely to obtain it earlier if he is first referred to a paediatrician. The upshot will depend not on the paediatrician alone but also on his psychiatric colleagues, and the degree to which between them they can cultivate and maintain a mutually satisfactory liaison.

SHARED INTERESTS

Psychiatrists and paediatricians may share patients, particularly in children's hospitals with a modern approach, but they may more readily share an interest in professional spheres. Some of these will be discussed because of their importance in bringing together the two disciplines.

The Psychosomatic or Comprehensive Approach

A. Somatopsychic Disturbances

The term somatopsychic is often, and understandably, used in a pejorative sense. We should need no reminding that disorders primarily affecting bodily

function may disturb the whole person. The fact that the presenting symptom can be psychic serves to emphasize the need for a comprehensive approach.

Hallucinations or delirium may signal the onset of pneumonia or meningitis, and depression may characterize infective hepatitis or follow influenzal infection. More likely to be misinterpreted are the fatiguability that may be associated with chronic renal infection; the emotional instability often pronounced in untreated coeliac disease; the hysteria that occurs in amyotonia congenita; the disturbed behaviour seen with lead poisoning, intracranial neoplasms and degenerative nervous system disorders. Delay in diagnosis due to overlooking such associations may be as serious as that due to neglecting the influence of emotional disturbances in epilepsy or diabetes mellitus.

B. Psychosomatic Disturbances

No disorder could be more "physical" than congenital heart disease. Yet a considerable proportion of children with a cardiac malformation develop emotional problems, associated with anxiety and over-protection, and the disturbances may reverberate through the family. From the opposite point of view, an anxious child with a healthy heart may develop cardiac symptoms. "The diagnosis and management of a child with leukaemia or a fractured arm will incorporate both physical and emotional aspects, just as for the child with a tic or bedwetting" (Apley and MacKeith, 1962).

These simple illustrations of what is termed the comprehensive or psychosomatic approach are reminders, which should not be necessary but in practice often are, that in ill health the whole patient needs to be considered. Such an approach can be equated with good medicine, and if all medicine were good and comprehensive the term "psychosomatic" would be redundant. Meanwhile it may serve as an indication both of the multifactorial aspects of some common childhood disorders and of the many interests common to psychiatry and paediatrics. I shall discuss three topics to illustrate how the comprehensive approach can draw from both disciplines and, in return, contribute to both.

C. Recurrent Pains in Childhood

Pains that recur over a period of months or years are among the commonest disorders of childhood. Recurrent limb pains, miscalled "growing pains", occur in 1 of every 25 children (Apley and Naish, 1955); recurrent headaches in 1 of every 7 (Hughes and Cooper, 1956); and recurrent abdominal pains in 1 of every 9 unselected schoolchildren (Apley and Naish, 1959). But, though the pains may predominate at one site, often they occur at more than one, or they may migrate with time from one to another. As one child said: "Sometimes I get my tummy-ache in my head." Bouts of pain may be associated with pallor, vomiting and fever.

Because the main complaint is pain, investigations are often focused on bodily functions; so much so that the doctor himself may become "a pathogenic agent in perpetuating the illness by his well-meaning but never-ending efforts to find a physical cause" (Weiss, 1947). Misunderstood and unrelieved, pain—like enuresis or asthma—may itself provoke emotional disturbances. When, however, the results of controlled studies based on the whole child are applied, not only do the contributory aetiological factors become clear but treatment becomes rational and, as a rule, effective.

In a large series of children with recurrent pains investigation will reveal causative organic disorders of great interest and diversity; but together they explain only about 5 per cent of cases (Apley and MacKeith, 1962). In the remaining 95 per cent a causative organic disorder cannot be demonstrated, and in the large majority of this group the symptom is an expression of a reaction pattern to emotional stress (a pattern that is commonly familial). A comprehensive approach is essential in diagnosis, for confirming or ruling out organic disorder without harmful over-investigation, for eliciting the essential evidence of significant emotional disturbance, and for the understanding of the child and his disturbance. A comprehensive approach is equally essential for rational and successful management of the child (and the family).

Among the children in whom the symptoms are not due to a primary organic disorder, specialized psychiatric treatment is necessary for about 1 in 5. In the remainder good results can be achieved by the doctor who takes advantage of both physical and psychological methods.

In practice, it is usually the paediatrician who has to assess and sort the cases, and it is he who refers them when appropriate to a surgeon or a psychiatrist. If he learns both from surgery and from psychiatry he will be successful in the large majority of instances; and, in return, he is in the best position to pass on the accumulated experience to family doctors, to surgeons and to psychiatrists.

D. Infections

An impression that there may be an association between emotional disturbances and the onset and course of infections, such as the common cold or tuberculosis, has long been current. The factors that may influence individual susceptibility to streptococcal infection have recently been studied in some detail (Meyer and Haggerty, 1962). For a year 100 members of 16 families were kept under observation, with clinical evaluation of all the illnesses that occurred and periodic throat cultures and measurements of antistreptolysin O titres in the blood. Among the factors that proved important were, as would be expected, the individual's age and the closeness of contact with a source of infection. In addition, the onset of illness, and even a significant increase in antistreptolysin titres, was frequently related

to acute family crises (such as accidents, illness or death in the family, the father losing his job), or to chronic emotional stress situations.

E. Retardation of Growth

The physical growth of the child may be retarded as a result of under-nutrition, chronic infection, disorders of bone, metabolism, endocrines and others that are well recognized. But mental and emotional growth may be impaired together. Why are children with Down's syndrome (mongolism) stunted physically?—and why may institutionalized children receiving an adequate diet be short in stature?

Even in children living at home, a retardation of physical growth and, even more pronounced, of skeletal maturation, in association with impaired development of personality and intellect, may be attributable to grossly disordered family organization and severe emotional disturbances in the parents. "The biological pathways by which environmental circumstances influence basic processes such as growth remain matters for further investigation" writes J. B. Richmond in the preface to "Growth failure in Maternal Deprivation" (Patton and Gardner, 1963), and goes on to make the point that "Elucidation (will) . . . shed further light on the early development of mind-body relationships." This is of the utmost relevance to the present discussion.

Intellectual Development

In the dark dungeons of mental deficiency and mental retardation gleams of light are beginning to penetrate. They emanate from studies both of the physical and of the psychological aspects.

Advances in chromosome research are revealing genetic causes of mental retardation, and the literature on Down's syndrome (mongolism) alone is expanding so fast that frequent reviews are necessary to bring reports together (Richards, 1964). Even more promising are the continual discoveries of biochemical aberrations which are genetically determined. Twenty or more recognized inborn errors of metabolism are already known to be associated with mental retardation, and the number is continually increasing. Intellectual development may also be impaired by severe physical malnutrition in the early years of life (Stoch and Smythe, 1963).

In the majority of mentally retarded children, however, physical and biochemical abnormalities, and pathological changes in the brain, have not been found and probably do not occur; and the importance of environmental factors (familial, social and cultural) is becoming increasingly apparent. The harmful effects of emotional and intellectual "malnutrition" are being revealed and may, indeed, be widespread in Western civilization. There is evidence that severe mental defect can result from "grossly perverted rearing" (Bourne, 1955) or from insufficient protection against emotional

stresses (Clarke and Davis, 1963), while milder forms of mental retardation from similar causes are not uncommon in practice.

The aetiology of intellectual impairment embraces such a multitude of factors that its further study clearly calls for increasing liaison between psychiatry and paediatrics, and between these and many potential allies.

Prevention of Mental Disorders

Once it is agreed that the unique feature of childhood is growth, and that bodily, emotional and intellectual threads are interwoven, the necessity for a comprehensive approach to childhood disorders must be granted. In no field is it more likely to be contributory than in the prevention of mental disorders.

The "Prevention of mental disorders in children" was the stimulating theme of the Fifth International Congress of Child Psychiatry in 1962. I need refer to only a few of the many important contributions that were reported in *Acta Paedopsychiatrica* (1962), and from this forum the reader may refer to the fuller original sources.

In *A Foundation for Preventive Practice in Child Psychiatry* (p. 196) E. Lindemann presented recent evidence concerning maturation, developmental stages and critical periods of growth. Dr. J. Caplan, discussing the public health approach (p. 197) considered the phenomenon of crisis as a focus for preventive intervention. Dr. J. Tarjan (p. 205) reviewed many somatic aetiological factors, emphasizing *inter alia*, first, that somatic organization of the brain influences the child's psychological responses and, second, that social factors intertwine with somatic variables.

Dr. B. Pasamanick (p. 207) summarized his well-known contributions on "the continuum of reproductive casualty", i.e. the pathological sequelae of pregnancy, described as a spectrum or continuum. The *sequelae* range from death through major disabilities to minor handicaps; they are not restricted either to bodily or mental function and are often multiple.

In these and many other aspects of *primary* prevention the paediatrician is intimately concerned. The part he can play is all the more important because of his influence with parents in their children's upbringing, and because of his opportunities to modify potentially harmful experiences such as hospitalization, bereavement, and chronic illness. In *secondary* prevention he is often in a position to recognize the earliest manifestations of behavioural and adaptational disturbances, at a time when they should be most amenable to management.

In both primary and secondary prevention the paediatrician often carries the responsibility for implementing what is known. If prevention is to be widely practised, and if knowledge of it is to be advanced and promoted, there is a clear need for active co-operation between paediatrics and child psychiatry.

"MENTAL HEALTH IS EVERYBODY'S BUSINESS"

In our times, it is claimed, there is more mental ill-health than ever before, though the evidence is not conclusive or entirely agreed. What is agreed is that there is more concern about it, more time to think about it, and a greater desire that something should be done about it. As the conquest of physical disease achieves new triumphs people are no longer content merely to be kept alive; they expect to enjoy living, and turn increasingly to doctors to help them. For the medical profession this revolutionary change of attitude raises problems as vast as those of "the population explosion".

Although medicine is perforce sharing some of its functions in the mental health field with allied professions, much of the territory remains uncharted or unexplored. Many people, probably the majority, with mental illness do not enlist medical help; and, as Taylor and Chave have shown in *Mental Health and Environment* (1964), only a small proportion of the psychiatric cases which have been diagnosed by general practitioners are referred by them for specialist care. If only severe forms of mental illness are considered, the psychiatric services are reaching no more than a small proportion of the affected members of the population, as a prevalence survey in Anglesey shows (Jones and Miles, 1964). As regards children, it was agreed at a WHO Seminar on Child Guidance in 1960 that one in every six or seven children can be expected to develop disturbances of adjustment, and could benefit from expert advice, even though only a small proportion of them are in need of intensive treatment.

The span and burden of mental illness become increasingly evident in Western civilization, even though it does not attract nearly as much research as its importance would justify. There are not enough trained psychiatrists to deal even with the people who desire treatment, and probably never will be; and with a problem of such magnitude all sorts of expedients are attempted, either deliberately or *faute de mieux*. Patients known to have mental disorders may be looked after by medical auxiliaries, who are not always professionally trained (Rehin, Houghton and Martin, 1964). In a sector of Paris a pioneering scheme, organized by Dr. S. Lebovici, brings together child guidance teams and schoolteachers. Doctors who have no formal psychiatric training may themselves take the initiative by extending their practice to embrace psychological problems. One such experiment has been mentioned (Craig, 1959, see p. 41) and another will be briefly described.

The essence of the scheme (Apley, Philips and Westmacott, 1960) was direct co-operation in an out-patient clinic between paediatrician and psychiatric social worker, with reference to a psychiatrist only in exceptional instances. The patients were children with psychosomatic or emotional disorders. The methods used were "informal psychotherapy", resting on the exclusion of organic disorder, the evidence of emotional disturbance, and reassurance accompanied by discussion and explanations. In the largest group of cases the child and parents were helped to adapt, and factors playing a part in emotional stresses were modified. In a small

proportion (one in five) the child or parent needed help in his or her own right, or the reaction pattern seemed unalterable, and the case was referred to a psychiatric consultant. In one tenth of the cases the parents discontinued attendance.

In the series of 150 cases reported the short term results appeared satisfactory: in two thirds symptoms were relieved or abolished and the general attitude of the patient (and often of the parents) improved. No long-term follow-up observations were made, nor did they appear to be indicated because in a restricted community failures would be expected to be recognized and referred back.

With the methods used no serious disadvantages, arising through mishandling or delay, became apparent. Some clear advantages could, however, be demonstrated. First, most children referred to a paediatric clinic with psychosomatic or emotional disorders can be benefited without recourse to a psychiatrist. Second, the age of referral to a paediatric clinic is often lower than to a psychiatric or guidance clinic (see also Table 1), and a better response to treatment would be expected. Third, many of the children referred would never reach a psychiatrist, presumably because of an unfortunate bias in the minds of the lay public and some family doctors.

PSYCHIATRIC AND PAEDIATRIC LIAISON

That some such bias exists, against both adult and child psychiatry, will hardly be disputed. It is, of course, to a considerable extent based on out-of-date conceptions of what psychiatry is and does. Many members of the public and of the medical profession see it as it was fifty years or more ago, when, as a child psychiatrist has said, "In the beginning of this century, child psychiatry was limited to a sort of mental teratology without therapeutic consequences" (Michaux, 1962).

The unfortunate prejudice among some doctors, which was probably implanted during their own medical training, may blind them to the emancipation of psychiatry from taxonomy and institutions, and to the real advances in diagnosis and therapy (which in some instances are associated with the incorporation of physical methods). The prejudice is reinforced by a lack, still apparent in psychiatry, of scientific method in assessing both diagnosis and treatment, and perpetuated by a distrust of psychiatric jargon—though general medicine itself can to some extent be condemned for the same reasons. A prejudice against child psychiatry in particular is often justified on the grounds that it may be practised by psychiatrists who have not studied or worked with children.

The faults are not, however, all on one side. In a Harveian Oration on "Medicine and the affections of the mind" (1963) Sir Aubrey Lewis stated: "In spite of all the differences in approach and subject-matter, the study and care of psychological ills are as much a medical concern as is somatic disease. This seems obvious to us, but it has not always been obvious, nor outside this College is it everywhere conceded." Having disarmed his audience, he went on to say: "Cartesian dualism is disavowed, yet perforce

implied by nearly all psychiatrists." When Lewis remarked that "Psychiatrists, like other people, used to look for single causes for single diseases; ideas about aetiology were therefore simple, one-eyed, and usually wrong" he was in effect inferring the need for integration. With his special interest in, and knowledge of, the all-pervading factor of growth, the paediatrician appears to be the natural integrator in the broad field of child health.

Entrenched positions have been taken up on both sides of the Cartesian fence, and on the psychiatric side there is also some disagreement about the position of child psychiatry in relation to adult psychiatry (Winnicott, 1963) which is of concern to all those who are responsible for children. It is not disputed that the child psychiatrist should understand adults: not only has he to know what children will grow up to be, but he has to do his work with the help of parents and he has to appreciate that childhood symptoms may reflect or be provoked by parental factors. But it has not everywhere been agreed that the child psychiatrist or psychologist needs to know more about childhood than can be acquired merely by extrapolating backwards in time from adult life.

Just as psychological and psychiatric knowledge and experience are essential for the paediatrician, so paediatric knowledge and experience are essential for the child psychiatrist. I see no reason why the interested child psychiatrist should not recognize and treat anaemia or rickets: in good psychiatric practice bodily disorders are neither ignored nor overlooked, nor are they automatically referred to "organic doctors". I see no reason, similarly, why the paediatrician should not recognize and treat both psychosomatic and emotional disorders, within the limitations which he himself can recognize. It should be unnecessary to have to say, as a Senior Medical Officer of the Ministry of Health had to do: "Indeed, there are still one or two psychiatrists who consider that they only are capable of dealing with the emotional problems of children" (Alford, 1959). But both the confidence and efficacy of psychiatrist and paediatrician will be enhanced if his colleague is readily available.

There is an increasing acceptance of the need, after qualifying, for some continued training in psychiatry for paediatricians, and in paediatrics for psychiatrists. There is also a need for reciprocal education between both. This may be achieved informally during day to day work, in joint clinics, ward rounds, discussion groups and research projects. It may be attempted more formally by the mutual membership of professional societies. Thus the British Paediatric Association includes in its membership some child psychiatrists, and the International Association for Child Psychiatry and Allied Professions includes some paediatricians. But the extent of such co-operation is small and often appears to be grudging.

Some of the research activities which paediatricians and psychiatrists share have been indicated. Among others which they might profitably undertake together are the interactions of mothers and babies in the first weeks

of life; the correlation of physical and psychological reactions and measurements; the reverberations between the emotional and physical aspects of illness in different members of the family; the hazards of critical or vulnerable growth periods, including puberty and adolescence. These are, however, examples of tactical exercises: there is an over-riding need for strategic planning, to explore and promote more complete and extensive co-operation between the two disciplines.

Traffic, not only in patients but in staff and in ideas, should be encouraged in both directions. That some paediatricians still do not even attempt to learn or practise the comprehensive approach, or feel themselves threatened by the infiltration of psychology in what they have accepted as purely mechanistic problems, is unfortunately true, but the position is improving. Yet it is disturbing that an eminent child psychiatrist still finds it necessary to comment on “. . . the frequency with which psychiatrists are asked to advise paediatricians, and the relative rarity of the converse. A curious state of affairs, indeed, unless one were to assume that the psychiatrist knows all that the paediatrician does, plus something more—or that what the paediatrician knows is of no consequence to the psychiatrist” (Eisenberg, 1962).

Between them the child psychiatrist and paediatrician have to work out not so much how one may manage without the other, but how best to learn from and use the expert knowledge of the other for the benefit of their patients. In the attempts at *rapprochement* it is regrettable, though I believe it is true, that most of the advances have been made by paediatricians. There should be no barriers between psychiatry and paediatrics; they will be eroded from both sides if we continually remind ourselves that a large part of paediatrics is psychiatry, that a large part of preventive psychiatry is paediatrics and, above all, that the child is a whole person rather than a collection of parts.

ACKNOWLEDGEMENTS

During the preparation of this chapter it was read by Professor D. Russell Davis and by Dr. Ronald MacKeith. To both I am greatly indebted for friendly criticisms and helpful comments, though not all their suggestions were adopted. This should not be taken to infer that either psychiatrists or paediatricians have said their last word, but rather as an incentive to continue the discussion.

REFERENCES

- ALFORD, A. F. (1959) Child guidance and its future, *Public Health* 74, 14–20.
APLEY, J. (1962) The role of the paediatrician, in *Clinical Problems of Young Children*, Nat. Assoc. Ment. Hlth., London.
APLEY, J., and MACKEITH, R. (1962) *The child and his symptoms*, Blackwell Sci. Pubs., Oxford.

- APLEY, J., and NAISH, J. M. (1955) Limb pains in children, in O'Neill, D. F. (ed.), *Modern Trends in Psychosomatic Medicine*, Butterworth, London.
- APLEY, J., and NAISH, N. (1958) Recurrent abdominal pains: a field survey of 1000 school children, *Arch. Dis. Child.* **33**, 165-170.
- APLEY, J., PHILIPS, M., and WESTMACOTT, I. (1960) Psychogenic disorders in children: an experiment in management, *Brit. Med. J.* **1**, 191-192.
- BOURNE, H. (1955) Photophobia, *Lancet* **ii**, 1156-1163.
- CLARKE, C. M., and DAVIS, D. R. (1963) The families of mentally retarded children, *Devel. Med. and Child. Neurol.* **5**, 279.
- CRAIG, W. S. (1959) The paediatric management of emotional and behavioral disorders, *Internat. Rec. Med.* **172**, 682-695.
- EISENBERG, L. (1962) Possibilities for preventive psychiatry, *Pediatrics* **30**, 815-828.
- FAIRBURN, A. C. (1962) The relevance of psychiatric problems met in normal paediatric work, *Acta Paedopsychiat.* **29**, 237-238.
- HUGHES, E. L., and COOPER, C. E. (1956) Some observations on headache and eye pain in a group of school children, *Brit. Med. J.* **i**, 1138-1141.
- JONES, A., and MILES, H. L. (1964) The Anglesey Mental Health Survey, in *Problems and Progress in Medical Care*, ed. McLachlan, G., Oxford Univ. Press.
- LEWIS, A. (1963) Medicine and the affections of the mind, *Brit. Med. J.* **ii**, 1549-1557.
- MEYER, R. J., and HAGGERTY, R. J. (1957) Streptococcal infections in families: factors altering individual susceptibility, *Paediatrics* **29**, 539-549.
- MICHAUX, L. (1962) From etiological investigation to prevention of mental disorders, *Acta Paedopsych.* **29**, 203-204.
- PATTON, R. and G., GARDNER, L. I. (1963) *Growth failure in maternal deprivation*, Charles C. Thomas, Springfield.
- REHIN, G. F., HOUGHTON, H., and MARTIN, F. M. (1964) Mental health work in hospitals and local authorities, in *Problems and Progress in Medical Care*, ed. McLachlan, G., Oxford Univ. Press.
- RICHARDS, B. W. (1964) Recent Advances in Down's Anomaly (Mongolism), *Devel. Med. and Child. Neurol.* **6**, 175-182.
- STOCH, M. B., and SMYTHE, P. M. (1963) Does malnutrition during infancy inhibit brain growth and subsequent intellectual development?, *Arch. Dis. Child.* **38**, 546-552.
- TAYLOR, B. J. L., and CHAVE, S. (1964) *Mental Health and Environment*, Longmans, London.
- WEISS, E. (1947) Psychogenic rheumatism, *Ann. intern. Med.* **26**, 890-900.
- WINNICOTT, D. W. (1963) Training for child psychiatry, as part of a symposium in *J. Child. Psychol. and Psychiatry* **4**, 85-91.

CHAPTER 4

Assessment of Childhood Disturbances†

by ANNA FREUD

WHEN diagnosing the mental disturbances of children, the child analyst is confronted with difficulties which are due to the shifting internal scene in a developing individual and which are not met with in adult psychiatry.

One of these difficulties concerns the fact that, during development, symptoms, inhibitions, and anxieties do not necessarily carry the same significance which they assume at a later date. Although in some cases they may be lasting, and thus the first signs of permanent pathology, in other cases they need be no more than transient appearances of stress which emerge whenever a particular phase of development makes specially high demands on a child's personality. After adaptation to that particular phase has been achieved, or when its peak has passed, these seemingly pathological appearances either may disappear again without leaving much trace, or make way for others. In either case, what is left behind may be no more than an area of heightened vulnerability. These semblances of "spontaneous cures" are the equivalent of what used to be called "outgrowing" of difficulties, a phrase which, though outmoded, is in reality still quite appropriate.

Another difficulty for the diagnostician is bound up with the well-known fact that there are no childhood alternatives to the adult's efficiency or failure in sex and work, vital factors which are used in adult psychiatry as indications of intactness or disturbance. Although in what follows efforts

† *The Psychoanalytic Study of the Child*, vol. XVII, 1962, by permission of the editors.

This short article is a preliminary communication, extracted from an extensive study of normal and abnormal child development, the publication of which is in preparation by the author. The "Diagnostic Profile" contained in it has to be considered as a tentative draft, open to amendment and revision of all its parts, after their usefulness has been tested against clinical material over a prolonged period.

The case material on which the considerations are based is that of the Hampstead Child-Therapy Clinic, an institution maintained by The Field Foundation, Inc., New York; The Ford Foundation, New York; The Foundations' Fund for Research in Psychiatry, New Haven, Connecticut; The Anna Freud Foundation, New York; The Grant Foundation, Inc., New York; The Estate of Flora Haas, New York; The Old Dominion Foundation, U.S.A.; The Psychoanalytic Research and Development Fund, Inc., New York; The Taconic Foundation, Inc., New York.

will be made to outline some "age-adequate tasks" for children, these are by no means of similar diagnostic significance.

Since, thus, neither symptomatology nor life tasks can be taken as reliable guides to the assessment of mental health or illness in childhood, we are left with the alternative idea⁽¹⁾ that the capacity to develop progressively, or respectively the damage to that capacity, are the most significant factors in determining a child's mental future. Accordingly, it becomes the diagnostician's task to ascertain where a given child stands on the developmental scale, whether his position is age adequate, retarded or precocious, and in what respect; and to what extent the observable internal and external circumstances and existent symptoms are interfering with the possibilities of future growth.

But even this more circumscribed task, namely, to place the case of a given child in the correct position on the scale of normal or pathological development, is admittedly difficult, all the more so since, besides psychoanalysis, several other disciplines such as descriptive and dynamic psychiatry, psychology, and the social sciences have a stake in it. For the child analyst the appraisal of the child serves not only practical but also theoretical aims. To the first category belong the decision for and against treatment and the choice of therapeutic method; to the second, the attempts to formulate clearer pictures of the initial phases of those mental disorders which are known now principally in their later stages; to distinguish transitory from permanent pathology: and in general to increase insight into the developmental processes themselves.

The analyst's requirement for the latter purposes is a comprehensive metapsychological picture of the child (i.e., one containing structural, dynamic, economic, genetic, and adaptive data). This order cannot be filled with the comparatively meagre facts elicited from the children or their parents at their first contact with the Clinic. Therefore, the task of assessment, which begins with the diagnostic team, is continued by the child analyst, i.e., it passes from the stage of initial diagnostic procedure into the stage of therapy. Since in analysis the method of therapy coincides with the method of exploration, the whole bulk of analytic material can be utilized for the latter purpose or, as happens in analytic teamwork in the Clinic, be handed back to the diagnostician to confirm, correct, and expand his first impressions of the case.

In what follows we attempt to outline the setting up of a metapsychological framework of this kind, i.e., of a "*developmental profile*" in which the result of the analyst's diagnostic thinking is broken up into its component parts. Profiles of this kind can be drawn up at various junctures, namely, after the first contact between child and Clinic (preliminary diagnostic stage), during analysis (treatment stage), and after the end of analysis or follow-up (terminal stage). If this is done, the profile serves not only as a tool for the completion and verification of diagnosis but also as an instru-

ment to measure treatment results, i.e., as a check on the efficacy of psychoanalytic treatment.

At the diagnostic stage the profile for each case should be initiated by the referral symptoms of the child, his description, his family background and history, and an enumeration of the possibly significant environmental influences. From these it proceeds to the internal picture of the child which contains information about the *structure* of his personality; the *dynamic* interplay within the structure; some *economic* factors concerning drive activity and the relative strength of id and ego forces; his adaptation to reality; and some genetic assumptions (to be verified during and after treatment). Thus, broken up into items, an individual profile may look as follows:

DRAFT OF DIAGNOSTIC PROFILE

- I. REASON FOR REFERRAL (Arrests in Development, Behavior Problems, Anxieties, Inhibitions, Symptoms, etc.)
- II. DESCRIPTION OF CHILD (Personal Appearance, Moods, Manner, etc.)
- III. FAMILY BACKGROUND AND PERSONAL HISTORY
- IV. POSSIBLY SIGNIFICANT ENVIRONMENTAL INFLUENCES
- V. ASSESSMENTS OF DEVELOPMENT

A. Drive Development

1. Libido—Examine and state

(a) with regard to *phase development*:

whether in the sequence of libidinal phases (oral, anal, phallic; latency; preadolescence, adolescence) the child has ever proceeded to his age-adequate stage, and especially beyond the anal to the phallic level;

whether he has achieved phase dominance on it;

whether, at the time of assessment, this highest level is being maintained or has been abandoned regressively for an earlier one;

(b) with regard to *libido distribution*:

whether the self is cathected as well as the object world, and whether there is sufficient narcissism (primary and secondary, invested in the body, the ego, or the super-ego) to promote self-regard, self-esteem, a sense of well-being, without leading to overestimation of the self, undue independence of the objects, etc.; state degree of dependence of self-regard on object relations;

(c) with regard to *object libido*:

whether in the level and quality of object relationships (narcissistic, anaclitic, object constancy, preoedipal, oedipal, postoeidipal, adolescent) the child has proceeded according to age;

whether, at the time of assessment, the highest level reached is being maintained or has been abandoned regressively; whether or not the existent object relationships correspond with the maintained or regressed level of phase development.

2. Aggression.—Examine the aggressive expressions at the disposal of the child:
 - (a) according to their quantity, i.e., presence or absence in the manifest picture;
 - (b) according to their quality, i.e., correspondence with the level of libido development;
 - (c) according to their direction toward either the object world or the self.

B. Ego and Superego Development

- (a) Examine and state the intactness or defects of ego apparatus, serving perception, memory, motility, etc.;
- (b) Examine and state in detail the intactness or otherwise of ego *functions* (memory, reality testing, synthesis, control of motility, speech, secondary thought processes. Look out for primary deficiencies. Note unevennesses in the levels reached. Include results of Intelligence Tests);
- (c) Examine in detail the status of the *defense organization* and consider: whether defense is employed specifically against *individual drives* (to be identified here) or, more generally, against drive activity and instinctual pleasure as such; whether defenses are *age adequate*, too primitive, or too precocious; whether defense is *balanced*, i.e., whether the ego has at its disposal the use of many of the important mechanisms or is restricted to the excessive use of single ones; whether defense is *effective*, especially in its dealing with anxiety, whether it results in equilibrium or disequilibrium, lability, mobility or deadlock within the structure; whether and how far the child's defense against the drives is dependent on the object world or independent of it (superego development);
- (d) Note any secondary interference of defense activity with ego achievements, i.e., the price paid by the individual for the upkeep of the defense organization.

C. Development of the Total Personality

(Lines of Development and Mastery of Tasks)

While drive and ego development are viewed separately for purposes of dissection, their action is seen as combined in the *lines of development* which lead from the individual's state of infantile immaturity and dependence to the gradual mastery of his own body and its functions, to adaptation to the object world, reality and the social community, as well as to the building

up of an inner structure. Whatever level has been reached by a given child in any of these respects represents the end point of a historical sequence which can be traced, reconstructed, scrutinized for defects (this to be done during and after treatment), and in which ego, superego, as well as drive development have played their part. Under the influence of external and internal factors these lines of development may proceed at a fairly equal rate, i.e., harmoniously, or with wide divergences of speed, which lead to the many existent imbalances, variations, and incongruities in personality development. (See, for example, excessive speech and thought development combined with infantilism of needs, fantasies and wishes; good achievement of object constancy combined with low frustration tolerance and primitive defense system; or complete dependence for feeding, defecation, etc., combined with fairly mature intellectual and moral standards.)

At the time of diagnosis, the status of these developmental lines can be investigated by using for the purpose of examination any one of the many situations in life which pose for the child an immediate problem of mastery. Although such tasks may seem simple and harmless when viewed from the outside, the demands made by them on the personality show up clearly when they are translated into terms of psychic reality. Such translations are the indispensable prerequisites for assessing the meaning of successful mastery as well as for understanding failure and for allotting it correctly to the right sources in either the drives or the ego agencies.

Examples of such situations as they may occur in the life of every child are the following:

- separation from the mother;
- birth of sibling;
- illness and surgical intervention;
- hospitalization;
- entry into nursery school;
- school entry;
- the step from the triangular oedipal situation into a community of peers;
- the step from play to work;
- the arousal of new genital strivings in adolescence;
- the step from the infantile objects within the family to new love objects outside the family;

(For one particular situation of this kind, namely, "Entry into Nursery School," the psychological significance of the event has been traced in detail, taking into account the demands made on all parts of the personality.)

VI. GENETIC ASSESSMENTS (Regression and Fixation Points)

Since we assume that all infantile neuroses (and some psychotic disturbances of children) are initiated by libido regressions to fixation points at

various early levels, the location of these trouble spots in the history of the child is one of the vital concerns of the diagnostician. At the time of initial diagnosis such areas are betrayed:

- (a) by certain forms of manifest *behavior* which are characteristic for the given child and allow conclusions as to the underlying id processes which have undergone repression and modification but have left an unmistakable imprint. The best example is the overt obsessional character where cleanliness, orderliness, punctuality, hoarding, doubt, indecision, slowing up, etc., betray the special difficulty experienced by the child when coping with the impulses of the anal-sadistic phase, i.e., a fixation to that phase. Similarly, other character formations or attitudes betray fixation points at other levels, or in other areas. (Concern for health, safety of parents and siblings show a special difficulty of coping with the death wishes of infancy; fear of medicines, food fads, etc., point to defense against oral fantasies; shyness to that against exhibitionism; homesickness to unsolved ambivalence, etc.):
- (b) by the child's fantasy activity, sometimes betrayed accidentally in the diagnostic procedure, usually only available through personality tests. (During analysis, the child's conscious and unconscious fantasies provide, of course, the fullest information about the pathogenically important parts of his developmental history);
- (c) by those items in the symptomatology where the relations between surface and depth are firmly established, not open to variation, and well known to the diagnostician as are the symptoms of the obsessional neurosis with their known fixation points. In contrast, symptoms such as lying, stealing, bed wetting, etc., with their multiple causation, convey no genetic information at the diagnostic stage.

For the diagnostician trained in the assessment of adult disturbances, it is important to note that infantile regression differs various in respects from regression in the adult; it does not always require fixation points and it does not need to be permanent. As "temporary regression" it takes place along the developmental lines mentioned before, and forms part of normal development as an attempt at adaptation and response to frustration. Such temporary regression may give rise to pathology, but the latter will be shortlived and reversible. For purposes of assessment the two types of regression (temporary or permanent, spontaneously reversible or irreversible) have to be distinguished from each other, only the latter type justifying therapy.

VII. DYNAMIC AND STRUCTURAL ASSESSMENTS (Conflicts)

Behavior is governed by the interplay of internal with external forces, or of internal forces (conscious or unconscious) with each other, i.e., by the outcome of conflicts. Examine the conflicts in the given case and classify them as:

- (a) external conflicts between the id-ego agencies and the object world (arousing fear of the object world);
- (b) internalized conflicts between ego-superego and id after the ego agencies have taken over and represent to the id the demands of the object world (arousing guilt);
- (c) internal conflicts between insufficiently fused or incompatible drive representatives (such as unsolved ambivalence, activity versus passivity, masculinity versus femininity, etc.).

According to the predominance of any one of the three types it may be possible to arrive at assessments of:

- (1) the level of maturity, i.e., the relative independence of the child's personality structure;
- (2) the severity of his disturbance;
- (3) the intensity of therapy needed for alleviation or removal of the disturbance.

VIII. ASSESSMENT OF SOME GENERAL CHARACTERISTICS

The whole personality of the child should be scrutinized also for certain general characteristics which are of possible significance for predicting the chances for spontaneous recovery and reaction to treatment. Examine in this connection the following areas:

- (a) the child's frustration tolerance. Where (in respect of developmental age) the tolerance for tension and frustration is unusually low, more anxiety will be generated than can be coped with, and the pathological sequence of regression, defense activity, and symptom formation will be more easily set in motion. Where frustration tolerance is high, equilibrium will be maintained, or regained, more successfully;
- (b) the child's sublimation potential. Individuals differ widely in the degree to which displaced, aim-inhibited, and neutralized gratification can recompense them for frustrated drive fulfillment. Acceptance of these former types of gratification (or freeing of the sublimation potential in treatment) may reduce the need for pathological solutions;
- (c) the child's over-all attitude to anxiety. Examine how far the child's defense against fear of the external world and anxiety caused by the internal world is based exclusively on phobic measures and counter-cathexes which are in themselves closely related to pathology; and how far there is a tendency actively to master external and internal danger situations, the latter being a sign of a basically healthy, well-balanced ego structure;
- (d) progressive developmental forces versus regressive tendencies. Both are, normally, present in the immature personality. Where the former outweigh the latter, the chances for normality and spontaneous recoveries are increased; symptom formation is more transitory since strong forward moves to the next developmental level alter the inner

balance of forces. Where the latter, i.e., regression, predominate, the resistances against treatment and the stubbornness of pathological solutions will be more formidable. The economic relations between the two tendencies can be deduced from watching the child's struggle between the active wish to grow up and his reluctance to renounce the passive pleasures of infancy.

IX. DIAGNOSIS

Finally, it is the diagnostician's task to reassemble the items mentioned above and to combine them in a clinically meaningful assessment. He will have to decide between a number of categorizations such as the following:

- (1) that, in spite of current manifest behavior disturbances, the personality growth of the child is essentially healthy and falls within the wide range of "variations of normality";
- (2) that existent pathological formations (symptoms) are of a transitory nature and can be classed as by-products of developmental strain;
- (3) that there are permanent regressions which, on the one hand, cause more permanent symptom formation and, on the other hand, have impoverishing effects on libido progression and crippling effects on ego growth. According to the location of the fixation points and the amount of ego-superego damage, the character structure or symptoms produced will be of a neurotic, psychotic, or delinquent nature;
- (4) that there are primary deficiencies of an organic nature or early deprivations which distort development and structuralization and produce retarded, defective, and nontypical personalities;
- (5) that there are destructive processes at work (of organic, toxic, or psychic, known or unknown origin) which have effected, or are on the point of effecting, a disruption of mental growth.

REFERENCE

FREUD, A. Indication for child analysis. *Psych. anat. Study of Child*, vol. 1, 1946.

CHAPTER 5

The Psychoanalytic Theory of Child Development

by W. H. GILLESPIE

INTRODUCTION

It must be made clear at the outset that this chapter will amount to no more than a discussion of some aspects of the psychoanalytic theory of child development; any attempt at a true exposition of the theory, even a condensed one, would be much too ambitious, and would require a volume rather than a chapter. It is easy to see why this is so, for the subject is almost synonymous with psychoanalytic psychology in general. This is because one of the most characteristic features of Freud's approach to psychology is the genetic point of view, which seeks to understand current manifestations and problems as the outcome of earlier circumstances or determinants. The genetic principle was inherent in the early work of Breuer and Freud (1895), summarized in the aphorism that "hysterics suffer from reminiscences". As psychoanalytic experience and knowledge progressed it became increasingly evident that this principle was very extensive; the origins of neurosis, seen at first in the recent past of the patient, had to be pursued first to adolescence, then to early childhood.

For some time Freud was misled into the belief that most, if not all, of his neurotic patients had been exposed in childhood to some sexual experience of a traumatic kind; eventually he recognized that in general what he had unearthed were childhood fantasies rather than memories of actual events, and this brought about an extremely far-reaching change in his views, for it led to the discovery of what he called "infantile sexuality" as a normal spontaneous part of human development, something independent of any chance or abnormal traumatic experience, since it depends fundamentally on innate instinctual drives. By 1905, when he published the "Three Essays on the Theory of Sexuality", he had already formulated the idea that this infantile sexuality has to be regarded as the foundation upon which much of later psychological life is built; depending on its later vicissitudes, and particularly on the transformations that occur at puberty, the outcome may be normal development, or neurosis, or sexual perversion. This masterly piece of theoretical and clinical condensation should be studied by anyone

wishing to understand the historical background as well as much of the current content of the psychoanalytic theory of child development.

Freud's researches were for many years directed mainly at the uncovering of unconscious mental processes seen primarily as the outcome of instinctual drives. During his later years, and since his death in 1939, much psychoanalytic effort has been aimed at the better understanding of mental processes of other kinds, many of them likewise unconscious, it is true, but processes directed towards the understanding and control of the environment as well as towards knowledge and management of the other, drive-impelled processes. I refer, of course, to the processes described as activities of the ego. In this way an elaborate ego psychology has grown up and is still expanding vigorously. Clearly the ego too has a vitally important developmental history, paralleling the instinctual development described in the "Three Essays".

The theory of child development was inevitably influenced profoundly by the actual psychoanalysis of children so soon as technical methods were devised whereby this became practicable. The fact that this work with children soon led to sharp differences of opinion both on technique and on theory introduces a further complication. There are in fact at this time psychoanalytic *theories* of child development rather than a single all-embracing theory.

In view of these and other complications it seems best in this chapter to present an account which is relatively clear and integrated rather than systematic and comprehensive. I intend, therefore, to treat child development in the chronological manner which seems natural in view of the subject matter.

PRENATAL DEVELOPMENT

We assume that most of those qualities which the human child has in common with the young of other mammals, as well as those which are specifically human, are the outcome of his hereditary endowment interacting with a prenatal and postnatal environment which is reasonably close to average. But we go further than this and suppose that many of the differences which distinguish one human child from another owe their existence in large part to inherited constitutional factors. Psychoanalysis does *not* take all knowledge for its province; the study of these constitutional, hereditary factors is outside its field of investigation, and it is a vulgar error to suppose that because a psychoanalyst, as such, is not qualified to study certain aspects of child development this means that he denies their importance. It is astonishing to discover how many apparently well-informed people hold the grossly erroneous belief that Freud tended to deny the importance of the constitutional, hereditary factor in determining individual development.

The unicellular fertilized ovum is evidently the first beginning of any individual, whose original qualities are given by the usually unique endowment received at conception. The development from this beginning up to a full-term newborn baby is a vastly more revolutionary process than that of growth from earliest babyhood up to maturity, staggering though these latter changes certainly are. And although we are learning more and more about the noxious influences that may affect embryonic and foetal development, it seems reasonable to assume that most of what happens during the intrauterine period is determined genetically rather than by the environment provided by the mother's body. Indeed, a leading characteristic of the prenatal environment, it seems fair to assume, is its relative uniformity and the fact that it does not demand reactive adaptations on the part of the foetus. Nevertheless, a complete metamorphosis occurs during these nine months, the changes being presumably governed essentially by some kind of code of instructions inherent in the fertilized ovum. Whether this vast process of maturation that occurs before birth is accompanied by anything that can usefully be called mental activity is, I think, still an open question for most psychoanalysts, who are so well aware that "mental" is far from synonymous with "conscious". A few have convinced themselves that important psychological processes do occur *in utero*, but the majority remain sceptical.

NEONATAL CHANGES

Let us leave this interesting but highly speculative field and assume that the child has been born. In doing so, we are passing over another area of controversy, namely the psychological significance of the birth process. At one time Otto Rank (1924) attributed the utmost importance to this as the ultimate origin of human anxiety and neurotic suffering; and for a while Freud was inclined to agree with him, because he had long been impressed with the similarity between certain somatic manifestations of anxiety and the physiological effects of the birth process. However, Freud soon perceived that Rank was carrying this idea to excessive lengths and dissociated himself from it; nevertheless he continued to hold that the birth process is significant in relation to the bodily changes in anxiety.

It is when we come to consider the postnatal development of the infant that we enter the area where it is generally agreed that at least the first glimmerings of psychological processes can be discerned, or at least inferred. It is now that the newborn child is inevitably exposed to situations which are not exactly geared to his momentary needs—and the existence of such situations is perhaps the precondition for the development of mental activity, in all its aspects, cognitive, affective and conative. We must therefore consider what are the needs of the newborn, and what are the factors that decide whether or not they will be met satisfactorily. Clearly, his immediate needs correspond to those elements of the intrauterine situation of which

he has been deprived by the event of birth, and the most obvious and pressing one is oxygen. The successful replacement of placental supply by respiratory activity no doubt depends on the fact that the necessary physiological mechanisms are already at full term long since matured; and it is only under very rare conditions that there is any failure of the environment to supply the amount of oxygen needed. The provision of warmth and prevention of excessive loss of body heat is another environmental requisite which is nearly always forthcoming, though here it will be noted that in non-tropical conditions the baby is dependent on human intervention for the satisfaction of this need.

THE NURSING COUPLE

Finally, we come to the baby's nutritive needs, and here we enter unmistakably into the area of psychoanalytic discourse—the area of instinctual drives, object relationships and identifications, ego development, defence mechanisms and so forth. Perhaps the most crucial point is this—in the context of infant feeding, for the first time, the infant's development becomes unavoidably involved with one or more other human beings and with the appropriateness and adequacy of their activities. Merrell Middlemore (1941) very properly called her study of breast feeding "The Nursing Couple"; the point here is that whatever may be the infant's subjective experience and irrespective of questions as to what is the age when fantasy can be attributed to him, or at which he can conceive of an external mother figure, we know objectively that there is another human being involved, and that there are varying degrees of adequacy with which the maternal function is carried out.

Although this is a fact obvious to everyone, a fact acknowledged by every psychoanalyst from Sigmund Freud onwards, it is mainly in more recent years that the vital importance of the objective, real environment, and especially of the kind of mothering the infant receives, has been particularly emphasized, notably by Winnicott (1958). In his view, the normal infant comes into the world with an innate equipment prepared to interact with an average "good enough" environment, i.e. not requiring perfection, only a modicum of mothering, which the average mother is sufficiently devoted to supply. Serious difficulties will arise where this is for any reason not forthcoming. It should be noted that Winnicott speaks of "mothering", and of the infant's need to be "held" by the mother, rather than of the feeding situation as such; and in this respect, despite a very different approach, Bowlby's (1958) point of view is similar, for he holds that it has been a psychoanalytic fallacy to place so much stress on the *oral* quality of the infant's early tie to his mother; Bowlby's arguments are based partly on the study of the effects of separation, partly on ethological animal researches.

Observation of infants nevertheless strongly suggests that if it be admitted that they have a psychological life at all, then it is certainly focused for at least some weeks, if not several months, upon the feeding situation; and the satisfied young infant spends much of the remainder of his time sleeping, and even then gives some evidence of dreaming of or hallucinating the suckling experience. Although it is well known that a period of mutual adaptation and learning is commonly necessary for the nursing couple before they settle down completely efficiently to their roles, nonetheless it cannot be doubted that the average healthy infant comes into the world endowed with a breast-seeking tendency and a sucking reflex which can be reasonably described as a part of the human instinctual endowment. The eagerness with which this activity is pursued, the apparently angry reaction when it is interrupted, the ecstatic satiety followed by sleep when it is completed, the sucking on substitute objects even at times when the nipple is available—all these impressed others before Freud with the *sexual* element in the infant's sucking activities; but Freud was the first to pursue this idea systematically and relentlessly. He came to see the mouth, lips, tongue, etc. not simply as an apparatus for ingesting food, but as the first important erotogenic zone, as important to the infant for his sexual satisfaction as the genital erotogenic zones are for the healthy adult.

Not only does the feeding experience represent the earliest form of sexual satisfaction—it is commonly also the occasion for the first aggressive manifestations, associated as these commonly are with frustrations in this area, either for external or internal reasons. It is easy to conceive of these teleologically, or if you will from the point of view of survival value, as reactions likely to bring about a modification of the situation favourable to the infants' oral and nutritive needs. Particularly in later infancy, with the development of teeth, biting impulses play a very important part in these aggressive manifestations.

LIFE AND DEATH INSTINCTS

As is well known, Freud (1920) eventually formulated the polarity of the primary instincts in terms of sexual instincts in the widest sense, and aggressive instincts—usually, it is true, fused in varying proportions, but essentially opposites rather than adjuvants. This was finally expressed by him as the opposition between Eros and Thanatos, the life instinct and the death instinct. This is certainly not the place to discuss these very difficult and obscure matters, and it is mentioned here only because Melanie Klein and many of her followers have taken these somewhat metaphysical formulations of Freud very literally and applied them clinically and in the theory of child development. According to this view the infant is exposed from the beginning to his own death instinct, whose aim is his own death; by a process of projection the danger is apprehended as coming from a persecuting outside world, which he then attacks, at least in his fantasy. It will be seen

that there is little in common between this approach to the understanding of aggression and the view that aggression represents an essentially innate technique (however much learning plays a part later) for attaining instinctual aims which in themselves are not aggressive; and as both these views are held by important groups of analysts the truth of my statement that there is no *one* psychoanalytic theory of child development will be appreciated.

Melanie Klein's Views

The fact that Melanie Klein (1932, 1948) not only accepted Freud's theory of an innate death instinct originally threatening to end the individual's own life, but adapted it to clinical uses (that is, to the understanding of the problems of patients, both children and adults) is in at least one way unfortunate; for the opposition and criticism directed against what many analysts regard as a misuse of Freud's last instinct theory has often led to a failure to appreciate the value of her contribution to the psychoanalytic picture of the early stages of human development which we are now considering. This contribution, as she reasonably claimed, was based firmly on the work of Freud, and much influenced by Abraham and Ferenczi, her two principal teachers. By applying psychoanalytic knowledge to very young children, using the play technique which she developed, Melanie Klein brought early childhood to life in a way analogous to what Sigmund Freud had done for the oedipal period—in other words, she endowed it with a mental content, and described it as filled with fantasies. She described these in great detail, with special emphasis on highly aggressive fantasies related to attacks on the frustrating mother and her inside, conceived as containing all those desirable things of which the child feels deprived. Another direction taken by such fantasies is seen when, disillusioned with the mother as a source of all good things, the infant turns hopefully to the father for a better breast, which becomes equated with his penis. A bridge is thus formed at an early stage between oral and genital fantasies.

However, it must be recognized that there has always been much controversy among psychoanalysts as to the status and significance of these fantasies which her child patients revealed to Melanie Klein in their play. It has to be remembered that the children concerned were not at the time of treatment in the first year of life, and most of them were much older; yet it was the events and developments of the first year that Klein maintained were the ones of vital importance for all subsequent development; eventually, indeed, she seemed to hold that the individual's psychological fate was to a large extent decided by the age of 5 or 6 months. It was therefore possible for her critics to argue that, even admitting that the evidence showed the children did indeed have fantasies such as she attributed to them, she had failed to prove that these fantasies really originated, as she supposed, in the earliest stages of development; were they not rather fan-

tasies developed in later childhood, when the capacity for imagery and even verbalization is certainly present—fantasies that were then falsely attributed to an earlier period—fantasies *about* rather than fantasies *accompanying* the earliest experiences? These critics suggested furthermore that the “Kleinian” fantasies of the early suckling about the breast were intrinsically unlikely if not impossible, in that fantasy cannot be supposed to occur until a certain amount of postnatal development has taken place, even if it is difficult to say just when this stage is reached. Susan Isaacs (1943) in her classical paper on fantasy, followed Freud in treating fantasy as the mental representative of an instinctual drive, and she appeared to argue that since we assume the drives to be present from birth, fantasy must also begin then. However, there is an obvious logical fallacy here; we may agree that fantasy is always based ultimately on instinctual drives, but it does *not* follow from this that every time an instinctual drive is active it must be accompanied by fantasy.

NON-DIFFERENTIATION

Let us consider, then, what are some of the less equivocal things that psychoanalysis can tell us about the mental processes and development of the suckling. Observation of healthy babies leaves no doubt, I think, that the experience of successful feeding, whether from breast or bottle, is for them the acme of pleasurable, satisfying emotional experience. At the earliest stage, as Anna Freud put it, the infant loves the experience of feeding. To say that he loves the breast or bottle, let alone the feeding mother, is to make a statement that is unprovable and intrinsically unlikely, for we assume that to begin with the infant is in an undifferentiated state and only later learns to make a distinction between himself and outer objects, between me and not-me. This is the primitive stage that has been described in psychoanalytic theory as the stage of primary narcissism (before object-love exists) and primary identification (before objects are recognized as external to the self). There are theoretically comprehensible reasons for the use of these terms, but it may avoid confusion if we remember that what we have in mind here is a state of primary non-differentiation. We must, I think, assume that in spite of the great changes brought about by birth, there is a certain continuity from the prenatal to the postnatal state. The non-differentiated state would seem natural and biologically perfectly adequate to the intrauterine situation. It is also adequate to the postnatal state insofar as every need of the child is instantly met as it arises by an infallible mother. If this were possible in practice, and if we could imagine such a state of affairs continuing indefinitely, it is interesting to speculate what the end result of such a development might be—certainly not an adult human being as we understand it.

PRIMITIVE HALLUCINATION

Every infant experiences a certain amount of frustration of his instinctual demands, including, of course, the oral ones which we are considering. The prototype is the hungry baby who has to wait for a feed. Such frustrations are regarded by psychoanalysts as contributing vitally to further mental development. They open the way in two different directions. Freud (1900) supposed that the infant's primary response when the feed fails to materialize is to hallucinate the feeding experience, that is, to fall back on a hallucinatory memory of previous satisfying experience. This may fairly be regarded as the most primitive form or forerunner of fantasy, and one in which the close relation to an instinctual drive, as well as to the dominance of the pleasure principle is unmistakable. From this simple beginning one may well imagine that the vast world of subsequent, more sophisticated fantasy takes its origin.

OMNIPOTENCE AND MAGIC

Such primitive hallucination of the desired but missing experience gives momentary relief, but it brings about no permanent alteration in the situation; that requires some intervention from outside on the part of the mother figure. This intervention, however, may well be initiated by the infant through his cries and other psychomotor manifestations of distress. We speak of an initial stage of unconditional omnipotence, passing into one of conditional omnipotence (the terms refer, of course, to subjective experience). The "condition" is the carrying out of some activity, such as crying, whose mode of action, by calling the mother's attention to the child's need, is of course not apprehended by him, so that the happy outcome can be attributed by the infant only to some "magical" efficacy of his activities—thus he still retains the illusion of omnipotence.

RECOGNITION OF EXTERNAL OBJECTS

These manoeuvres, however, have their limitations, and every infant is inevitably exposed sooner or later to experiences of frustration which they cannot immediately resolve. Such experiences lead to a gradual enforced recognition of the distinction between two worlds, that of the me, and that of the not-me on which the me depends for many of its satisfactions. Thus the first glimmerings of an awareness of an external world of reality appear in relation to unpleasant experiences of non-satisfaction, so that there is a deeply based tendency to feel the outer world as something hostile and dangerous. Its capacity to afford satisfactions is at first ignored, for when it does this it is not distinguished as something external, but conceived as part of the omnipotent self. What we are considering now is the first develop-

ment of the infant's relationship to objects, and at the same time of the "reality principle" gradually modifying, though never supplanting, the original "pleasure principle".

It is important to make a clear distinction between the technical and the everyday sense of the word "object". When we speak of an infant's object-relationship we refer to his psychological relationship to something which he conceives of (however dimly) as not-himself, something-out-there. Thus when an infant is at the breast he may or may not have an object-relationship to the breast. Hence, the fact that in a commonsense way we may say that "obviously" the breast is the suckling's first object does *not* justify us in saying that "objects" in the technical sense are there from the beginning—rather are they things that have to be discovered after a period of non-recognition. Nevertheless, the breast or bottle is no doubt usually the first "object" also in the psychoanalytic sense, because experiences of frustration are commonly first encountered in the setting of the feeding situation, forcing the recognition that there is something outside the control of the me that the me wants, namely the object of an instinctual drive. This primitive object-relationship, often described as relationship to a part-object, develops considerably later into the formation of relationships to whole persons as such, first the mother figure, then other people.

AMBIVALENCE

It will be apparent from what has been said that if object-relationships are developed in this painful way, the primitive attitude of the infant to his new-found objects is bound to be a very mixed or ambivalent one. This is expressed by many child analysts, following the lead of Klein, by speaking of a good breast and a bad breast, a good and a bad mother, according as they are satisfying or frustrating. Insofar as this division or split is made, it means that the infant does not recognize that he is dealing with one and the same breast or mother, treating him differently at different times; and the ability to make this synthesis is regarded as coming only later and signifying a vitally important turning-point in development, a point when the child begins to come to terms with the fact that he can love and hate the same thing, so that he begins to appreciate the danger that he may destroy what he loves by his own aggressive activity or fantasy, and may feel that he has already done so; this in turn leads to efforts to make good the damaged object by constructive, reparative activities. This is the essence of what Klein (1934) called the "depressive position"; its attainment was to be regarded as evidence of a great advance in maturity as compared with the more primitive paranoid and schizoid positions. A discussion of this theory, perhaps the most central in the Kleinian system, would necessitate, amongst other things, a full account of the mental mechanisms of projection and introjection and of the concept of internal objects; such a theoretical discussion is therefore outside the scope of this chapter.

It is important to grasp the fact that we are now considering not the finding of an object, but its loss, and hence the experiences of grief and mourning. The period of development we are dealing with is closely connected with that of weaning, that is, with the loss of the first object, the breast or bottle, and references to weaning will often be found in psycho-analytic writings. However, just as mothering is much more than breast feeding so weaning, in this wide analytic sense, is much more than the loss of the breast or bottle—it is the loss of a whole way of life, a banishment from Eden, a departure in the spirit of *partir c'est un peu mourir*. And just as with Eden, the bitterest part of it all is the feeling of being responsible for the loss through one's own destructive greed.

The child who is losing what he has come to value so highly and to regard as his own exclusive prerogative—the position of His Majesty the Baby—is subject also to the pangs of jealousy, and this is an important component in the sibling rivalry which is likely to develop later if there is a subsequent baby; indeed the child who is being weaned is very apt to feel that someone else, maybe the father, is benefiting from his deprivation. Many other factors are commonly involved in these intense feelings of family jealousy, as we shall see for example in connection with the oedipal period.

INTROJECTION AND PROJECTION

In the earlier stages of development psychic life is much under the sway of the pleasure-pain principle; in accordance with this, whatever is frustrating and painful is not only regarded as bad, but also as being outside the self (i.e. it may be projected), whereas pleasure-giving objects or experiences are felt as part of the self, being introjected.

These primitive psychological mechanisms of introjection and projection are modelled on the physiological functions of ingestion and excretion. We have considered some of the psychological concomitants of the nutritional process. In later infancy the processes of excretion come to have increasing emotional significance for the child; there are various reasons for this. First, there are the pleasurable sensations (anal and urethral erotism) associated with the functions. Secondly, much aggressive fantasy goes along with these processes, so that the excretory products may be regarded not only as precious gifts to the mother, but as destructive, poisonous weapons, bad parts of the self which are got rid of and forced into someone else. Thirdly, the excreta are something intermediate between self and object—beginning as something internal, they become something external, and serve as a sample of the mysterious inside of the body and of the fantasied inner objects contained there. Another vitally important point is that here too, as in the feeding situation, the child is involved in an interaction with the mother who attends to these functions by way of changing napkins, etc., and at a certain stage intervenes with some form of toilet training, thus

invading an area where up to then the child has been his own master. Accordingly, this may become a battle ground between a self-willed child and his mother, and in this manner the foundations may be laid for later difficulties ("anal" traits, obsessional character, etc.).

PREGENITAL SEXUALITY

One of Freud's fundamental contributions to developmental psychology was his discovery and insistence upon the normal sexuality of early childhood (Freud, 1905). Before him it was commonly supposed that sexual feelings, fantasies and activities began with puberty, and that cases where they manifested themselves earlier were pathological, "degenerate", etc. Now it is true that a large part of the "infantile sexuality" of which Freud spoke consists of the kind of psychic activities we have been considering, i.e. associated with oral, anal and urethral erotism, and that these activities are not universally acknowledged to be truly sexual. This objection, which cannot be successfully sustained even in relation to pregenital activities, certainly cannot be raised against the genital aspects of infantile sexuality.

Oedipus Complex

These genital phenomena often manifest themselves at a much earlier age, but usually become prominent at around two or three years of age and continue so till about six (there are, of course, great individual variations). This stage of psychosexual development is characterized by erections in the boy and genital masturbation in both sexes, though it is more often noticed in boys: and in a period of very active curiosity and "sexual research". The two outstanding intellectual problems relate to the difference between the sexes, and to the origin of babies. At the centre of interest is the relation between the parents, the mystery of their sexual life ("primal scene" fantasies, which occur even where there seems to have been no possibility of witnessing parental intercourse and generally take a sado-masochistic form). There is a strong feeling of deprivation and resentment at being excluded from all this, with the wishful fantasy of taking the place and getting rid of one of the parents and "marrying" the other and so producing a baby. Such fantasies are inevitably doomed to bitter disappointment. Sometimes this is brought home to the child very painfully when the parents give him the most cogent proof of their "unfaithfulness" to him by producing another baby themselves. In such cases the older child may not show much of the overt sibling rivalry which is commonly seen, but may tend rather to "adopt" the new baby as his own and to turn his resentment against one or other of the parents.

What we have been discussing constitutes one or other variety of the oedipus complex, an early flowering of genital sexuality and another of

Freud's fundamental discoveries. It will be noted that in these oedipal fantasies the child may choose either parent for his partner, so that it may be a heterosexual or a homosexual choice, and indeed a child often vacillates between one and the other. Normal development involves an ultimate heterosexual choice, and the relationship with the parent of the same sex results in an identification with him or her. In the case of a girl, however, it is more difficult and often takes longer for the heterosexual choice to be made, doubtless because in her case, no less than in the boy's, the mother was the original object of love and the most important personal object.

Conflict

Before discussing more fully the oedipal phase of development and what follows it we must take account of certain phenomena such as mental conflict and anxiety. Intrapsychic conflict is one of the most fundamental of Freud's concepts, and it must not be regarded as necessarily pathological. Indeed his bipolar view of instinctual drives, first seen as ego instincts versus sexual instincts, finally as life instinct versus death instinct, implies that conflict is inherent in life. The existence side by side of incompatible impulses and tendencies is characteristic of primitive states and of what Freud described as the primary process which dominates unconscious mental functioning; and perhaps the term "conflict" first begins to have real psychological meaning after a certain amount of mental organization has taken place. It is clearly an essential element in Klein's "depressive position", where the conflict between loving and destructive impulses directed towards the same object is felt acutely by the child; attempts at reparation aim to resolve the conflict. Here the conflict is one between opposing drives. In other cases it may be more usefully conceptualized as conflict between different parts of the mind, e.g. between the instinctual part (the id) and the part that takes cognizance also of external reality (the ego).

ANXIETY

Anxiety is likewise a basic concept. It is, of course, closely related to fear, but is a wider, more diffuse concept. Fear is the emotion felt in the presence of an obviously threatening object or situation and is associated with the impulse to flee. In the case of anxiety there may be no obviously frightening situation, and the child may not know what he is afraid of, or the object of his fear may not appear to justify it. Freud's (1926) later view of the problem of anxiety was, in essence, as follows. The young child automatically develops anxiety when exposed to what Freud called a "traumatic situation". By this term he meant a situation of overwhelming stimulation which the infant is unable to do anything about, so that he is helplessly overwhelmed by it. The paradigm would be an abandoned,

hungry baby with no one to tend it. As ego development proceeds, with increasing experience and maturation, a mechanism is evolved whereby the ego, when it perceives signs suggesting that a traumatic situation is *threatening* to arise, mobilizes in advance some of the emotional reaction appropriate to an actual traumatic situation (i.e. anxiety feelings); this is then used, as it were, as a threat to induce the instinctual id side to give up its dangerous impulses and so avoid the full traumatic situation. Anxiety produced in this way was called by Freud "signal anxiety".

When the child has developed sufficiently to distinguish the mother figure as a person outside himself, on whom he depends for the satisfaction of his needs (including not only physical needs but also the very important emotional ones) he will soon learn that her presence is necessary in order to avoid traumatic situations. His "signal anxiety" at this stage accordingly manifests itself largely as "separation anxiety" and occurs whenever he cannot be assured of her presence. Somewhat later he learns that not only her presence but also her goodwill is necessary to him, and his anxiety tends to show itself as fear of loss of her love. Later still, these anxieties develop further into various forms of social anxiety; and into the need to preserve good relations with those parts of himself (technically known as his superego) which have identified themselves with the loving and authoritative aspects of his parents. This last and most sophisticated form of anxiety which arises when the child is at odds with his internalized parents or conscience is what we know as feelings of guilt.

SUPEREGO DEVELOPMENT AND CASTRATION COMPLEX

The tendency to take over parental injunctions and make them one's own certainly begins quite early, based as it is on the primitive mechanism of introjection; it is perhaps first clearly obvious in connection with toilet training—this has been referred to as "sphincter morality". However, the full development of superego functioning is achieved later, and is closely connected with the oedipus complex and with the severe conflicts and anxieties which characterize it. The picture is clearer in the boy, whose sexual feelings have by this time become centred in the genital erotogenic zone, i.e. in the penis. However vague and incomplete may be his notions of what constitutes adult sexual activity, his own genital sensations give him an unmistakable clue to the essential role of the penis. When his oedipal strivings meet with inevitable difficulties, frustrations and prohibitions, the last commonly directed against his masturbatory activities, it is therefore not surprising that he develops anxiety and feels that the central instrument of his feelings and fantasies is threatened. Thus he becomes exposed to castration anxiety, which is generally the characteristic anxiety of the male. Many other elements contribute to it, notably the tendency to submit passively to the father in a feminine way, and to identify with the

mother, which constitutes an *internal* castration threat; but a full discussion of castration anxiety is clearly impossible here. When such problems prove intractable, a foundation is laid for later pathological developments such as perversion and neurosis.

Latency

Castration anxiety is of the utmost importance in initiating the next stage in the boy's development. In order to save the threatened penis, he gives up his oedipal demands, and instead identifies with his father, develops a fully formed superego, and enters upon the latency period, which will continue until the onset of puberty; it is distinguished by a lessening in the press of the instinctual drives, both sexual and aggressive, and tends to be dominated by the various ways in which the maturing ego, influenced by the superego, defends itself against the instincts and keeps them in check (see Anna Freud, 1937). This latency period, beginning about the sixth year, is the period of maximum tractability and educatability, a fact taken advantage of by most educational systems. It is the time when the child's interests and attachments grow out from the family group to persons outside the family; parents are supplemented by teachers, siblings by schoolfellows and friends. The latency period is accordingly of great importance in converting the child into a social being rather than merely a member of a family group. Many valuable lessons not in the school curriculum are learned by a child from contact with his peers, and a maturer, less egocentric concept of the self gradually emerges. All this may be expressed in terms of the development and strengthening of the ego—usually an ego that has accepted a large measure of conformity both with the principles of conduct enjoined by the adults and with the *mores* of peer groups.

OEDIPUS COMPLEX IN THE GIRL

We must now consider the development of the girl—does she go through an oedipus complex strictly analogous to the boy's? It is clear that even if the broad outline is similar there must be very important differences. First, she arrives at the genital stage following a primary attachment to a mother-figure, just like the boy, and therefore quite opposite to him in another sense, for this means that her first, pregenital love object was of her own sex, whereas the boy's was of the opposite sex. And secondly, although her genital sensations may well be felt mainly in the female analogue of the penis, the clitoris, rather in the vaginal region, she has no visible organ, obvious erections, etc. around which to develop the type of fantasies and anxieties which we have seen to be so characteristic of the boy. She may become just as much engrossed as the oedipal boy in the mysteries of sex, the origin of babies, the sexual differences, etc., and is certainly at least as

apt to cherish the ambition to have babies of her own with the parent of her choice; but insofar as the penis becomes a central theme for her the essential point is, not that she feels threatened with its loss like the boy, but that she feels deprived of it, cheated of something valuable. The relation to the mother, which tends to be close and persistent, is impaired by this feeling of deprivation, for she regularly blames her mother for having failed to equip her properly in this respect. The little girl, therefore, may have a very lively castration *complex*, in the sense of feeling she *has been* castrated, but she does not suffer from castration anxiety in the same sense as the boy. This castration complex of the girl no doubt depends for its existence on her inability to be assured of her completeness *as a female*—an assurance which is rarely completely attained before the actual proof when she produces a live healthy baby in adult womanhood. Were it not for this uncertainty about herself she would not find it so necessary to compete with boys on *their* ground rather than her own.

The sense of grievance against her mother, which goes back at least to the time of weaning, and the feeling of incompleteness impels the little girl towards her father, so that finally, although by a different route, she develops an oedipus complex analogous to the boy's. Subsequent events, i.e. abandonment of oedipal strivings, development of superego, and passage into the latency period, conform to the same general pattern as in the boy, though here again one must not expect complete parallelism.

DEVELOPMENT OF CHARACTER

The term "character" is generally used by psychoanalysts in a rather wide sense, sometimes almost as the equivalent of "personality." It refers to modes of existence, of acting and reacting, of feeling and thinking, which are characteristic and habitual in a given individual. Such relatively unchanging qualities imply some stable underlying mental "structure." The ability to develop a structure of this kind is one of the qualities we attribute to the ego; hence we may say that character is one of the products of ego development. It must be borne in mind that much ego activity takes place unconsciously; and this is true also of many of the ways in which a person's character manifests itself.

Although the character is so closely bound up with ego development, the kind of character an individual has depends to a very important extent on his innate instinctual endowment, perhaps largely on the relative strengths of its various components. The character may be looked upon as embodying the habitual ways in which the individual learns to handle on the one hand these instinctual forces, on the other hand the external environment, especially the human one, which he comes gradually to understand. Much of this development can be regarded as reflecting a progressively improving capacity to reconcile these often conflicting demands, representing infantile

wishes on the one hand, reality and the standards of his parents and educators on the other. Faced with this problem, the ego has recourse to a number of defence mechanisms. Two of these are particularly relevant to character formation.

The first is introjection combined with identification. This means that certain qualities or aspects of another person are, as it were, taken inside the self and then regarded as qualities of, or a part of, the self; but much more than this, an actual modification of the ego comes about in this way, in that the ego models itself in these respects on the other person. Many of the resemblances in character between children and their parents undoubtedly come about thus rather than in any truly hereditary way.

The second mental mechanism which has a special relation to character is that known as reaction-formation. This refers to the development of characterological qualities which are the direct opposite of the type of instinctual impulse which the individual apprehends as particularly dangerous and in need of special control. Qualities of character developed according to this pattern are therefore closely dependent on underlying id or instinctual qualities; but the actual character manifestations will be the antithesis of those underlying qualities. Thus, a strong innate aggressive tendency may appear in the form of a demure, inoffensive exterior; and an exhibitionistic drive to self-display may lead by reaction-formation to a self-effacing, modest character. A number of special character types have been described by Freud and other analysts; the best known of these is the anal or obsessional character, based on a reaction against the anal-sadistic components of infantile sexuality. The unmodified impulses show themselves in delight in dirt, disorder, destruction and the infliction of pain and oppression on the sexual object. After reaction-formation the resultant character traits include great orderliness and love of cleanliness, an avoidance or horror of overtly aggressive behaviour, much carefulness about money and other possessions, and other signs of defence against the primary anal tendencies, even though these may show through in various characteristics such as obstinacy and self-will.

Much building up of character takes place during the latency period, as is natural in view of the ego growth and defensive activities which are typical of this phase. The character of the latency child is still, of course, more or less childish in nature, not yet adequate to adult life, too dependent on its immediate origins such as identifications and reaction-formations. As we shall see, at puberty the entire arrangements laboriously built up during latency are threatened with upheaval; the ultimate adult character normally emerges gradually as the stresses of puberty are passed and maturity is reached; but in less fortunate cases this development may miscarry and the child-like character may be retained into adult years, or, at the opposite extreme, it may be too violently repudiated, and this may lead to anti-social developments.

PUBERTY

The end of childhood is announced by the striking changes and developments associated with puberty and adolescence. As we have seen, latency is a period of relative calm, stability and equilibrium, during which fairly competent ego functions have been built up which are generally fully capable of holding the instinctual impulses in check and maintaining a degree of control such that there is not too much conflict either with external authority or with superego standards (i.e. internalized authority). A balance of forces has been struck.

Now what we refer to as instinctual impulses or drives, although conceived of psychologically, are unmistakably closely related to biological processes. They were defined by Freud (1915) as "the psychological representative of the stimuli originating from within the organism and reaching the mind, as a measure of the demand made upon the mind for work in consequence of its connection with the body."

Puberty, and the period leading up to it, are as we know characterized by marked changes in the endocrine balance; there is good biological evidence (Talbot, 1952) that during the latency period the development of the organs producing sexual hormones is actively inhibited by brain mechanisms, and that the onset of puberty comes about as a result of the removal of this inhibition—an interesting corroboration of Freud's concept of a latency period. The psychological effect is to upset drastically the balance of forces achieved during latency by greatly increasing the force of the instinctual drives—and, whatever may be the explanation, there is no doubt that aggressive drives are strengthened as well as sexual (i.e. libidinal) ones.

A situation is thus brought about which has features in common with the earlier one *before* the onset of latency, i.e. with the period of the oedipus complex; for now as then a relatively weak ego finds itself trying to cope with powerful instinctual forces that threaten to overwhelm it. In the early period this relative weakness is due to the ego's immaturity and inexperience; at puberty the cause is different, namely the sudden accession of strength on the part of the instinctual impulses. Accordingly we find at puberty a kind of recapitulation of the oedipal struggle; but of course it is by no means identical and indeed in many ways is vastly different. The differences are mainly due to the much greater maturity and subtlety of the ego in the pubertal child. This results in a mighty struggle between the two sides and the mobilization by the ego of all the techniques of defence it has learned and practised during the latency period. Sometimes one side is in the ascendant, sometimes the other as the to-and-fro battle proceeds; hence the astonishing contrasts and contradictions which are so characteristic of adolescence and produce so strong an impression of instability as to lead sometimes to a mistaken suspicion of a schizophrenic illness. Every kind of instinctual impulse is liable to be activated, so that pregenital types

of activity may appear, such as greedy eating or a falling back into dirty personal habits, as well as genital activities, which may take overt heterosexual or homosexual forms, but are often expressed chiefly in masturbatory fantasies or acts; aggressive impulses, however, are also greatly strengthened at this time. Simultaneously massive defensive efforts are put forth by the ego, so that the manifest behaviour at any given time may be the exact opposite—hence the characteristic asceticism, cleanliness and perfectionism, idealism and tendency to stress intellectual interests.

Self-awareness and sensitiveness to the attitudes of others go along with this ego development, of which an important aspect is the search for an identity. This is often closely related to the problem with whom to identify oneself, and with a tendency to repudiate the parents and other members of the family (and the kind of values they stand for), not merely as sexual objects (the incest barrier) but also as admirable figures suitable for identification. The objects actually selected may often at first be fairly obvious parent substitutes—older persons who are idealized and loved in the passionate way unkindly referred to as “calf love.” In other cases, however, the adolescent turns rather to groups or individuals of his own age with equally passionate attachment.

Puberty, of course, is the beginning and so only a part of psychological adolescence, and much further development must occur before full maturity is attained; but it seems reasonable to bring to an end at this point our discussion of child development. Adolescence, the end of childhood, is a very large subject; readers who wish to pursue further the psychoanalytic study of adolescence are referred to the third of Freud's (1905) “Three Essays on the Theory of Sexuality”, and to various writings on the subject by Anna Freud (1937, 1958).

REFERENCES

- BOWLBY, J. (1958) The nature of the child's tie to his mother, *Int. J. Psycho-Anal.* **39**, 350–373.
- BREUER, J., and FREUD, S. (1895) Studies on Hysteria. *Standard edition of complete psychological works of Sigmund Freud* (referred to henceforward as *S.E.*) vol. 2. London, Hogarth.
- FREUD, A. (1937) *The Ego and the Mechanisms of Defence*. London, Hogarth.
- FREUD, A. (1958) Adolescence. *Psychoanalytic Study of the Child*, vol. 13, 255–278. London, Imago Publishing Co.
- FREUD, S. (1900) The interpretation of dreams. *S.E.* vol. 5, 565.
- FREUD, S. (1905) Three essays on the theory of sexuality. *S.E.* vol. 7.
- FREUD, S. (1915) Instincts and their vicissitudes. *S.E.* vol. 14, 122.
- FREUD, S. (1926) Inhibitions, symptoms and anxiety. *S.E.* vol. 20.
- ISAACS, S. (1943) The Nature and Function of Phantasy. In *Developments in Psycho-Analysis*. 1953, London, Hogarth.
- KLEIN, M. (1932) *The Psycho-Analysis of Children*. London, Hogarth.
- KLEIN, M. (1934) The Psychogenesis of Manic-Depressive States. In *Contributions to Psycho-Analysis*. 1948, London, Hogarth.

- KLEIN, M. (1948) *Contributions to Psycho-Analysis*. London, Hogarth.
- MIDDLEMORE, M. (1941) *The Nursing Couple*. London, Hamish Hamilton.
- RANK, O. (1934) The trauma of birth and its importance for psycho-analytic therapy. *Psychoanal. Rev.* 9, 241-245.
- TALBOT, N. B. *et al.* (1952) *Functional Endocrinology*, p. 303. Cambridge, Mass. Harvard University Press.
- WINNICOTT, D. W. (1958) *Collected Papers*. London, Tavistock Publications.

CHAPTER 6

On Observing Children

by E. JAMES ANTHONY

OBSERVING children is almost our main business in child psychiatry. We observe them diagnostically and therapeutically, we observe them at different stages of development, we observe them directly as we interview them or play with them, or indirectly through the eyes of their parents, and we observe them individually and in groups. After several years of daily observation, we accumulate a vast store of observational knowledge which we treasure as clinical experience and which, in some undefinable way, establishes our worth as clinicians. Most of this data lies about in the repository of our minds gathering dust, unanalyzed and unanalyzable, but, every now and then, under the stimulus of a fresh observation, some form of sorting occurs resulting in the mysterious emergence of a clinical intuition. This is where most of us are content to leave the matter. The word "observation" has a matter-of-fact quality to it that inveigles our common sense into accepting it without further question at its face value as one of the give-ins of life. For everyday purposes, this raises no problem, but when we need to put our observations to more disciplined use, as in a scientific inquiry, it behoves us to consider this "instrument" with more circumspection. On so doing, the process loses its apparent simplicity and undergoes a surprising increase in complexity. This is because we take the everyday, bread-and-butter world very much for granted and, with almost primitive obtuseness, disregard the fact that the outside world exists in our minds and that our minds have functions other than storing data. The mind, therefore, adds complexity to the observation.

As one ascends the scale from the physical to the psychological, there is likewise an increase in complexity. The first transition from inorganic to organic makes observation more difficult because of the interdependent parts that go to make up an organism. The second transition from organic to psychological adds to the problem since many of the processes become inaccessible to direct observation. Such factors as motivation, feelings and cognitions can only be observed inferentially.

It might be supposed that the child with its apparent psychological simplicity would be easier to observe, but this is far from being the case.

The lack of continuity, consistency and patterning in behavior and the amorphous poorly-developed nature of the affects and cognitions tends to render the action less intelligible, and when immaturity is coupled with emotional disturbance, the distortions are enhanced. Speaking from experience, Beller has this to say: "One can easily understand why the bulk of research employing direct observation and objective measurement has been carried out with normal children and has been concentrated on nonmotivational and nonaffective aspects of overt behavior" (Beller, 1959).

The complexity of the observational field when both direct and indirect sources of observational data are considered (see Figure 1) would seem to pose too many problems, and it is perhaps a good thing that perception is so automatic and immediate or else we might have given up observing, at least in the psychological field.

The first great discipline for the scientific observer is to curb his tendency to see more than is there; that is, to add his inferences. This makes for richer observations and a richer observational experience, but it brings in the human mind with its grand array of distorting mechanisms. The problem has confronted us ever since science first began to take a hand in human affairs, and almost every generation has had to face the same set of dilemmas. Shakow (1959) has speculated on the cross-roads of decision as they occurred in history. "I have speculated about how much further advanced psychology as a science might now be if it had in the latter part of the last century permitted itself to be influenced primarily by the French hospital tradition of Charcot rather than by the physical-physiological laboratory tradition of Helmholtz. My thought was that because of the choice which academic psychology made in favor of the latter, the area of personality was passed over and the observational naturalistic stage of the development of science was skipped. This resulted in a predominant—and I think premature—emphasis on the experimental, the segmental, the rigorous and the molecular, with a parallel neglect of the molar and the less rigorously definable but more "meaningful" behavior. It is of interest that Freud was faced with essentially the same choice, between the Helmholtz school on the one hand, with which he was identified until approximately 1885, and the Charcot influence on the other. His fellow-ship at the Salpêtrière in 1885–1886 in considerable part led to his preference for the latter—with such momentous gains for the field of psychology."

Here we have the first of a series of dilemmas that have confronted the observer. It can be stated as follows: How can one observe objectively without losing the richness of subjective observations, and, *vice versa*, how can one observe subjectively and maintain a standard of scientific rigor? We can call this the subjectivity-objectivity dilemma.

The second dilemma, as stated by Shakow (1959) runs as follows: How can one study human psychological phenomenon scientifically—with a minimum of distortion—and ethically—with a minimum of inevitable tres-

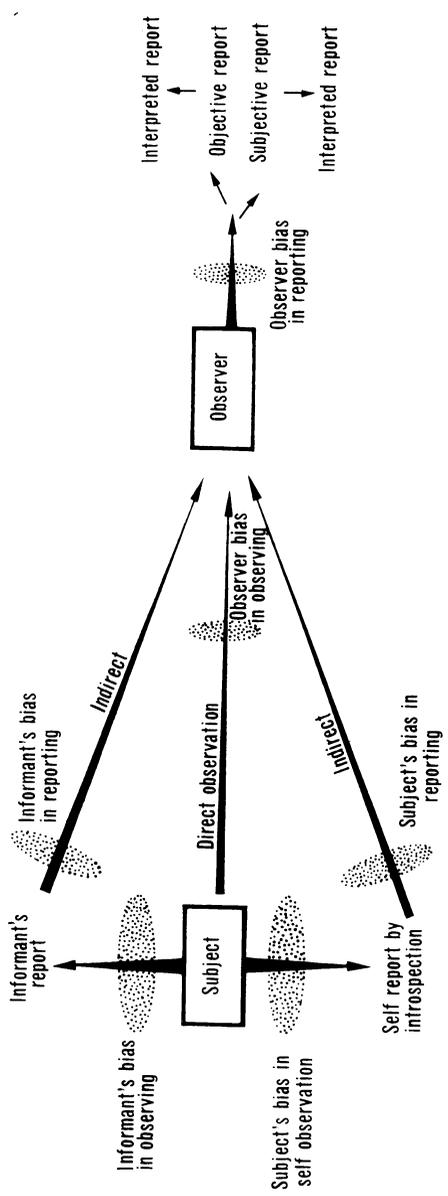


FIG. 1. Direct and Indirect Sources of Observational Data

pass? There are two parts to this dilemma as stated. The first has to do with distortion which results from "projection" and can be included under the general problem of what William James called "the psychologist's fallacy" (James, 1890), that is, the error of method and interpretation in which the psychologist confuses his own knowledge about the process with what the subject directly experiences in the process. Shakow regards this as a peculiar hazard of the psychologist-observer. The second aspect concerns observation as an invasion of privacy. One has to observe in order to help, but at what point do the rights of the individual intervene to limit observation. Goodrich (1959) has rightly pointed out that in order to understand the observational process, one has to study the significance of the observer for the observed and the way in which he is perceived. Depending on the situation, on the way in which he blends with the environment or the degree to which he is accepted, the observer will be regarded at times as an intruder and at times as a threat. He may become a scapegoat for the reactions of the individual or the group when regarded negatively but he may also be perceived as an ally. The implicit voyeurism involved may stimulate the observed one to "show off". Involved in the ethical considerations, is the question of the hidden observer behind a one-way screen or mirror. It is now generally agreed that the scientific gain from having the observer secreted without the knowledge of the observed is comparatively slight compared with the ethical loss incurred from the invasion of privacy. Children, in particular, are quite unable to maintain ego-alien modes of behavior for any length of time even when informed that they are under continuous observation by an invisible observer.

The third dilemma in observation has been termed the anthropological dilemma and can be expressed thus: How can man as a person make man as a person the object of an empirical inquiry—how can he describe a human condition with empirical exactness when he himself is involved in the condition? (Strasser, 1963). As a global statement, this has philosophical importance, but it also carries a wealth of meaning for the local situation of observation. How can a participant-observer be both a participant and an observer? To what extent does his involvement in the situation with the observed person limit the accuracy of his observations? The dilemma is a real one in another sense. In the interaction between observer and observed, the participant-observer has immediate cues arising from the effect of his participation that are denied to the non-participant observer. He would have his own reactions to fall back on inasmuch as the observed individual made him feel accepted or cautious or protective or angry.

The fourth and last dilemma has to do with the study of the observational process: To what extent can one observe the observer without jeopardizing his position by transforming him from an observer into an object of observation? The implication here is that the instant the observer knows himself to be observed, he ceases to become purely and simply an observer and

“degenerates” into an object of observation. The word “degenerates” is used with reference to a famous essay by Sartre (1950) entitled *The Dialectics of the Stare*. Sartre discusses the situation of a man who is caught staring through a keyhole into a room and who is thereby transformed from observer to observed. According to Sartre he “degenerates” into an object and in so doing his whole world is turned upside down. There is an implicit assumption here that the observer is in a superior position to the one observed and that the change of role involves a reduction in status.

The dilemmas, in their several ways, all point to the inherent difficulty of keeping subject and object and the subjective and objective comfortably within the same continuum of experience. Some of the antitheses may be resolved by considering the purpose of the observation whether this is directed towards research, clinical assistance or training in observation. Basically, one has to accept the fact that the viewpoint will alter with the circumstance, a point that can be summed up in the truism that it takes all sorts of observations to make a world and that while we should strive towards a common perspective for the sake of synthesizing our different experiences, we should not be too disappointed if, in the ultimate analysis, “we see things differently”. Loomis and Meyer (1959) make this a point of departure in their observations: “The scientist, the artist, and the ordinary human being are each observers of their own worlds. Even when they observe the same world, it appears differently, depending upon the point of view of the beholder. The observation of children continues to be conducted on numerous levels: from the causal to the romantic to the superscientific. Each approach has something to offer; none is comprehensive—perhaps none ever will be.”

PROBLEMS OF OBSERVATIONAL RESEARCH

The observational techniques for collecting data require to be as carefully delineated as any instrumental method used in research and should logically reflect the circumstances of the study, the sample involved, the theoretical context and the goals of the investigators.

Several preliminary decisions must be reached for the subsequent flow of observations to proceed systematically.

The first decision we have to make is whether we undertake our own observations or accept those offered by “reliable informants”. The problem of direct versus indirect observation is a crucial one for researchers in the behavioral sciences who, for want of time and personnel, often have to fall back on secondhand observational data. Among the commonest of the indirect sources of observation in child psychiatry are the parents despite reflections on their unreliable memories, their limited skills in reporting and their liability to distort as a result of emotional pressures or cultural expectations. If such criticisms were demonstrated to have much truth, it could

have embarrassing repercussions on much of our clinical practice and research since we have come to depend on these long-term, on-the-spot, living-in observers with their twenty-four hour a day observational schedules.

Several attempts have been made to rehabilitate the reputation of the parent as an observer. In the Thomas Study (1963), agreement between direct observations and parental reports was reliable to between the 0.05 and the 0.01 level of confidence, and in the investigation carried out by Miller (1964) based on a "blind" Q-sort of eighty statements regarding manifest behavior, half healthy and half unhealthy in their connotation, by five types of observers—fathers, mothers, teachers, psychologists and psychiatrists, it was found that the parents were the only judgemental pairs who showed consistent agreement. The clinicians showed least consensus.

TABLE 1. AVERAGE CORRELATION AMONG TYPES OF OBSERVERS FOR REFERRED, NONREFERRED, AND TOTAL GROUP OF 36 CHILDREN
(Adapted from Miller, 1964)

Observers	Referred	Nonreferred	Total
1. Parent-parent	0.53	0.68	0.60
2. Parents-clinicians	0.21	0.51	0.37
3. Parents-teachers	0.26	0.43	0.35
4. Clinician-clinician	0.26	0.43	0.35
5. Clinicians-teachers	0.12	0.36	0.24
Mean	0.28	0.49	0.39

The data indicates that the interjudge Q-sort agreement on the manifest personality of the children is low (a correlation of 0.28 between any two sorts is significant at the 0.01 level and 37 per cent of the judgements fell below this level). The intriguing finding in this study is the difference between the observation of referred (that is, the clinic child) and the nonreferred, suggesting that the type of child determines the reliability of the observation. The fact that the healthy child showed a higher degree of agreement among judges might mean that he tends on the whole to behave more consistently or that he was more expressive and communicative, giving the judges the maximum information. To test this latter hypothesis, the children were rated on an introversion-extroversion scale and a high correlation between the scale and interjudge agreement was found indicating that when judges lacked behavioral information, they relied more heavily on inference. The difference could also relate to the degree of disturbance in the referred children. In the Midtown Manhattan Study (Srole, 1962), two psychiatrists, rating descriptions by social workers, were able to agree on the behavior of persons who were markedly disturbed or markedly healthy, but could not agree on pathology in the mild and moderate disturbance levels.

Miller thoughtfully concluded that an observation could not be communicated with any confidence beyond the person making the observation, and that if this conclusion was at all valid, it also meant that our practices were built on the existence of phenomena that were either defined as so ambiguous as to limit communication between observers or else were so illusive as to appear and disappear without predictable regularity.

A further drawback to the indirect observation lies in the fact that the observational report generally follows some time after the actual observation. The reliability of the report has been shown to bear a rough inverse relationship to the passage of time involved.

It has also been found that parents tend to "specialize" in certain types of observation and to be singularly blind to others (Wenar). The "scotomata" (as demonstrated by a "re-test") on historical data involved certain emotional areas around which the parents felt uncomfortable.

On the other hand, there are many obvious advantages to making direct observations for ourselves rather than relying on poorly-contrived techniques or unscientific witnesses. The "observation of an observation" necessarily compounds an already elaborate system of distortions and biases. Nevertheless, direct observations also have certain disadvantages to be reckoned with. They are necessarily limited in time, which, at once, raises the question as to the extent to which the observations are representative. Furthermore, the presence of the observer, even when rigorously non-participant, may lead to some degree of self-conscious inhibition and deviation from normal behavior, although this may be expected to correct itself over a period of time. In addition, important but infrequent events may fail to occur during a particular span of observation and therefore find themselves excluded from the list of significant variables influencing behavior.

The advantages, however, of direct observation are great enough to make it the preferred method whenever it is available. Moss (1964) sums up its usefulness in the following illustration. The new mother remarks, as she places her two-month baby in the tub containing two inches of water, that he is "terribly frightened of water". The baby remains placid throughout the bath, but the mother is tense, awkward and apprehensive. If the situation had not been observed directly, the observational data gained from the mother would have been erroneous.

In place of the unreliable human informant, the investigator may install a tape recorder, but unlike the situation with the human witness where the problem is one of selectivity, the trouble with the machine is the absolute lack of selectivity and the massive distortion created through channeling everything through one perceptual modality. With children, it is especially important to have both visual and auditory observations simultaneously. Prall (1959) cites the example of a tape-recorded session in which one can hear a child say, "I love my little brother." As he makes the statement, he

may be ringing the neck of a toy doll so that his body language may indicate that the statement has an entirely different meaning which goes unrecorded.

Having made the case for direct observation, we can now turn our attention to the research requirements involved in observation. First and foremost, it is important that the members of the observational team share a common theoretical frame of reference and, moreover, that the focus of observation, what they are looking for, is well understood and clearly defined. Next, the impossibility of observing the entire universe leads inevitably to a sampling of experience, either of behavior or of situations or of persons, or of time or of the different viewpoints of multiple observers. In this respect, the situation and its special nature has not received the careful consideration it deserves. Brunswik (1956) rightly pointed out "the limited generalizability of experimental studies because of their failure to give as much attention to the sampling of situations as they did to the sampling of persons". Other important factors have to do with the relationship of the observer to the observational situation, his placement in the field and his degree of participation (all of which involves the observer's role), the degree of structuring of the observational situation, and, finally, the observer's task in recording and reporting what he observes. We will consider these in turn.

THE OBSERVATIONAL SITUATION

In making direct observations, one has the choice of making them under naturalistic or controlled conditions. Naturalistic observations, by definition, lack standardization. The subjects may be observed in the familiar setting of their homes where the conditions of space, light, temperature, noise, etc., may vary considerably from one setting to the next. Since physical factors of this kind are often important if poorly recognized determinants of behavior, it becomes difficult to make valid comparisons. However, the lack of standardization, together with the real-life situations, introduce a variety of factors that enhance the richness, the complexity and the meaningfulness of the data but diminish the clarity of the findings, especially when compared with the carefully-controlled experimental situations in which only one or more variables are allowed to vary whilst the remainder are held constant.

Whatever the situation, a certain amount of preparation is a prerequisite for good observation. For very small children, for example, it may be important for the mother to be present and relaxed. For older children, the matter should be discussed beforehand unless response to stress or surprise is being investigated. At the termination of the observational period, some of the young subjects may need a measure of support, especially if they have been disturbed by the intrusion. The age, social class and psychopathology of the subjects likewise governs how much or how little can be

accomplished by the observer. Where the children are suspicious, belligerent, acting out or phobic, direct observation may be contraindicated (Goodrich, 1959).

The nature of the situation may also determine how far the observer can play his role unobtrusively without creating a disturbance. For example, in some situations where games are being played, he may fit easily and naturally as another spectator. At the other extreme, it would be impossible for him to intrude on the therapeutic interview without making his presence felt acutely. In the intermediate situations, he may be able to sit in with a group of children in a dining room as long as he is accepted by the caretakers.

Knowing the nature of the situation may prepare us for certain observations so that they do not take us altogether by surprise. The ability to anticipate is an important skill for the observer to develop. It certainly helps to lighten his observational task.

In the following table adapted from Goodrich (1959), examples are given of this "situational analysis" as a preparation for observation.

TABLE 2. SITUATION AND BEHAVIOR
(Adapted from Goodrich, 1959)

Type of Setting	Situation	Type of Children	Nature of Stimulus	Predicted Behavior
Residential Treatment Center	Mealtime	Preadolescent Hyperactive Hyperaggressive Acting out Boys	Waiting for food to be served	Emergence of pregenital humor with reduction in hostility
Residential Treatment Center	Bedtime	Same	Being put to bed by female attendant	Emergence of chaotic disruptive behavior

THE OBSERVATIONAL LABORATORY

Whereas behavioral scientists (anthropologists, sociologists) prefer to capture their observations in a natural setting, the experimental psychologist, as a rule, remains in the structured setting of his laboratory where he is able to control the stimuli to which the child is exposed as well as the choice of response behavior open to it. This is important from the point of view of research design. Instead of waiting for something to happen, he can bring about its occurrence by artificial means and thereby save himself a great

amount of time and trouble. Another advantage of the laboratory situation is the ease with which observations can be recorded and measured.

The disadvantage to a controlled, standardized environment is the small range of situations that can be explored. It is difficult, for example, to get an overall impression of social adjustment or the adaptive capacity of children with minimal psychopathology. A more serious drawback is the way in which the laboratory is perceived by the child, even when the gadgets are skillfully concealed. The psychological "climate" is in itself stressful and the child's unfamiliarity with the setting may make him unduly apprehensive and so distort his responses.

HOME OBSERVATIONS

Many of these last-named difficulties may be avoided by selecting the home as an observational situation. The home would appear to be an ideal setting for studying family interaction. It is a familiar setting for the participants and they are therefore more likely to appreciate behavior and react spontaneously. The methods of observing and the observer's role must be adapted to the requirements of the home situation. The observer himself must be a trained person who can fit himself into a variety of situations, interact with the family members in ways that might be foreign to his personality and see the family as they see themselves (Behrens and Sherman, 1959).

The observer's participation puts the family at their ease and so encourages spontaneous, natural behavior. He may find himself included or excluded from the family group but any attempt to exclude himself would be fatal to the climate of observation. His subjective feelings and reactions are important clues to the understanding of what he is observing.

Informative observation is also difficult because of intrinsic differences among families, such as socio-economic status, size of family or age of children. Home observation in upper middle class homes where there is more room and greater opportunities for privacy and, perhaps, the presence of several servants is a different matter from observation among lower class families where there is more interaction in smaller crowded homes. In the former setting, the modes of behavior are more guarded whereas in the latter, the observer is accepted more readily. The best time for observation is undoubtedly the dinner hour when most of the family members are gathered together, and the situation also allows the observer to participate in a more natural way.

The presence of children makes a great difference to the situation. In the larger families, the impact of the observer may be less and the parents may be less inclined to focus on the child who has been referred to the clinic. Younger children also help to promote spontaneity and natural behavior and the younger the child the less suspicious and selfconscious he is with the

observer. According to Behrens and Sherman (1959) the effect of the child's pathology on the observation is similar to that of age. A very severely disturbed child often appears less aware of the observer and he is less apt to modify his behavior for the visitor. The less disturbed child is more likely to be influenced by his parents' reaction to the observation and will take his cues from them. A child currently receiving psychotherapy may reflect his treatment relationship and view the stranger as a threat or ally. The behavior of the children is sometimes explicable in terms of the amount of preparation received for the observation.

This is clearly a complex situation and the participant observation both enriches and limits the data collected. Such data are relatively inexact since the situation is not controlled; more systematic observation would be difficult in this setting without sacrificing the rich qualitative material which spontaneously emerges.

THE OBSERVER'S ROLE

The observer can be placed at different distances to the observed situation. He can be in close interactive relationship with the participants as a participant-observer, and, in the previous section, we have discussed some of the advantages of participation. A big disadvantage is that participation and observation do not as a rule work well together and the more involved the observer is in the situation, the more impressionistic and nebulous are his observations likely to become. Nevertheless, through participation, he is able to offer a further dimension of observation, but he very much needs to be observed himself.

Next, we can include the observer in the same living space but detach him from the situation as a nonparticipant-observer. His observational reliability will go up but he is likely to be confronted, in sometimes embarrassing ways, with provocations from the participants. The individual or individuals to be observed have to be especially prepared for the appearance of the nonparticipant-observer, since his "neutrality" may be found alarming. Children, being less self-conscious than adults, are easy to observe in this way, since they are more likely to take the presence of extra adults for granted. In every case, however, a period of acclimatization is generally necessary. In this "potted palm" position, a phrase coined by Dittmann, the observer can devote himself to observing and memorizing his observations for later recording. With certain children, he often has to be protected as his passivity makes him a fine scapegoat for displacement of aggression. It is sometimes difficult for the nonparticipant-observer to maintain his role without seeming to rebuff the child. This can be done least traumatically through a neutral non-threatening response and a referral back to the group or attendant. Haeberle (1959) stated the observer was concerned "not only with preventing development of relationships between child and observers but also with

preventing anxiety or anger on the part of the child resulting from lack of observer response".

If this amount of contact is found disturbing and distorting, the observer can be screened behind a one-way mirror in a room or both separated from the observational chamber. For certain children with a high degree of "perceptual orientation" (Beller's term for the child's awareness of his surroundings in a social situation), even a screened observer may prove too distracting, and the investigator may have to fall back on indirect modes of observation by way of information.

THE OBSERVATIONAL REPORT

The observer's task does not end with making observations. In most instances, he has to transform his accumulated observations into a report, but before he gets to his report, he needs some form of record. The record may be in his own mind, and he later reports from memory, from notes dictated or written at the time of the observation, or from an instrumental record.

The observational report can take various forms. The problem for the observer lies in the amount of data he is expected to extract from any given situation over a given period of time. The observational task may become burdensome when he is confronted with too much information for his "channel capacity". As a result, he may become randomly selective and produce a record that is patchy and inconsistent. The naturalistic observer is under less pressure. He can vary his approach to suit the needs of the situation. He can allow himself a generous amount of participation. He can take notes at leisure and later prepare a narrative report based on records made at the time and observations "recollected in tranquility". All this is, of course, highly subjective and maximizes opportunities for observer bias. In addition, during periods of making notes, he may lose contact with the situation under observation, and important transactions may thus be missed. The naturalist, however, is looking for the significant event. He has a good idea what he is searching for, and he is prepared to wait around interminably until he captures it, like the lepidopterist in pursuit of a rare species of butterfly. At times he may live-in with his subject in an attempt to blend with the surroundings and camouflage his observational activities. The prolongation of the observational period has the additional advantage of reducing observational inhibitions, since it has been shown that subjects under such circumstances tend to resume their everyday attitudes and behavior after a certain interval of "stranger reaction". The average subject, under observation, experiences increasing tension if he attempts to maintain a facade contradictory to his prepotent behavioral tendencies. As a consequence of such observational experiences, the naturalistic report has a quality of depth, complexity, and richness about it, and sounds "true to

life". What is less certain is how true it is to the particular "life" under observation. In many instances, it may be even more revealing of the observer than the observed.

The observer in the controlled, standardized, "laboratory" situation has altogether a different task and approaches it in a different way. In place of the significant event, he is in search of a representative period of observation that offers an average portrayal of behavior. He can, if he so wishes, manipulate the situation in a systematic way to encourage the emergence of certain patterns of response required for his study; that is, he does not need to wait around for them to occur. His assignment has usually been more precisely delineated, and he has been vigorously trained to do no more and no less than he has been instructed to do. He is forbidden by the rules to pursue the unexpected butterfly, however exotic. After a period of training, his observations are required to match reliably the observations of a fellow observer. There is an increasing tendency for sophisticated investigators to use "lay" observers who are naïve with respect to theory and theoretical expectation and are required to function in the manner of simple box cameras, doing nothing more than "snap" what they see.

In the past, the schedule for the laboratory observer has tended to be heavy. He was often asked to record a wide field of activity by means of a verbatim account made in longhand. The pressure created by this observational task—the need to select observational items, the loss of attention during writing, the panic at lagging behind the flux of events, etc.—led to several modifications in the observational procedure.

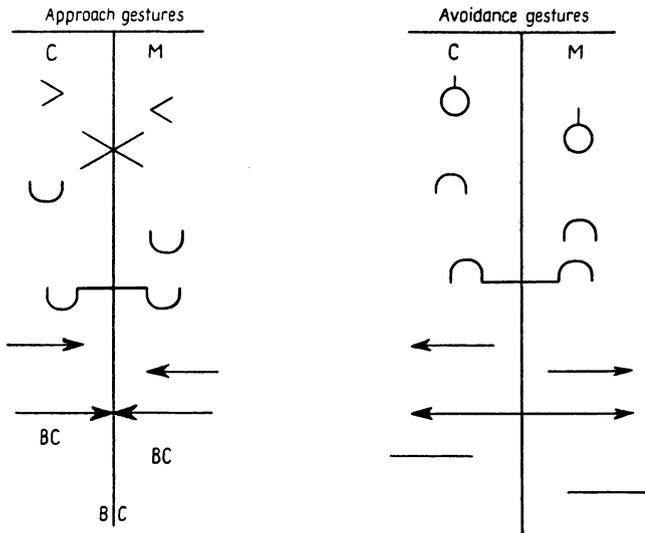
In the first place, it was acknowledged that the observer had to be selective and that the observations he made required slanting in the direction of his interest. Secondly, it had to be realized that the observational material did not constitute a picture of reality but simply a slice of data concerning the problem under study. This diminished the pressure "to get everything down".

Next, there was a reduction in the time component by the technique of time sampling, so that the observer did not have to be "on the ball" all the time. There was also a reduction in the number of events to be observed in any given observational period; only precoded categories, relevant to the investigation, were checked as they occurred. The screening of the observer was not only a device to protect those being observed, but also an attempt to reduce the pressures of participation allowing him to concentrate solely on observing. On an abstract level, the decision was sometimes made to exclude the observer from the theoretical discussions and maintaining him in a state of relative naivete was also made in order to shield his focus of attention and keep his viewpoint as unadulterated as possible. The urge to interpret in sophisticated observers is high, and their reliability as observers is consequently low.

The final effort to lessen the observational task was made in terms of a recording, first by the use of a symbolic shorthand (see Table 3) and then

by use of specialized equipment. In the latter instance, the observer sits in front of a keyboard that operates in conjunction with a 20-channel event recorder. Each of the 30 keys reports a behavioral item, and when a key is depressed, it activates one or a combination of pins in the recorder leaving a trace that shows the total duration of the behavior observed. As many as 10 behavioral items can be recorded simultaneously and give a continuous record indicating total time, patterning, and sequencing. The observational report is reduced to a series of tracings, and the total situation approximates more closely to the model of physical science.

TABLE 3. SHORTHAND FOR OBSERVERS
(Marschak)



The observational report may, therefore, be a set of symbols distributed chronologically, markings on a revolving drum, a checklist of categories, a descriptive account in anecdotal style, or a running commentary made verbatim. It can be made out by the participant observer, the non-participant observer, the screened observer, or a "blind" observer listening to or watching an instrumental recording.

In recent years, investigators have shown dissatisfaction with either/or choices and have tried to obtain the best of different worlds. This represents an attempt to synthesize the naturalistic and laboratory approaches, the subjective and objective viewpoints, using the one, in a sense, to check on the other.

There are various ways in which these multiple observations can be made. One can either use the same observer to function at lower or higher levels of abstraction of the data, or one can employ different observers making different types of reports at different distances from the observational scene.

The former approach can also be carried out in two ways, one the reverse of the other. As illustrated by Thomas and his group of workers (1964), the observer writes or dictates a running commentary of the scene before him, either in terms of individual activity or interaction or both. Following this, he rates his protocols according to certain precoded categories, such as activity, rhythmicity, adaptability, approach, withdrawal, distractibility, mood quality, reaction intensity, response threshold, as the child engages in certain types of interaction that provide a satisfactory range of significant interpersonal behavior. These direct observations are then subsidized by observational data obtained from "deputized observers", such as teachers and parents, who are asked to give a step-by-step description of both typical and atypical incidents of action, reaction, and interaction (Bloch, 1962).

Wenar prefers to move from the molecular to the molar. In his schedule, the observer begins with a detailed scoring sheet which offers all the advantages of objectivity, communicability and replicability. This is admittedly tedious in checking, but it is a great time-saver in the long run, since no judge could possibly make the many comparisons between observation periods and between children which can be made by inspection or statistical analysis of the detailed scores. (One of the troubles about such categorical systems is that many of the dimensions involved are often purely subjective and can be defined only with difficulty in terms of units or patterns of individual behavior.) Furthermore, there is no doubt that numbers lack subtlety and flexibility in expressing nuances of interaction. For these reasons, Wenar arranges for his observer to "take a break" from category reporting. He can then sit back and view an entire 15 minutes as a unit, so that he can go through the process of selecting, combining and weighing the situation in categorical terms, and come up with an overall rating. At this point, he has obtained correlations between the overall ratings and the sum of individual scores. At the third level of evaluation, the observer makes a "narrative summary" when he attempts to extract meaning from complex data; the pitfalls of this last procedure can be traced to its subjectivity and absence of rules. However, the objective scores from the first two levels provide important correctives, and one can, therefore, test statements in the narrative summary and correct for any tendency to strain consistency.

An alternative to "stretching" the observer is the strategic deployment of different observers, arranged hierarchically with a division of function. Included in the schema are participant observers, giving their own subjective feelings about being involved in interactions, non-participant observers engaged in objective commentaries, categorizing observers making ratings

on their scales, photographic observers storing observations that can be played back over and over again, and finally, interpretative observers speculating on the meaning of the situations being observed. Mahler (1964) has made excellent use of such a concerted system in her study of symbiosis and normal individuation. Haeberle (1959), making use of focused observation (as compared to non-directed, or free observation where the observer is looking at the total field, supposedly unselectively, but nevertheless, still selecting since no two observers see the same sequence of events in exactly the same way) has described her method of observing a facet of behavior. The problem of superimposing categories for analysis on data collected without structuring can be as troublesome as utilizing precoded categories, since much of the data may be unusable or the collection may be unbalanced, sufficient in some areas but insufficient in others.

In her observational set-up, Haeberle placed an observer behind the mirror rating only precoded categories; another two observers behind the mirror took detailed notes on the child's behavior and verbalizations using directed but non-quantified observation. The purpose of this was to provide clinical material as a framework in which to view the various quantified behaviors of the children. By using two such observers, working independently, a control was instituted on this directed but nonquantified observation technique, giving more valid and comprehensive clinical material; and, finally, one observer participating directly with the children, who, after each session, made impressionistic notes on her interactions with the children. Here, use was made of clinical insight to obtain subtle information observable only in direct interaction.

The method clearly allows for a great deal of flexibility, the nuclear observation being the detailed account of overt behavior and verbalization and the sequence of events in which they occur, with the ancilliary observations adding weight to the inferences. Here is an example of one of the recordings done with four- and five-year-olds:

Tommy, a four-year-old, started to play house with the girls, all five-years-olds, at Carol's invitation. Carol said, "Tommy is the big brother, Betty and Ruth are the sisters, and I am the mother." Then she laughed and said, "No, Tommy will be the baby." Tommy's face fell, and he shook his head, and Carol said, "What do you want to be?" Tommy, hesitantly and in a quiet voice, said, "The big ... the big ..." Carol broke in, "The big brother?" Tommy nodded. After a moment he said, "I want to be as big as you."

In view of Tommy's obvious need to be a big boy and in the light of Carol's treatment of him, this was classified as an incidence of aggression on Carol's part, although no overt physical destruction or verbal taunts were present (Haeberle, 1959).

In many respects, one of the most interesting attempts at recording observations was made by Loomis and Meyer working with nonverbal children (1959). Their observers talked about what they saw in front of them, whilst

it was going on, and in so doing reflected their affective responses to these events through their vocalizations. The authors conceded that this was "a primitive means for studying primitive children", but it clearly has more significance than that, because in giving the observer a highly dramatic role, they are breaking radically with the general tendency towards increasing unobtrusiveness.

In their view, they felt that the freedom derived from using the voice, in contrast with the restriction imposed upon one's pen, contributed to the affective spontaneity of the observer in reflecting, in his descriptions, the subtle, changing, or confusing feeling states of the child. Only by this means was the observer able to keep pace with the fluctuations demonstrated by these children. In addition, the authors abandoned the use of scientific jargon which they felt prematurely codified the responses of the children. Instead they made use of natural, everyday, graphic, and picturesque language which included slang, neologisms, illogicalities, half-sentences, interjections, allusions, noises, imitations, etc. At the same time the observer is encouraged to respond emotionally to the situation, as well as intellectually, and to talk "off the top of his head", anticipating, negating, or retracting statements as necessary. Here is an example of an episode:

Lenny is flicking and flexing the nipple of the bottle. Then he looks at the examiner for a second and goes back over to the shelf and sits down. He is feeling either the doll's mouth or lips; and I thought for a second that he was going to feed the doll with the bottle, but he doesn't. He turns to squeezing the bottle.

The authors describe their technique in the following way: "Underlying the whole procedure of *ad hoc* hypothesis formation and prediction is an attitude of openness to the unexpected and sort of 'evenly hovering attention'. While from the standpoint of affect we have been interested in moment-by-moment fluctuation, in the cognitive area our attention has focused more upon patterns or Gestalts." They feel that they have made a beginning in the quest for the combination of the advantages of the viewpoint of the scientist, the artist, and the ordinary human being in the field of observation "through the convergence of the binocular insights of the participant examiner and the empathic observer".

THE TRAINING OF THE RELIABLE OBSERVER

It is obvious that the type of observer required for naturalistic observations will be radically different from the type of observer made use of in the controlled, standardized, laboratory setting. The former, in general, gains from his rich, extrinsic experiences that permit him to detect significant events and set them within the framework of theory. For the latter, extrinsic experience acts as a distraction since, ideally, they are asked to do no more than function as cameras. Even the naïve observer approaches the observational situation with some preconceptions that govern his anxiety, and he

must learn to disregard these "assumptive worlds" during his period of training, and the more he can do so, the more reliable an observer he will become. As Abercrombie has demonstrated in the training of medical students so convincingly, preconceptions tend to breed misperceptions.

Attempts to cure such observational "fixations" are currently attempted during the training period by methods of "observing the observer"—filming or tape-recording his activities or putting him in the position of being observed himself.

Shapiro (1964) has evolved a technique for teaching observational skills in child psychiatry in six sessions of watching family interactions. The teaching materials consist of tape-recorded interviews with an entire family followed by an assigned task performed by the family alone in which they discuss together an open-ended, 20-item questionnaire. From the original complete tape-recording, a 20-minute edited tape was made by selecting critical incidents which most clearly revealed the family personalities and interactions.

In the observational class, any observations made by a student must be supported by evidence which is available to everyone. The students are expected to describe what is going on before they explain why it is happening or what it means. Group consensus is used to confirm observations made by one student. Completed clinical case records, original tape-recordings and treatment notes serve as additional checks and help the students distinguish valid observations from unconfirmed speculations.

The following is a vignette from the tape. The students only know that the family is comprised of a father, mother, and 11-year-old daughter.

Father: "Well, Peg, that reminds me, you seem to be concerned about, you mentioned that to me several times about her lack of ability to get along with her playmates there in the neighborhood."

Mother: "She doesn't get along with *any* of the children of her own age."

Child: "They don't get along with *me*!"

Mother: "They don't get along with her." (*Sarcastically*)

Doctor: "In what way?"

Child: "Well, when I want to go out and play with them, then they all send the boys down on me. The girls that I play with, the other ones. Sometimes the boys don't bother me, and we do get to play for a while. And this one girl, Marjorie, when I get to her first before anyone else, then we can play nice. But if Chris, or Roy, or Sue is along, well, that breaks up everything."

Doctor: "What do they do?"

Child: "Well, they, if they have a crowd, if they already have a couple of kids, they don't want any more."

Father: "Well, do they tell you they don't, do they tell you you can't go along or something like that, and . . .? In other words, you're not—

Mother (*interrupting*): "They—. She just doesn't get along like she says. If she happens to start playing with this one little girl and they play alone down at our house, everything is fine. They get along real good. But if any of the other children come along, this child will desert Mary Ann, and the group won't take her in."

The analysis of the tapes is carried out in sections. Having heard this, the students volunteer their observations of the irritation in the mother's voice, the detachment of the father, the support given by the doctor, and the odd-play pattern of "three is a crowd". A student may report his feelings of anger at the mother's critical attitude towards the daughter. As the tape unwinds, the picture of the family and of its special patterns and problems emerges. This is a second marriage for both parents. They are deeply involved with each other and continuously exclude the child from their own close relationship. The mother is highly critical of her neighbors who leave their children in the care of baby sitters. Whilst the mother says she cannot understand why her child acts as if she were starved for attention, the students can directly witness how both parents unwittingly act out the theme of "three is a crowd", the problem which the girl has described with her peer group. Other significant themes begin to show themselves, such as the mother's preoccupation with sex, and the mis-identification of her daughter with the hated twin sister, and these help the students to understand the dynamics of the mother's apparent rejection of the girl. Some of the students cannot at first perceive the mother's anger as readily as others, and arguments may arise on this and other points. Further listening to the tape helps to resolve the disagreement.

The above is an example of clinical training in observation. Observer training in research takes a different course. In the latter situation, the observers are carefully instructed on making reports, recognizing categories, and eschewing interpretations and inferences as much as possible (depending, again, on what role they are fulfilling in the observational schema). The observers who "get the hang of it" quickly show high agreement, but most observers improve with training and experience, and eventually become operationally reliable.

Observer reliability depends first of all on the observer and on his ability to gain and maintain an objective attitude. Next it depends on the clarity of the definitions given to the observational categories, or, in the case of inferential observation, to the extent to which inferences are tied consistently to specific behavior. Certain observers show high agreement, even with poorly defined categories, from the fact of working together over a long period of time. The simpler, shorter, and more concrete the observer's task, the more likely he is to achieve good reliability.

THE CONFLICT OF OBSERVATIONAL ATTITUDES

So far we have been avoiding some of the issues raised in the first section by confining ourselves to the activities rather than the attitudes of the observer. The focus has been on the observational situation—whether the observations are carried out in a familiar or unfamiliar setting, whether the observers are visible or invisible, participant or non-participant, whether the observed individuals are engaged in specific or non-specific activities, whether the recordings are anecdotal, categorical or instrumental, and whether the observations are being made for the sake of collecting data or whether a particular theory is at stake.

In turning our attention to the attitudes of the observer and the genesis of these attitudes, we find ourselves rapidly approaching a point of conflict in which we are asked to take sides. In this controversy, the universe of observers has been dichotomized into objectivistic and subjectivistic sections. The two sides are alleged to be irreconcilable and incompatible with each other. It is possible to hold one view or the other, but not both.

THE OBJECTIVE OBSERVER AS THE “DISINTERESTED SPECTATOR”

It would seem as if the observer who aspires to the “science of observation” is thereby committed to an “objectivistic reduction” for which the ultimate model is the objectivity of the physical sciences. The physicist is regarded as the perfect example of “the disinterested spectator” (Husserl, 1950) whose attitude is characterized by non-participation (*Nicht-Mitmachen*) and whose observational apparatus comprises a pair of sharp eyes connected with a powerful brain. This type of observer makes use of a “reduction” that retains nothing but the bare minimum of the observer’s existence. The sounding board of his personality is muted to as silent a level as possible. He functions like the pointer of a recording instrument (Eddington, 1949). The objectivistic observer does not doubt the reality of freedom, motivation, value systems or purpose, since this constitutes the basis of his “personal” life, but he refrains from making use of this reality in his scientific descriptions. He puts it “between brackets” to use Husserl’s expression, and suspends all judgment with reference to it.

This is the sort of observer that some behavioral scientists attempt to simulate, overlooking the fact that the physicist today is as much preoccupied with the way in which the presence of the observer alters the field of observation. It is even more difficult to exclude the observer from an observational event or to “depersonalize” him for the period, but attempts are constantly made to do so with claims that the authors have obtained “primary, raw behavioral data, factual and objective, and with a minimum of contamination by interpretation” [*sic.*].

THE OBJECTIVE CLINICAL OBSERVER

In child psychiatry, there has been a recent trend towards the purely factual objective. The facts are defined as observations made by a plurality of observers who reach agreement on the basis of their objective attitudes. (There is some circularity in this reasoning since the attitudes may be objective because they enable the observers to observe the facts in such a way that they are in agreement.) The first duty of the clinical observer, in this approach, is to record the facts as they occur, not retrospectively, and phrased in the simplest, most concrete language with a minimum of adjectival embellishments or qualifying clauses. The observer should put not only his feelings but his theories "between brackets" and treat each observation with the freshness of a first observation shorn of the influences of past experience. The behavior to be observed should be characteristic of the overall functioning of the child and obtained from activities in routine, day-by-day situations. The sequence of events should be allowed to speak for itself without influence.

The protocols are deliberately maintained at a factual level and are descriptive of visible and audible behavior. They seem specially appropriate for children still predominantly in the sensori-motor stage of development. Here is an example from the records of a psychotic child who is mute:

Mary picks up the ball from the floor. She puts the ball to her mouth. She licks the ball. She lets the ball fall on the floor. She goes to the chair and sits down. She drums on the table with her fingers. She looks at the mirror on the wall and smiles. She gets up and goes to the mirror. She puts her face close to the mirror and licks it. She goes to the table. She looks at the picture on the table. The picture is of a child sitting on a chair blowing bubbles through a pipe. She makes a sucking movement of her mouth. She puts her finger in her mouth and sucks on it. Etc., etc.

This, then, is the flat, dull, monotonous "raw" description that is characteristic of such protocols. There is no depth, perspective and meaning and there is not meant to be. The self-effacing observer is nowhere to be seen although we presume he is somewhere in the room. He seems to be doing little more than "leaving a trace" on a recording instrument.

The picture of the girl circulating around the room is accorded no greater reality than the girl in the picture sitting in the chair blowing bubbles. Both are included under "observable facts". There is a hint, however, that the elements "out there" might, if left to themselves, build up into a significant picture. The mute child is aware of her mouth and seems equally aware of the two-dimensional mouth of the girl in the picture. She seems to want to make use of her mouth in the way that the girl in the picture is making use of her mouth, and she empathically makes mouthing move-

ments. She normally fails to make use of her mouth in the way that a speaking child makes use of her mouth, and we begin to wonder if she understands the various uses of the mouth for sucking, blowing bubbles and speaking. We also wonder what her reaction would have been if real bubbles had begun to emerge from the pipe in the picture. How would our objective observer have recorded something so unusual? Would a touch of subjectivity have crept in? According to Aristotle, the growth of knowledge begins with wonder. How does one curb one's wonder?

THE OBJECTIVE OBSERVER IN CONTEMPORARY LITERATURE

The exclusion of the participant observer from the observational situation has had its most articulate expression in contemporary literature with the appearance of the so-called antipsychological novel. The proponents of this approach likewise envisage the novelist as a "disinterested spectator" and repudiate any attempt at making him into an intermediary between the characters and the reader. They do not "psychologize" or attempt to analyze their creations; they refrain from telling a story suggestive of some pre-established order, and they refuse all complicity with the world of objects, in the way of animism or anthropomorphism. They regard themselves as cameras, limited to a surface view of people as directly apprehensible in details of gesture, speech, sounds and distance. They admit to no omnipotent knowledge of what goes on inside the minds of their characters, beyond descriptions of their behavior, nor do they allow themselves to pass judgment on the rightness and wrongness of particular actions. They confine themselves to describing, measuring and defining objects as they appear, without projecting themselves into them. The surface of things is a cover for reality but is the only reality. The authors are conspicuous by their absence and offer no interpretations, no clarifications; only a rigorous, systematic description of the external environment. By sticking to externals in this way, they believe that they present an authentic version of things-as-they-are so that every reader can re-experience the same situation for himself without ambiguity.

An example of the method will convey its purpose better than any description that can be given. The following passage is taken from a novel entitled *In the Labyrinth* by Robbe-Grillet (1960):

The child is where he was sitting on the floor with his legs folded under him; it looks as if he wants to slide all the way under the bench. He continues to stare straight ahead, his attention indicated, for want of anything else, by his wide-open eyes. This sign, of course, is not infallible. If the artist had meant the child to be looking at nothing in particular, if he had imagined no specific feature for the fourth wall of this rectangular room where only three are shown, it could be said that the child is merely staring into space. But in that case, it was not logical

to represent him staring at the only one of the four walls that apparently looks out onto something. The three walls shown in the print had, as a matter of fact, no visible opening in them. Even if there is an exit at the left, behind the coat racks, it is certainly not the main entrance to the tavern, whose interior arrangement would then be too out of the ordinary. The main entrance, with white enamel letters spelling out the word "Cafe" and the proprietor's name in two curved lines pasted on the glass in an oval, and below this a pleated curtain of thin, translucent material, obliging anyone who wants to look over it to stand close against the door—this main entrance can be nowhere else but in the wall not shown in the print, the rest of this wall being occupied by a large window, also with a long curtain covering its lower half, and decorated in the middle by three spheres attached to the glass—one red one and two white ones—certainly suggesting that the exit behind the coat racks leads to a poolroom. The child holding the box in his arms would therefore be looking toward the door. But he is sitting almost at floor level and obviously cannot see the street over the curtain. He is not looking up to see some pale face pressed against the glass, cut off at the level of the neck by the curtain. His gaze is virtually horizontal. Has the door just opened to let in a newcomer who would attract the boy's attention by his unusual attire: a soldier, for instance? This solution seems unlikely, for ordinarily the main entrance is placed next to the bar, that is, in this case, on the far left, where there is a small clear space in front of the men standing dressed in middle-class clothes. The child, though, is sitting in the right-hand side of the picture, where no passage among the jumble of benches and tables would permit access to the rest of the room.

This passage has been selected for a number of reasons. First of all, it has to do with the observation of a child; secondly, it is purely descriptive without a hint of "psychologizing" any where in the passage; thirdly, as in the clinical protocol given previously, it is difficult to tell any difference between the behavior of the boy in the picture and the boy in real life. Both are "out there" and both are staring at something, the nature of which the observer, in his fixed position, is only able to deduce. He offers himself no vantage point in this respect. Despite the language skills of the author, the effect, as with the clinical protocol, is flat, dull, and monotonous, and the reader is fatigued by the punctilious attention to detail. Moreover, he is left with the uncomfortable feeling that whatever this is, it is not like life as he himself knows and experiences it (or perhaps likes to imagine it).

A number of criticisms have been made about this objective approach in literature which is highly pertinent to our present discussion. First of all, it is obvious that the author has not got rid of himself; he is very much present and participant. He constantly by his selection of items from the com-

plex environment around him. He includes and excludes from the act of observation in order to create a certain aesthetic effect. Without such sampling of experience, the product would be altogether intolerable, even if it were possible. For example, if someone moved an arm, there would have to be statements about how many degrees he did so, in what direction, with what speed, to what height above the ground, with what disturbance to his clothes, etc., etc. Followed to its logical absurdity, the author would find himself involved in an item-by-item, second-by-second description of the entire universe. Instead of being about to choose the particular theme or a particular set of characters or a particular period of time, he would become, by following this regime, involved in an infinite series in every dimension.

His selective activity also imposes itself in other areas. For example, he describes the environment predominantly in visual terms and pays lesser attention to the "inferior" senses of touch, taste, and smell. (This is true, also, of clinical protocols.) His observations, therefore, are skewed in a particular direction and convey a particular impression of the surroundings.

The third problem is one especially troublesome to the scientific observer. He has to make use of language, which, with its use of universals, brings about further depletions in his empiricism. When one of the characters, for example, "sees a cat", the author cannot avoid the use of the substantive "cat", which is a universal, and replace it by an infinite series of "cat-tish" images. This would again make literature impossible.

To sum up: the "objectivistic reduction" may oversimplify the field of observation and may create artificial barriers between the observer and the observed, but it does offer the investigator a means of obtaining data which can be categorized, communicated, replicated and enumerated. This fulfills the rules of scientific evidence. The objective method, therefore, carries conviction through its evidential strength.

What one gains on precision, nevertheless, in the objectivistic observation, one loses in richness. The record reduces the most dramatic encounters to bald, pedestrian descriptions and the use of observational categories have an even more "flattening" effect. It shows itself to its best advantage when reporting non-verbal conduct, and the behaviorist psychologist is inclined to limit himself to such situations and to distrust inter-human verbal interaction as a source of scientific knowledge. For the same reason, they frequently prefer to observe animal rather than human subjects. The experimental psychologist, E. C. Tolman, stated openly that he was suspicious of verbal reports. "I prefer to try to work out psychology with the aid of more gross forms of behavior. My motto for the present is: rats no men" (1936). (He dedicated one of his best known works to the white rat!)

It will be observed that a twofold reduction occurs with the "objectivistic reduction". The observer is reduced through the exclusion of his subjective reactions and the individual being observed is reduced through the inclusion only of observable, surface behavior.

The objective researcher behaves as if the field of observation had certain inherent dangers besetting it, against which he was supposed to exercise "eternal vigilance": his observer could contaminate the situation in a variety of ways by his mere presence should he permit himself to become a "presence", and the subjects under observation could tempt the observer into unhealthy (that is, subjectivistic) observational attitudes, were he to get too close to them. The "Noli me tangere" attitude is not easy to maintain in the company of children.

THE SUBJECTIVE OBSERVER

Kluckhohn has pointed out that "the scientist of human affairs needs to know as much about the eye that sees as the object seen" (1949). The human eye, unlike the camera, is "wired up" to a complex mental apparatus that causes the individual to react predictably and unpredictably to visual stimuli. It is true that the human eye during development is trained to see what other human eyes in its environment see, but it cannot be absolutely relied upon to do so. Idiosyncratic factors creep into almost every act of observation.

The subjectivists have carried the battle right into the camp of their objectivistic "enemies". For them, the question is not whether the observer can be excluded successfully from the field of observation but whether he should be so excluded: not whether he detracts from the scientific rigor of the situation, but whether he adds something inestimable to it. Again, the objective observer has often assumed that the subjective approach represented an all-too-human natural tendency and that the objective attitude required training, tenacity of purpose, and a constant battle against subjective encroachments.

The great subjectivist, Kierkegaard, took issue with this when he talked of "the task of becoming subjective" (1946). "It is commonly assumed that no art or skill is required in order to be subjective. To be sure, every human being is a bit of a subject, in a sense. To strive to become what one already is: who would take the pains to waste his time in such a task, involving the greatest imaginable degree of resignation? But for this very reason alone, it is a very difficult task, the most difficult of all tasks, in fact, precisely because every human being has a strong natural bent and passion to become something more and different . . . objectively, we consider only the matter at issue, subjectively we have to regard the subject and his subjectivity . . . *the objective tendency, which proposes to make everyone an observer, and at its maximum to transform him into so objective an observer that he becomes almost a ghost*—this tendency naturally refuses to know or listen to anything except what stands in relationship to itself."

Kierkegaard has no doubt, and repeats this often, that subjectivity offers a greater approximation to the truth than objectivity, and that in order

to develop one's subjectivity one has to eliminate the so-called objective attitude which he sees as a defense against the more troublesome decisions involved in subjectivity.

Among the latter day subjectivists, mostly phenomenologists, there are several who have pleaded the subjectivistic case cogently and lucidly with the use of charming analogies. Jeanson asks us to take a look at an automobile. It is clearly, he says, a material thing with a certain mass, weight, volume, etc. It is, moreover, a car of a certain make, say a 4 CV Renault. As far as these points are concerned, there can be no difference of opinion. Nevertheless, he points out, they do not tell us at all how the individual sees the car. Let us assume, for example, that its owner suffers from ideas of inferiority and is under the domineering influence of his wife. The only thing that allows him some superiority is the fact that *he* alone in the whole family knows how to drive. What, then, asks Jeanson, is this car really? A 4 CV Renault or a means to escape a woman's domineering influence? Everyone would agree that it is a 4 CV Renault, but precisely this objective truth is wholly unimportant and without value; it has no "validity" for anybody. This is, of course, what Husserl would have referred to as a "skeptical argument" in that it presupposes as a validating condition precisely what is denied in the assertions.

The sociologist, MacIver, offers the following illustration. There is, he says, an essential difference between a paper flying before the wind and a man flying from a pursuing crowd. The paper knows no fear and the wind knows no hate, but without fear and hate, the man would not fly nor would the crowd pursue. There is an explicit assumption here of emotional purposes involving an anxious flight towards safety and a hateful pursuit for vengeance. According to MacIver, it is clear that the terrified attitude of the fleeing man and the terrifying attitude of the pursuing crowd are "seen" and "understood", whereas a piece of paper on the other hand, whirled around by the wind, does not manifest any expression. Anyone, who fails to make use of such intuitive data, does not speak the language in which he can describe human beings and human events, since the most elementary relationships between man and man are based on the mutual understanding of attitude and expression. (It is important to differentiate here between the immediate intuitive understanding of flight, pursuit, fear, and hatred, and interpretation that is made on the basis of knowledge, experience and theory. The latter will be discussed in the next section.)

Another sociologist, Lundberg (1956) took exception to MacIver's argument. He objected to the use of the terms "fear" and "hatred" as subjective terms. He was of the opinion that only externally observable behavior led to objective observations and that if one used the methods of physical science, all the perceptible "facts" could be described in the same way by all the observers. He, therefore, preferred to describe the situation in operationally defined terms. It was an objectively observable fact that

the man had gone from point A to point B and the velocity of the crowd increased from V1 to V2. More than that it was not possible to determine through the methods of physical science. The terms "fleeing" and "pursuing" were too subjective for scientific use. Lundberg emphasized that he did not consider MacIver's analysis false. However, it could not be proved to be false, and according to Popper (1960), a statement is scientific to the extent to which it is empirically refutable, especially by observation.

The "reduction" of the observer has also brought an agonized reappraisal from the subjectivists. The observer, like the individual observed was not merely a "thing" that passively underwent experiences. Strasser's indignant rejection of this viewpoint is worth quoting:

"I, this individual human being, who is looking out of the window, am constantly involved in the conservation and modification of this specifically human world, and this involvement is an essential feature of me as an economic, social, and cultural being. By doing my professional duties, by pursuing research, by writing, I am busily engaged in changing the surrounding world. Accordingly, this world is not at all a complex of stimuli undergone in a purely passive way." (1963.)

He, therefore, concludes that he cannot conceive of himself as a recording instrument with a simple pointer device. He is an active observer, fully engaged in the act of observation and making complex use of all his faculties and functions in order to enhance his observations.

Because the subjective observers cannot appeal to primary evidence whose truth imposes itself, that is, becomes self-evident, they have to find their convincing power elsewhere, generally in verbal conviction, or "the magic torrent of words". Implicit in this approach is a manipulation of suggestibility, an influencing of mind by mind. A great deal of clinical data is convincing in just this way, in the manner of D. H. Lawrence's passionate declaration: "It's true; I feel it in my belly" (1932). Clinical observers vary considerably in the extent to which they can convince their professional audience by arguments based on their clinical observations. The more linguistically skillful they are, the more realistically they can bring the scene to life, the more conviction they will often carry. When the clinical impressions are coupled to an interpretative framework, arguments often seem to carry increasing weight. Nevertheless, it is in this area that the subjectivists are at their most vulnerable to the attacks of the objective school. They are currently living through a "crisis of evidence" which has set them looking for ways and means to represent their cause more convincingly.

THE INTERPRETATIVE OBSERVERS

Whereas the objectivists are concerned with the reality of the external environment, and the subjectivists with the reality of their own feelings with regard to the environment, the interpretative observers are preoccupied with

the hidden meaning of things. They are interested in the latent as opposed to the manifest and they have a predilection for theory-making and speculation. Whether subjective or objective in their outlook, they like to go beyond the facts and have a special urge to translate symbols. In an extreme representative of this group, there is often a gross imbalance between the observational data available and the massive interpretations gained from them.

It is interesting to note in this connection that Farber and Fisher (1943) working on dream translation in subjects under hypnosis found that about twenty per cent proved to be able translators of their own dreams. The explanation for the failure of the remainder of the group was not clear, but compared to the translators, they appeared to be inhibited and rigid characters. These "natural" translators are easy to detect among one's patients, since they so readily translate their observations, whether of dreams or real life situations, for the benefit of the clinician. Among observers in training, there also appears to be a group highly predisposed to translation (only in part attributable to professional experience and training) and it is this that makes them into poor observers.

THE GENESIS OF THE OBSERVER

We have been speaking so far as if we were dealing with innate tendencies of objectivity and subjectivity, similar to the personality polarities of extroversion and introversion, outer-directedness and inner-directedness. As good developmental psychologists, however, we cannot take the innate for granted, until we have followed it over time.

From the very beginning, the individual is immersed in a world clamoring for his attention. To survive psychologically in such a bedlam of perceptions, he rapidly has to learn how to perceive and how *not* to perceive, how to discriminate between meaningful and meaningless stimuli and how to focus attention on a small part of the total environment, casting the rest of it transiently into outer darkness. The child passes from merely looking to seeing and from seeing to understanding; his perceptions grow into apperceptions and form the basis of conceptions. The ability to concentrate his attention is at first a largely physiological task, but his later observations, under the constant tutelage of his mother, are in large part governed by psychological factors. A liberal-minded parent may set no limits at all to his observational horizons. His enjoyment of the sensory world is enhanced by his pleasure in his restless explorations and discoveries. The geography of his body, and of other bodies, is open to investigation, and bodily sounds are acknowledged with interest.

By contrast, a child may be reared under strong injunctions against certain orders of observation: "It's rude to stare at people"; "You mustn't look at your sister when she's undressing"; "You mustn't pay attention

to dirty noises like that, it's impolite," etc. It is in this setting that inhibitions and interests are born and give rise to the neurotic inhibitions and voyeurisms of later life. It is probably at this early stage that the haptic observer develops his psychological shortsightedness and his profound indifference to his visual environment.

When we come to consider the basic observational attitude that determines the subjective or objective approach, we are confronted with what appears to be a fundamental orientation towards the "self". The objectivistic observer seems mistrustful of the "self", regarding it as a real handicap in the field of observation. He would like to ignore it or place it safely "between brackets", but there is always a chance that it might escape and interfere with objectivity. As Kierkegaard (1946) hinted, the objectivists seem afraid of the "self" and have difficulty in accommodating it within themselves. Even in their ordinary lives, they do not accord it too much recognition and tend, on the whole, to be outdirected and extroversive, disinclined to discuss self-feelings and self-problems.

The subjectivistic observer, when we trace his path clinically, also makes his appearance fairly early in childhood as manifested by inner-directedness, introversion, self-centeredness, and an over-concern for the internal environment of thoughts, dreams, and fantasies. His approach to the external world is mediated through his own personal frame of reference.

A developmental viewpoint furnishes a better understanding of the two attitudes. According to Piaget, we all change worlds during development. In the first seven years of life, we live in a pre-scientific era, when ideas of time and space are subjective and nebulous, causality determined by magic or phenomenistic factors, and the observational attitude highly egocentric. The child at this stage cannot look out empathetically through the eyes of another. His perspective remains subjective and ego-bound. In a small test in which he is instructed to follow the progress of a miniature cameraman over a series of mountains, the smaller child (below the age of 7) is unable to relinquish his personal viewpoint and project himself imaginatively into the little mountaineer. (See Fig. 2.)

A subjectivistic-objectivistic revolution occurs round about the age of seven, from which point onward, the child develops an increasing capacity to regard his environment objectively, relatively, and scientifically. We can speculate that this change-over may take place in lesser degree in some rather than in others and that the average adult will achieve a workable balance between the two attitudes.

In our everyday lives, we also live in two worlds. There is the "everyday world" (Husserl's *Lebenswelt*) with its prescientific orientation and its pre-given quality which is always accepted in advance as being. The prescientific experience refers to a certain level of our personal, cognitive life which is subjective and apperceptive. Strasser (1963) has compared it to the soil in which scientific life grounds itself, developing its critical,

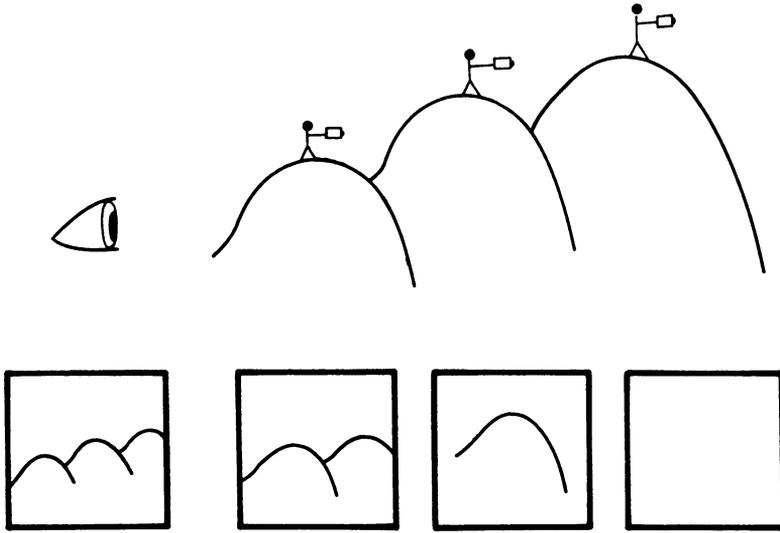


FIG. 2. The Ontogenesis of the Observer (The Egocentric Observer)

systematic and objective approach to knowledge. Not only is there no sharp boundary between prescientific and scientific life, but there is a dynamic relationship between the two levels.

We have, therefore, two sets of relationships between the subjective and objective: one, between an earlier and later stage of development, and the other between one type of "world" and another. The issue has been and still is with us and continues to remain critical in both our everyday and scientific lives. We may also assume that the two elements are present in every observer, however dominant one of the attitudes happens to be, and it is probably true that no single observation is conducted without some intervention from both. The conflict is not simply between subjective and objective observers, but between subjectivity and objectivity in each observer.

It has been speculated that the growth of the objective attitude resulted from social interaction and association with other observers (Piaget, 1956). Accordingly, an observer, who hypothetically developed outside human society, would not develop an objective component to his mode of observation, because of this absence of a "corrective perceptual experience". His ontogenesis as an observer is, therefore, dependent on his submersion in a world of observers with whom he can identify and develop an "other-than-own" perspective.

With the repeated impact of the "corrective perceptual experience", the egocentric perspective diminishes, objectivity increases and the qualities of intuition, empathy, sympathy gradually develop. The two capacities, for seeing the other person objectively and being able to put oneself in his shoes sympathetically and empathetically, form a matrix from which a total observational experience of the other person eventually emerges.

The truly empathetic observer (Loomis and Meyer, 1959) has auxiliary observers stationed in others with whom he associates and through whom he increases his total understanding of the environment. Allied to these, the individual, in the course of development, develops "imaginary observers" who are located on the other side of things and feed him observational information which he no longer needs to verify directly for himself. This cohort of "imaginary observers" helps in the creation of our three-dimensional world, and makes it unnecessary for us to constantly go in search of "the other side of the moon".

As development proceeds, the ability to accept the other person's observations, to communicate with other observers, and to record observations with an acceptable degree of verbal accuracy transforms the child observer into the adult observer with his characteristic greater objectivity of observation, and eventually into the scientific observer.

The extent to which differences in perceptual equipment, either as a result of constitutional factors or post-natal organic changes, affect our basic observational attitudes is difficult to determine, but one would expect them to play some part, if only to fix "thresholds" and "ceilings" of experience.

The objectification of the external environment gradually comes about as a result of three important observational mechanisms. The first isolates the object, differentiating it from other objects; the second identifies the qualities that make it a different object; and the third, by giving it a name, and always indicating it thereafter by the same name, pushes it further into the open community so that others can share in the process of differentiation and identification. Name-giving is the apex and crown of experience during early development since it confirms and ratifies the reality of the thing named.

Having used the words "subjective" and "objective" in such a categorical fashion, it seems necessary to say something in terms of definition. Like almost all other words in the language, they are ambiguous. The term "objective" is used to define an attitude which makes no attempt to appeal to the self-experience of the subject, but it is also applied when the subject is transformed into the object of empirical research. It is also used to designate someone whose observational attitudes are carried out without bias and whose judgments are determined by the reality that presents itself to him.

The term "subjective" is used to describe an attitude that is regarded as being governed by moods and impressions. The judgment of the subjective observer is not submitted to a comparison with norms imposed by reality so that his theories appear to result from emotional need rather than reason. Looked at in its worst light, subjectivism is seen as the tendency of the individual to lock himself up in his own ideas and feelings, thereby precluding considerations from the objective viewpoint.

OBSERVATIONAL DEFENSES

The attitudes that we have been describing with respect to the mode of observation are extreme instances of what in lesser form are encountered quite frequently. It indicates the presence of a gap in what would ordinarily be a continuum from subjective to objective and from observer to object. If we look at this in the light of evolutionary history, we can observe that in the first phase of man's evolution, the appearance of speech made communication possible and put him in touch with his fellow men (and other primitive investigators), at the same time emancipating him from the concrete. In the second phase, the construction of universal, scientific theories freed him from the limitations of prescientific discourse with its everyday, local, national, mythical, and cultural horizons. Then came the third phase in which an artificial restriction of experience to objective experience led to new possibilities in developing scientific evidence of a compelling character. However, a sad consequence of this artificial restriction led to the establishment of scientific hierarchies with objectivity achieving a higher status than subjectivity and the objective scientist more confident of his own position

and less tolerant of the "witch doctors" lower down on the scale. Inevitably, the dialogue between various searchers after truth became very difficult.

At the same time, a rift appeared between the observer and the object of observation that outlawed natural participation, permitting it under certain artificial conditions to which apologies were always attached.

In discussing the objective attitude, it seemed to us that the pressure to "get rid of the 'self'" represented, to some extent, a defense against the emergence of an infantile component of the personality with its unruly, primitive, undisciplined qualities. It suggested a need to keep the voyeuristic impulses under control. One could look, but only after the situation had been carefully structured.

On the other hand, Strasser's insistence on his rights as an active observer would seem to suggest some concern about being turned into an object. Can we assume that too much subjectivity makes it difficult for the individual to function as an object of observation? In Piaget's psychological theory, it certainly takes a developmental revolution to transform the attitude of the child observer from subjective to objective and to give the child the capacity to see himself as an object among other objects. The professional observer, more than the average observer, may have latent fears about undergoing such a transformation. The discussion by Sartre, mentioned earlier, is pertinent here. At the time of the metamorphosis from observed, the person experiences a radical change in the structure of his consciousness. The other person's stare takes away something from him that he conceived of as being peculiarly his own—his observational tools. He has entered into a new world in which he has undergone a degradation from subject into object.

The defenses, therefore, are directed towards preventing the transformation of subject into object or the emergence of subjectivity in the subject. They have brought about a gap in the continuum of experience and have established hostile camps at the two poles of subjectivity and objectivity. Representatives of both sides have argued against each other and with each threat have withdrawn defensively to their respective poles. Such a dichotomy of subject and object is another example of what Whitehead referred to as a "bifurcation of nature" that led inevitably to untenable, extreme scientific positions that impeded further scientific developments. If we are to avoid this kind of outcome, it would seem imperative to resolve such differences and defenses that beset us with as much expedition as we can muster. We must search for methods to bridge the gap.

A SYNTHESIS

When the observational experience is considered in terms of experiential events and experiential properties, two things become evident: the complexity of the processes involved and their continuity. (See Table 4.)

It is frequently asserted that all the sciences, from physics to psychology, are in the same position epistemologically in that they are dependent on reports of direct experience for their raw data, and that there is no essential difference between the raw data of physics and that of psychology. As Kohler (1947) has argued: "It does not matter at all whether I call myself a physicist or a psychologist when I observe a galvanometer. In both cases my observation is directed towards the same objective experience." In the situation he cites, it is a fact that both investigators proceed from an experiential, perceptual, observational act and that the actual report is generally a cognitive, not a phenomenal one. The difference lies in the fact that practically always the particular experiential character is irrelevant for the physicist, but in many significant situations it is central for the psychologist.

If this is true, according to Zener (1962), it would be important to develop a much more adequate descriptive terminology and analysis of the perceptual processes of observation and the linguistic processes of report required to achieve sufficient objectivity, and a much more detailed determination of the role played by experiential properties in the causal context of the behavioral aspects of organism-environment interaction. What is wanted, therefore, is a searching analysis of the total perceptual-behavioral event. An understanding of events also requires a careful documentation of the properties that compose it. Is it possible to report this in radically non-phenomenal terms without using direct experiential references? As Zener put it:

"It is not technically possible to characterize in radically non-phenomenal terms the perceiving of a colorful and fragrant flower; the wearing noise of traffic, the movement of a melody; the uneven ground on which one walks; the careening approach of a truck out of control; a pattern, textured terrain viewed from an airplane; the multimodally experienced woods on an autumnal walk, the upturned trusting face of a young child; the pain of a toothache; resistances to an act of courage; of self determination; the joy, the suffering of another person, the painful fact of non-communication; the charm of a human gesture or expression, painted or real."

(This is a curiously poetical statement from a scientific mind!)

Zener starts with the assumption that human perception of external objects and situations occurs in a context of ongoing interaction between an organism and its environment. His analysis, tabulated in the previous table, accepts as fundamental the following components: the experiencing, behaving organism-person and his internal mediating processes; the external environment (the immediately surrounding medium of energy flux and the generally more remote one of external objects and events); a process of changing relationships between these two major components of the situation during the course of the ongoing perceptual interaction itself. It is the peculiar role of experience—the experiential properties of the per-

TABLE 4. THE OBSERVATIONAL EXPERIENCE
 (Adapted from Zener, 1962)
 An Analysis of "O Perceives X"

Afferent (S)		Central		Efferent (R)		
Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7
The World of Object Events Surface visible aspects Least dependent part of perceptual sequence	The Medium World Neural conduction of optic array Related to spectral wave length	The Receptor Process Retinal excitation (also other sensory end organs)	The Central Process (a) afferent (b) central (c) efferent and (d) is experiential and cognitive Behavior-controlling processes. Multiple sensory and motor projections with diffusion of stimulus	The Effector Process Actual muscular and glandular response Verbal report	The Medium World The Movement and end of the perceiving object on the perceived object	The World of Object-Events Empirical datum Specifiable in terms of producing change

"O discriminates X"

"O cognizes X"

"O experiences X properties"

"O responds specifically to X"

A combination of all these

ceptual interaction—that Zener emphasizes. He goes on to describe his seven phases and the interrelations among the phases, claiming that this paradigm constituted the only meaningful answer to the problem of relations between perception and behavior. (In this context, behavior is defined as a publicly observable activity of muscles or glands of external secretion; mental activity, on the other hand, is inferred from behavior rather than being obtained directly from self observation, and knowledge of it is chiefly theoretical. The subject's experience in terms of its phenomenal properties is not publicly observable but is an "intervening variable".)

Zener considers it anachronistic in the present age of physics to insist upon direct observability of manifest behavior as a criterion of the subject matter of the psychological sciences, especially as there is as yet no clear definition of what is "directly" observable, or what is "behavior." As he points out, in no other science is there a single unqualified noun referring to the totality of events studied by that science, nor are there any biological, physical or chemical laws comparable in generality to stimulus-response laws. "No other science handicaps itself with the incubus of a term which so discourages analysis and encourages over-generality of interpretation of obtained functional relationships."

Observation does not occur in a vacuum; there is always an activity of some organism (O) in reference to some object, event, relation, or situation (X), and there are multiple meanings to the statement (O observes X). This could mean that O discriminates X, differentiating X from Y; or that O comprehends X in a cognitive fashion; or that O recognizes experiential properties of X as they occur in himself; or that some specific kind of behavior has resulted from stimulation by an external object or event; or a compound of all these meanings. Compound usage is disadvantageous for research.

In reporting on observations, goes on Zener, there is a choice between cognitive versus phenomenal reporting. The so-called physicist's report achieves a pragmatic, public characteristic, but a simple pointer reading is insufficient for psychological observation. On the other hand, phenomenal observations are scientifically valid only if all literate, moral, and sensorily well equipped observers agree each with each other, and there are multiple simultaneous observations of a single common external situation. Stated in a revised version, the latter would run as follows: different individuals repeatedly and independently realize specific conditions and independently and repeatedly, under these conditions, report similar experiences. A phenomenological description is not, in itself, fully developed science, but becomes so to the degree that the adequate specification of the conditions of the experience become possible.

With increasing descriptive adequacy, it should become easy to identify more completely the conditions of given experiential properties. With resulting increased control over these conditions, clearer inter-observer communi-

cation and explicit specification of experiential properties should all become possible. Therefore, a basic proposition is that experiential events occur and are of central significance for psychology; that experiential properties are real, identifiable, specifiable and capable, within limits, of being reliably reported by experiencing persons. Although these experiential properties are private to the individual, nevertheless they constitute the ultimate data of psychology in the area of experiential perception. In making reports, the psychological investigator has direct access to his own experience and three sorts of access to the experience of others all of which are indirect. These are perceptual access, the phenomenal report, and the behavioral indicator. In the past it has been fashionable to express skepticism about the experiential properties of another's perception ever being available. However, if experience is accepted as a reality, and if the universe is accepted as orderly, and where the conditions, internal and contingent, are similar, the experiences of two comparable individuals under similar conditions should be similar. Behavior represents one other indicator of experience.

Individuals who observe can communicate within limits a report on the experiential properties of the perceptual events. An indication of experience cannot be certain in single instances but where there is a sufficient series of past agreements in reporting experiences of the same events or of similar events perceived under similar specified conditions, there is a general basis of confidence in reporting, especially where there is a capacity to specify, ascertain and control.

In order to be a good observer, one should have a genuine interest in the observational experience, the capacity to maintain curiosity with reference to it, some sensitivity to the connotational nuances as well as to the denoted meanings of words describing experiences, combined with the constant awareness of possible discrepancies between descriptive terms and present experience. The observer-experiencer should have confidence in the reality of his own experience. Where there is disagreement between observers, one has to decide whether this results from genuine differences in the perceptual processes occurring within the individuals as well as from discrepancies arising from ambiguity in phenomenal terminology, substitutions of cognitive judgments for phenomenal ones, associative or influential comments and interpretations, utilization of the language of physics rather than of phenomenology, and reversion to an habitual use of categories instead of a fresh determination of each report by each actual experience, and, finally, sheer insensitivity or even carelessness in reporting. In order to ensure that the observer's reports remain genuinely experiential, it is important not to simply pass on a set of general instructions. Diversities in observational reports when they occur among good observers are not another reason for abandoning the introspective method; rather they provide occasions for inquiring seriously into the multiplicity of kinds of perceptual organi-

zations as well as into individual differences. Zener feels that it is highly desirable that in any descriptions of observational research more explicit specifications of subjects are routinely included.

In observational reports, one can include an unrestricted phenomenal description of what occurs together with an indication of the presence or absence (or level on a rating scale) of a specified experiential property.

A FOUR-COLUMN ANALYSIS OF A GAME BY FREUD (1920)

In addition to having his mind inwardly directed and engrossed with the internal, subjective world, Freud gave numerous indications that he possessed an acutely observing eye. He was thus able to range freely across the objective-subjective spectrum, apparently unaware of the gap. It was true that as he grew older, he spent more time at the subjective end, but he was never averse to crossing when the occasion demanded.

One explanation for his flexibility lay in the fact of his training. He started his professional life very near to the objective pole as a neuro-anatomist and neuropathologist; he moved towards the center as he practised as a clinical neurologist; and, eventually, he shifted over to the right as his psychological interests deepened.

Many of his observations are not only masterpieces of a micro-technique but seemed to reflect his line of development during his training. For example, he would start his observations with a meticulous and detailed description of an external event, build up evidence regarding its internal significance, construct tentative hypotheses and then look for external confirmation.

His account of an observation made on an 18-month-old boy who played with a cotton reel and string in the absence of his mother could not be bettered by any of the observational vignettes we have so far included in this paper.

That it remains a four-column analysis signifies that Freud showed not too much interest in the phenomenological sphere but tended to jump into the interpretative as soon as he was able to do so.

Here, first of all, is a clinical portrait of the child which is full of deft observations, condensed into a paragraph. The boy is "brought to life" for us.

The child was in no respect forward in his intellectual development; . . . but he made himself understood by his parents and the maid-servant, and had a good reputation for behaving "properly". He did not disturb his parents at night; he scrupulously obeyed orders about not touching various objects and not going into certain rooms; and above all he never cried when his mother went out and left him for hours together, although the tie to his mother was a very close

one: she had not only nourished him herself, but had cared for him and brought him up without any outside help.

He then goes on to the observed event that caught his interest:

Occasionally, however, this well-behaved child evinced the troublesome habit of flinging into the corner of the room or under the bed all the little things he could lay his hands on, so that to gather up his toys was often no light task. He accompanied this by an expression of interest and gratification, emitting a loud long-drawn-out "o-o-o-oh" which in the judgment of the mother (one that coincided with my own) was not an interjection but meant "go away" (*fort*). I saw at last that this was a game, and that the child used all his toys only to play "being gone" (*fortsein*) with them.

Then came the first confirmation:

One day I made an observation that confirmed my view. The child had a wooden reel with a piece of string wound round it. It never occurred to him, for example, to drag this after him on the floor and so play horse and cart with it, but he kept throwing it with considerable skill, held by the string, over the side of his little draped cot, so that the reel disappeared into it, then said his significant "o-o-o-oh" and drew the reel by the string out of the cot again, greeting its reappearance with a joyful "*Da*" (there).

He then interprets the meaning of the play:

The meaning of the game was then not far to seek. It was connected with the child's remarkable cultural achievement—the forging of the satisfaction of an instinct—as the result of which he could let his mother go away without making any fuss. He made it right with himself, so to speak, by dramatizing the same disappearance and return with the objects he had at hand.

Finally, the interpretation is fully established by a further observation:

One day when the mother had been out for some hours she was greeted on her return by the information "Baby o-o-o-o" which at first remained unintelligible. It soon proved that during his long lonely hours he had found a method of bringing about his own disappearance. He had discovered his reflection in the long mirror which nearly reached to the ground and had then crouched down in front of it, so that the reflection was "*fort*."

The stages are tabulated in Table 5.

THE FIVE-COLUMN ANALYSIS OF A GAME BY ERIKSON

Like Freud, Erikson (1940) has been engrossed in the analysis of the total observational process from the objective to the interpretative end. Being a clinician, his picture of it is largely psychodynamic, but he is shrewdly aware of the amount of distortion that can and does occur.

TABLE 5. A FOUR-COLUMN ANALYSIS

(Adapted from Freud)

Column 1	Column 2	Column 3	Column 4
Pre-observational data	The behavioral item	The interpretation	The confirmation
A "model" 18 month boy—well behaved, obedient—close tie to mother—yet never cried when she left him. Threw his toys about emitting a gratified "o-o-o-oh!" (= gone away! according to mother)	Repeatedly threw wooden reel with string attached over side of cot. On its disappearance "o-o-o-oh!" On its re-appearance, joyful "Da". More pleasure with second part of game.	Reel = mother. In place of her going and returning, child throws "her" away and brings "her" back. (i) Mastery of separation (ii) Turning passive into active experience (iii) Revenge over being deserted	Interpretation confirmed by further observation in which child makes his mirror reflection disappear with the accompanying "Baby o-o-o-oh!" Speculation on the repetition compulsion

In his first column, he is concerned with a realistic appraisal of the "behavioral item" in terms of its onset and termination. It is an objective, manifest description in simple everyday language of the observational action or interaction that is to be analysed. The second column also deals with manifest aspects of the behavior but dissects it into various morphological parts in terms of content, affect, expression and movement. The observer's experience of the observational act, described in phenomenal language comes into the picture in the third column and involves past experience of similar situations. The fourth column deals with the latent content and the meaning of symbolic representations and attempts a psychoanalytic reconstruction of the scene. The last column brings confirmation as well as stimulus to further speculation. (See Table 6.)

In the series of illustrations that follow, taken from the analysis of an actual play situation, it will be seen how effective and diagnostically helpful the micro-dissection of the observational process can be in uncovering a wealth of meaning in what looks at first glance like a very simple situation that one might hardly notice during the course of a long play session.

You will notice how much goes on in the mind of the observer in the form of an internal dialogue full of argument and counter-argument related to the meaning of particular observational facets. You might well be reminded here of the passage from Robbe-Grillet given earlier. It is also worth noting that the progress of the case is reminiscent of the analysis of a child carried out by Burlingham, in which treatment came to a standstill and was then

TABLE 6. THE OBSERVATIONAL PROCESS
(Adapted from Erikson, 1940)

Descriptive		Impressionistic	Interpretative	
Category "A"	Category "B"	Category "C"	Category "D"	Category "E"
An objective common-sense description of an observational unit or item of behavior in its manifest aspect of what is seen and heard.	An objective configurational description (morpho-analysis) of the effect, constant spatial relations and expression of the manifest behavior.	A subjective impression based on past impressions, previous observations, the observations of others, and associations between present and past behavior leading to reflections on the latent possibilities of the item of behavior.	An interpretation of latent aspects of symbols and metaphors following an analysis of defenses, a genetic reconstruction and a dynamic analysis of configurations.	A confirmation of the interpretation by subsequent events leading to speculations beyond the evidence offered by the behavioral item.

broken off because the child had a secret about the fidelity of its mother that it could not impart to the analyst (the mother had warned the child that the revelation might have catastrophic repercussions on her). In Erikson's case, the analysis of the behavioral item alerted the diagnostician to the possible existence of a secret so that he was able to deal with this and maintain the child in therapy. In the previous treatments, they have wrecked themselves on the rock of this secret. (See Tables 7-16.)

TABLE 7

ILLUSTRATION OF THE OBSERVATIONAL PROCESS

(Adapted from Erikson, 1940)

The Discovery of a secret. Case information

6 year old sailor's son in hospital for investigation (G. I. tract and EEG all negative) and circumcision.

Complaints: Encopresis, fecal play, petty delinquency.

Circumstances: Father away from home a lot. Soils under conditions of rage and excitement.

Reason for referral: ? further treatment? placement.

TABLE 8

*The observational Process**the first contact*

Comes armed with gun and dagger. "I am a cop." "Who are you going to shoot?" "The bad guys." "Who is the bad guy?" "Me."

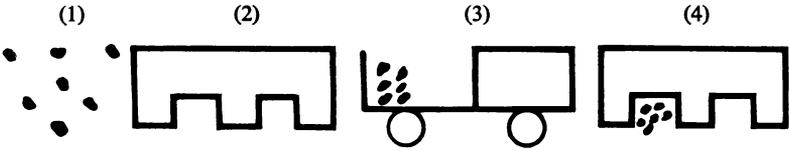


Accepts plasticine without thanks. Makes an airplane "to bring people from across the ocean." (Shy smile.) Then works seriously and ignores O.

TABLE 9

The observational Process

Category "A"

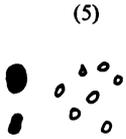


Makes small plasticine balls.

Builds grocery store. Game idea emerges. Assigns roles.

As truck driver delivers needs to grocer (O).

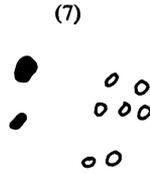
Dumps nuts in store but refuses payment.



Makes nut family mother and baby nut and brother nuts. "Whose brothers are they?" "My mother's brothers." "You mean *uncles*."



Turns pale and sways as if faint. Leaves room for toilet. Play disruption.



"This is the way I feel when I soil." "Who are your mother's brothers?" "Me."

TABLE 10

<i>The observational process</i>	
Category "B"	
(1) Effect: Immediate interest in plasticene; takes possession without thanks.	(2) Eager to involve O in game and make contact.
(5) Interest in nut family affairs. Some implication brings about play disruption.	(6) Anxiety attack followed by defecation.
	(3) Desire to give O something.
	(4) Wants nothing in return.
	(7) What is the dangerous implication of the fantasy?

TABLE 11

<i>The observational process</i>		
Category "B"		
(1)	(2)	(3)
Content: The making of the balls.	The delivery of groceries without payment.	The making of the nut family.
What is the relationship between the balls, the delivery, and the members of the family?		

TABLE 12

<i>The observational process</i>			
Category "B"			
	(1)	(2)	(3)
Spatial Relations:	Puts aside weapons and prefers balls. Ignores O.	Seeks intimate contact with O to involve him in game.	Pt. and O work together on pt.'s fantasy (microcosm).
	(4)	(5)	(6)
	Game dominated by delivery and dumping of balls.	After play disruption pt. defecates (autocosm).	Both microcosmic play and autocosmic symptom are in the <i>eliminative</i> mode. Dumping in friendliness, defecation in anxiety.

TABLE 13

<i>The observational process</i>		
Category "B"		
(1)		(2)
Expression: "Nuts" also means "crazy"—a crazy family or one in which crazy things occur.		"Me"—turning of aggression against the self, originally intended for "the bad guys". "Me"—identification with "bad uncles" who do crazy things.
	(3)	
	Who are these bad uncles who do crazy things?	

TABLE 14

<i>The observational process</i>		
Category "C"		
(F. C.)	(1)	(2)
Accepts clay like hungry man without thanks. ?airplane associated with absent father or foreign O (transference).	Pt. has reputation for opening up (especially for men) and then closing down. A retentive-eliminative problem. P. H. of punitive toilet training by mother.	Steals, withholds feces, yet eager to give O without getting. Would give father-figure but not mother? making family —homesickness.
	(3)	
Why so many brothers of different color? Why no father nut? O suspicious and questions. "Uncle" disrupts play and brings on defecation.	"Uncle" could signify outsider as temporary relative. ?lover (s) in father's absence. Anger against dirty mother who expects him to be clean.	Who are you going to shoot? <i>Me</i> . Who are mother's brothers? <i>Me</i> . Pt. victim in both cases of mother's secret infidelity. Thus conscious factor blocks access to pt.'s confidence.

TABLE 15

<i>The observational process</i>		
Category "D"		
(1)	(2)	(3)
<i>Symbols</i>	<i>First defense</i>	<i>Failure of defense</i>
Balls = feces	Uses play offered by O	Defense fails when pt.
Balls = family members	to substitute delivery of	unconsciously gives hint
Difference in number and	groceries for delivery of	with the making of the
color signify traumatic	secret.	nut family.
family constellation.		
(4)	(5)	(6)
<i>Second defense</i>	<i>Failure of defense</i>	<i>Nuclear conflict</i>
Falls back on more usual	Eliminative anger re-	Between eliminative and
defense of closing up and	turns to original anger	retentive modes gets the
retaining.	and he defecates.	better of him through his
		masochistic tendency to
		express emotions in reg-
		ressive and punishment
		provoking way.

TABLE 16

<i>The observational process</i>
Category "E"
<i>Confirmation:</i> The patient's mother confesses to O that there were certain episodes she had urged patient not to tell the doctors about and had added, "Daddy will surely kill me if he heard about it." She then released patient from the promise of secrecy that had blocked previous therapeutic efforts.

A TEN-COLUMN ANALYSIS OF A BEDROOM GAME

In Table 17, the observational process is schematized with greater elaboration. In attempting to combine the advantages of the previous observational schedules, the danger has cropped up of missing the wood for the trees. This is not as bad as I make it sound, since the main elaborations have to do with the initial and final phases, the intermediate column being fairly similar to those of Freud and Erikson.

TABLE 17. THE OBSERVATION PROCESS
(10 columns)

Column 1	Column 2	Column 3	Column 4	Column 5
Psychology of observer Pre-ontological knowledge Visual capacity Observer bias "Imaginary" observers	Background "case history" Pre-observation data	Behavioral item "the situation" The disinterested spectator Objectivistic reduction "between brackets" Instrumental or pointer reading	Morphoanalysis of manifest Effect, Content Expression Movement	Phenomenology The understanding witness Existential Experience Subjective Intuitive Empathy Sympathy Apperception
Column 6	Column 7	Column 8	Column 9	Column 10
Interpretative manifest into latent Symbolic meaning Theory making	Confirmation by reaction of observed one Interplay of observer and observed	Confirmation from other observers Observer agreement Observer training Corrective Perceptual Experience	Confirmation by replication of observation Storage of observation (memory and record)	Confirmation by self-observation of subject Inter-subject agreements

Column 1 takes into account the whole background and development of the observer, which, as previously suggested, we have regarded as crucial to the act of observation, although observers of genius, like Freud and Erikson, have paid little attention to it. The idiosyncratic "frame of reference" or the spectacles through which the observer looks develops long before he becomes a scientific observer.

Column 2 has to do with what Erikson calls the "pre-contact", but we have extended it into a case history. There is a suggestion here that the previous life of the observed individual or individuals converge logically to this moment in time when the behavior under observation takes place. (The device was employed in a literary way by Sartre in his imaginary biography of Genet.)

In column 3, the observer is trained to record objectively exactly what he sees and to put everything else that occurs within himself "between brackets". This is then a photographic procedure; by means of the "objectivistic reduction", the environment is reduced to a set of objects, and the temporal and spatial arrangements of the object within the environment are described as factually as possible. At this point, our "disinterested spectator" suspends all judgment. The morphoanalysis that takes place in column 4 is still concerned with the everyday, bread-and-butter world, which, however, is seen piecemeal. In column 5, the feelings and reactions and experiences of the observer as present in his sympathy, empathy, and intuition, are allowed to intrude for the first time at the same time being recognized for what they are—subjective, experiential, and existential. By means of the phenomenological analysis, the observer becomes sensitive to his own responses and attentive to himself as an instrument of observation that requires as much understanding as the external events.

By the time he has got to column 6, the observer is sufficiently at home with the situation and himself to begin to concern himself more cognitively with the latent content that he theoretically believes to lie behind the manifest expressions. This is the column in which symbols are interpreted, defenses analysed, and theories fabricated.

Columns 7 to 10 are missing in the previous schedules and are concerned with confirmation which may be obtained through the observer repeating the observation, through agreement among several observers, through the behavioral reactions of the individual under observation, and finally through self-observational reports on the part of the subject. The objectivists view this last column with strong disfavor, regrading it as the acme of subjectivism. They feel that the subject who organizes the experience cannot be at the same time the object of this experience, since the experience is required, according to their standards, to pass through the filter of a scientific apparatus (the system of concepts, models, instruments and the rules governing their use, the research techniques and the methods of interpretation and control made use of by the scientific observer) if it hopes to qualify

as a scientific experience. Wundt (1908) felt that "so-called self-observation may be presented as observation only with certain essential restrictions, and it cannot at all lay claim to an exactness". Bertrand Russell (1921) also considers it exceedingly fallible as a scientific report but is not altogether prepared to reject it out of hand. He likens it to the report of a short-sighted person who is watching someone coming along the road at the moment when he is firmly convinced that Jones is sure to come. If everybody was short-sighted and obsessed with the beliefs as to what was going to be visible, we might have to make the best of such testimony, says Russell, but we should still need to correct its errors by taking care to collect simultaneous evidence from people with the most divergent expectations. No two observers are ever going to experience the observational act of the same situation in exactly the same way, but a fair degree of approximation can be expected. Like Zener, he concludes that privacy of the experiential phenomena does not by itself make datum unamenable to scientific treatment and, in his opinion, simultaneous observations by two observers who show good interobserver reliability may be the best we can do about this matter.

In the following play situation, a seven-year-old girl is observed in play by a participant observer and by two-non-participant observers behind a one-way screen. Observational reports were obtained from the girl and three observers. Those of the non-participant observers were simultaneously recorded and those of the subject and participant observer were obtained immediately following the period of observation. A week later these four individuals were asked to recall their observations.

Participant Observer's Report

She played with the doll family in a bedroom scene. When the parents and the girl were in their beds, the little girl screamed and the *father* doll was brought in to see her. The little girl thought he was a burglar and that he was going to kill her. Then he turns into her father *and kisses her*. She's no longer afraid. I said: "The little girl wants to get the daddy away from the mommy's bed into her bed. Perhaps she thinks something's been happening in their bed, and she wants to stop it." Patient gets very angry and throws the girl figure into my face. I tell her that she is free to say anything she wants to say but that I could not allow her to hurt me as this would make her feel so bad that she might not get the hurt out of her.

Non-participant Observer's (1) Report

The father doll and the mother doll are put to bed close together. Then the little girl doll goes to bed. She screams and the father doll comes running and *lies down* on the girl's bed. The situation is confused because the girl doll begins calling him a burglar and says he is trying to kill her. They struggle together. He then turns into her father again at some point, and the little girl and the father occupy the same bed. The therapist tells the

patient that the little girl is trying to keep the father doll away from the mother doll *so that they can't do bad things together*. The patient throws a doll at the therapist hitting him. *He looks angry and tells her angrily* that she must not try to hurt him.

Non-participant Observer's (2) Report

The parent dolls are put to bed in one room and the child doll in another. After a while, the girl screams and the father comes in and *sits down* on the girl's bed. She mistakes him for a burglar and thinks he is trying to kill her. He kisses her, and she then recognizes him as her father. He stays with her until she falls asleep again. *He then returns to the parents' bed*. The therapist interprets that the girl is trying to separate the parents because of what she imagines is taking place in their bed. This makes the patient very angry, and she throws a child figure at him. *He remains imperturbable* and says to her that in therapy it was better to talk things out than actually do them.

Subject's Report

I played with the dolls. There was a daddy doll, and a child doll and—oh yes, a mommy doll. I was leaving her out. (*What happened?*) The girl doll was afraid that something bad was going to happen to her, so she screamed. (*And what happened then?*) Her mommy came and made everything all right, and she went to sleep. (*What else happened?*) Nothing happened any more. (*What happened about me?*) You got angry. (*Why?*) You didn't like the story I made up.

A week later.

Participant Observer's Report

A primal scene in which an attempt to interpret oedipal feelings was followed by much anger. She threw one of the dolls at me. (When questioned.) "I was taken aback by the incident, but I don't recall being angry myself; at least as far as I can remember, the session ended well."

Non-participant Observer's (1) Report

A bedroom scene. The parents were separated by the child's disturbance. The patient was upset by the therapist's deep-going interpretation and attacked him. He got angry and reprimanded her. *She was frightened by this development and withdrew from further play*.

Non-participant Observer's (2) Report

The girl doll interfered with the parents at bedtime, getting father away from mother. In her guilt over this, the girl pretended he was a burglar and was attacking her. When she recognizes him, *she returns him to the mother* to relieve her guilt. She was upset by the interpretation given along this line and threw something at the therapist (can't recall what).

Subject's Report. (Do you remember what we did last week?)

Yes, we had lots of fun playing mommys and daddys. (*What happened?*) I can't remember. (*Try?*) . . . oh, yes, you got angry with me. (*What happened then?*) You hit me, I think. (*Are you sure?*) It was a sort of accident, I think. You didn't mean to . . .

It will be noted that the girl defended herself against her oedipal strivings by substituting the mother for the father in her observational report. Her anger at the participant observer for his interpretation was transformed into his anger at her on the grounds that he did not like her story. A week later, she could only recall his anger at her, developed into an attack on her. Unable to tolerate this idea completely in this form, she suggested that it could have been "accidental."

The participant observer could not remember any anger in himself but admitted to having been "taken aback" by the attack. He also had the burglar transformed back into the father before the kiss is given to the girl, and he declared that the reported sequence was not "acceptable" to him. None of the others could recall the lengthy explanation he thought he had given to the girl. This may have been present in his mind at the time but unspoken. At the end of a week, he was still certain that there had been no anger, and thought that the rest of the session had gone smoothly.

The first non-participant observer appeared, by comparison, to have laid undue stress on the sensual aspects of the story. He did this quite consistently. The parents were "close together" in the bed; the burglar "lies down" on the bed with the girl; and after the transformation of the burglar back into the father, the little girl and her father are reported to have "occupied the same bed". The record also has the participant observer interpreting to the girl that her wish to separate the father from the mother was to prevent them from doing "bad" things together. Like the patient, he observed the participant observer to be angry and of using an angry tone of voice. A week later he recalled this in terms of the participant observer reprimanding the patient and frightening her to such an extent that she withdrew from him for the rest of the session.

The second non-participating observer's record correspond somewhat closely to that of the participant observer. In this context, it was of note that both were psychiatrists and that the non-participant observer was a subordinate with a great deal of respect and admiration for his senior whom he regarded as his teacher, whereas the first observer was often rebellious and resentful of the "authoritarianism" of the participant observer. In his description he has the father "sit down" on the bed. Only after the girl has kissed the burglar does she recognize him for her father. This was the only report that chronicled the return of the father to the mother's bed and interpreted the event in terms of guilt. He witnessed no anger in the participant observer and persisted with this view after a week, picturing the

response (? admirably) as "imperturbable". Unlike his fellow judge, he felt that the rest of the session went better as a result of the interpretation given.

The illustration highlights the difficulties connected with the process of observation. It would seem that even the relationship between the observer and the observed has a crucial effect on what is observed. It might, therefore, be important to include a comment on the relationship in any observational report. With respect to the alleged anger that was manifested in the situation, the final verdict is very much two against two. In this context, even a deciding vote of a fifth observer would leave us in doubt, although a multiplicity of observers might eventually resolve the question on a statistical basis. It is still doubtful, however, whether the existence of numerical superiority would be sufficiently convincing or conclusive.

A FINAL COMMENT

We have reserved a final comment from the distinguished biologist and paleontologist who has also looked at the problem of observation in his own inimitably comprehensive manner. Father de Chardin (1959) talks of the need to develop a "deeper vision" and feels that in order to do so we must "focus our eyes correctly" in a metaphorical sense.

"From the dawn of his existence, man has been held up as a spectacle to himself. Indeed for tens of centuries he has looked at nothing but himself. Yet he has only just begun to take a scientific view of his own significance in the physical world. There is no need to be surprised at this slow awakening. It often happens that what stares us in the face is the most difficult to perceive. The child has to learn how to separate out the images which assail the newly opened retina. For man to discover man and take his measure, a whole series of senses are necessary, whose gradual acquisition covers and punctuates the whole history of the struggles of the mind." The senses that de Chardin mentions as important for this "deeper vision" are a sense of space and the objects that inhabit it, a sense of depth and a sense of time, a sense of number and a sense of proportion, a sense of quality and a sense of movement, and, lastly, a sense of the organic wholeness of the observational scene.

He goes on to say: "Subjectively, first of all, we are inevitably the focus of our own observation. In its early, naïve stage, science, perhaps inevitably, imagined that we could observe things in themselves, and they would behave in our absence. Instinctively physicists and naturalists went to work as though they could look down from a great height upon a world which their consciousness would penetrate without being submitted to it or changing it. They are now beginning to realize that even the most objective of the observations are steeped in the conventions they adopted at the outset and by the forms or habits of thought developed in the course of their research;

so that, when they reach the end of their analyses, they can't tell with any certainty whether the structure they have made is the essence of the matter they are studying or the reflection of their own thought. And at the same time, they realize that because of the return shock of their discoveries, they are committed body and soul to the network of relationships they fought to cast upon things from outside: in fact, they are caught in their own net. A geologist would use the words metamorphism and endomorphism. Object and subject marry and mutually transform each other in the act of knowledge; and from now on, man, willy nilly, finds his own image stamped on all he looks at. This is indeed a form of bondage."

How then can we escape from this human bondage. De Chardin has this to say about it, and it could not have been said with more telling force: "It is tiresome and even humbling for the observer to be thus fettered, to be obliged to carry with him everywhere the center of the landscape he is crossing. But what happens when chance directs his step to a point of vantage (a crossroads or intersecting valleys) from which not only his vision but things themselves radiate? *In that event the subjective viewpoint coincides with the way things are distributed objectively, and perception reaches its apogee. The landscape lights up and yields its secrets. He sees.*"

This, says Pierre Teilhard de Chardin, is "the privilege of man's knowledge".

This says everything that I have been attempting to say in this presentation. In our observations, we must try to encompass the subjective and objective viewpoints. Every now and then (and here we can recall Freud's observation of the little boy's game and Erikson's observations of the little boy's secret) the two viewpoints will coincide, and the landscape will light up, and we shall suddenly see and know. It is a moment worth working for.

REFERENCES

- BEHRENS, M. and SHERMAN, A. (1959) Observational research with emotionally disturbed children; session 1. Observations of family interaction in the home. *Amer. J. Ortho.* **29**, 243-248.
- BELLER, E. K. (1959) Observational research with emotionally disturbed children: session 2. Direct and inferential observation in the study of children. *Amer. J. Ortho.* **29**, 560-573.
- BRUNSWIK, E. (1956) *Perception and the Representative Design of Psychological Experiments*. Berkeley. University of California Press.
- CHARDIN, P. T. de. (1959) *The Phenomenon of Man*. New York. Harper and Brothers.
- EDDINGTON, A. S. (1949) *The Philosophy of Physical Science*. Cambridge.
- ERIKSON, E. 1940. Studies in the interpretation of play. *Gen. Psychol. Monographs.* **22**.
- FARBER, L. H. and FISHER, C. (1943) An experimental approach to dream psychology through the use of hypnosis. *Psychoanal. Q.* **12**, 2.
- FREUD, S. (1920) Beyond the pleasure principle. In: *The Complete Psychological Works of Sigmund Freud.* **18**, 1957. London, Hogarth Press.
- GOODRICH, D. W. (1959) Observational research with emotionally disturbed children: session 1. The choice of situation for observational studies of children. *Amer. J. Ortho.* **29**, 227-234.

- HAEBERLE, A. W. (1959) Observational research with emotionally disturbed children: session 2. Quantification of observational data in various stages of research. *Amer. J. Ortho.* **29**, 583-589.
- HUSSERL, E. (1950) *Cartesianische Meditationen und Pariser Vorträge*. Ed. by S. Strasser. The Hague.
- JAMES, W. (1890) *The Principles of Psychology*. New York, Holt and Company.
- JEANSON, F. n.d. *La Phenomenologie*. Paris.
- KIERKEGAARD, S. (1946) The task of becoming subjective. In: *A Kierkegaard Anthology*. New York, Modern Library.
- KLUCKHOHN, C. (1949) *Mirror for Man*. New York.
- KOHLER, W. (1947) *Gestalt Psychology*. New York, Liveright.
- LAWRENCE, D. H. (1932) *Letters of D. H. Lawrence*. New York, Viking Press.
- LOOMIS, E. A., Jr. and MEYER, L. R. (1959) Observational research with emotionally disturbed children: session 2. Observation and recording — a simultaneous process. *Amer. J. Ortho.* **29**, 574-582.
- LUNDBERG, G. A. (1956) *Science and Human Behavior*, 3rd edition. New York.
- MACLIVER. In: S. Strasser. (1963) *Phenomenology and the Human Sciences*. Pittsburgh. Duquesne University Press.
- MILLER, L. C. (1964) Q-sort agreement among observers of children. *Amer. J. Ortho.* **34**, 71-75.
- MOSS, H. A. (1964). Methodological issues in studying mother-infant interaction. Presented at annual meeting of Amer. Ortho. Assn., Chicago. Panel under chairmanship of E. J. Anthony, M. D.
- PIAGET, J., and INHELDER, B. (1956) *The Child's Conception of Space*. London, Routledge & Kegan Paul.
- POPPER, K. R. (1960) *The Logic of Scientific Discovery*. 2nd ed. London.
- PRALL, R. C. (1959) Observational research with emotionally disturbed children: session 1. Introduction. *Amer. J. Ortho.* **29**, 223-226.
- ROBBE-GRILLET, A. (1960) *In the Labyrinth*. New York, Grove Press.
- RUSSELL, B. (1921) *The Analysis of Mind*. London, George Allen and Unwin.
- SARTRE, J. P. (1950) *L'Être et le Néant*. 36th ed. Paris.
- SHAKOW, D. (1959) Research in child development: a case illustration of the psychologist's dilemma. *Amer. J. Ortho.* **29**, 45-59.
- SHAPIRO, M. I. (1964) The teaching of observational skills in child psychiatry. (Accepted for publication 1964 in *Amer. J. Ortho.*)
- SROLE, L. (1962) *Mental Health in the Metropolis*. New York, McGraw Hill.
- STRASSER, S. (1963) *Phenomenology and the Human Sciences*. Pittsburgh, Duquesne University Press.
- THOMAS, A., BIRCH, H., and CHESS, S. (1963) *Behavioral Individuality in Early Childhood*. New York University Press.
- TOLMAN, E. C. (1936) An Operational Analysis of Demands. *Erkenntnis*, vol. 6, p. 390.
- WENAR, C. *The Executive Competence of the Infant*. (In press)
- WUNDT, W. (1908) *Grundzüge der physiologischen Psychologie*, vol. 1. 6th ed. Leipzig. Translated as: *Principles of Physiological Psychology*. 1904, New York.
- ZENER, K. and GAFFRON, M. (1962) Perceptual experience: an analysis of its relations to the external world through internal processings. In: *Psychology: A Study of Science*, vol. 4. Ed. by S. Koch. New York. McGraw-Hill.

CHAPTER 7

The Psycho-diagnostic Approach to Problems of the Very Young

by RUTH GRIFFITHS

INTRODUCTION

Workers in the field of Child Psychiatry have for many years been familiar with the use of mental test procedures as part of the basic investigation necessary where a problem exists among children of school age and among adolescents. Mental tests of many kinds have been used in investigations of the psychiatric problems of adults, also for large-scale surveys in education, in industry, in commerce, in the Services and in numerous social and anthropological studies.

Mental tests for the very young, that is for babies and very young children from the beginning of post-natal life, began to be used several decades ago mainly in America and largely for studies of normal infant development. These tests were to some extent the outcome of that earlier fashionable trend in which extensive day-by-day records or protocols were accumulated (and still are being accumulated) in a semi-scientific, semi-popular way by innumerable people. This trend took place side by side with many genuine studies and tended to obscure their value.

One of the earliest successful attempts at a truly scientific scale of tests was that of Mary Shirley and her colleagues and, soon afterwards, in the 1920's, the late Professor Arnold Gesell began his long series of researches into the early development of both normal and abnormal children and produced his well-known developmental tests. His test procedures have been extensively used, not only in America but also in many other countries. Probably his most valuable scientific contribution was the stress, repeated in different ways in numerous publications, that he placed on the normal developmental *sequences* and their importance in assessing normality in the infant. This development in the early phases he regarded as an interweaving of many developmental trends or processes taking place in the total developing organism. Problems arise when any of these developmental trends are hindered or prevented in special cases.

The experience of two world wars, of years of social unrest, the mass movements of populations, and our present awareness of hunger, malnutrition and deprivation suffered by the very young in many parts of the world, have surely brought home to us all the importance and significance of early investigation, prevention and treatment of the ills of infancy that can be so far-reaching and damaging in their effects. This realization is vital for the future of mankind. The suffering of innumerable children through malnutrition and every kind of deprivation cannot but do untold harm that will have repercussions on the future development of mankind and which therefore intimately concerns us all. Organizations exist that endeavour to relieve actual physical hardship, and these are of course primary and fundamental. It will be, however, only through an intimate understanding of the mental as well as the physical needs of little children and of the nature of mental suffering in childhood—and its after-effects—that truly comprehensive therapeutic measures can be undertaken. Here in Britain itself today, though we may not see much actual neglect or malnutrition when compared with other parts of the world, we yet have extensive problems of mental retardation, of special sense disorders, of cerebral palsy and other crippling conditions, of metabolic disorders such as phenylketonuria, and the grave effects of emotional deprivation and maladjustment.

To help in all these problems, a basic programme is necessary, beginning with the earliest possible investigation of mental status in the very young, and here the psychiatric team, in collaboration with other specialists, can and must contribute to a total diagnostic picture, beginning with the first year of life.

It would now appear obvious that very early ascertainment of mental status in the young child can provide a basic knowledge, in individual cases, of great value, especially where some deviation from the normal is suspected—sometimes as part of, sometimes as preliminary to, other investigations and to the planning of treatment whenever such may be indicated. How can this be done with babies and very young children?

GRIFFITHS MENTAL DEVELOPMENT SCALE

The method of which the early stages are already described elsewhere† and to which further reference is made below is intended for use (and indeed is now being used quite widely in this country and abroad) in investigations and clinical work with children from the very beginning of life. It is virtually a complete “clinical” investigation from the psychological and psychiatric approach, for it covers all the significant sequences of development (or, as I prefer to call them, the “avenues of learning”) that can be observed in the reactions of the child to individual test items and in the child’s general

† R. Griffiths (1954) *The Abilities of Babies*, University of London Press.

behaviour, demeanour and activities. The numerous items systematically applied can, if responses are carefully observed and recorded, provide information to precede or supplement the medical observations of the paediatrician, and so complete the physical with the mental examination. In many instances the paediatrician or medical officer may prefer to use this technique himself to supplement his observations. Alternatively, the psychologist will provide a full report of his findings including a "profile" based on the five sub-scales of the test, showing the successes or failures of the child in relation to one another and indicating the main *channels* of mental development that may be affected by the disability, and also the *extent* to which these channels may be affected and even eliminated by the disability, thus leaving the paediatrician to arrive at a final diagnosis. In this way, psychology has a contribution to make to diagnosis even at a very early stage in the infant's life, as I hope to show below.

But the psychologist's task does not necessarily end with this detailed examination and report of a special case. When the nature of the ailment, disturbance, disability or defect has been diagnosed, and treatment or other measure is contemplated or instituted, a "*follow-up*" study is advisable so that the child can be under psychological as well as medical observation and changes in his mental condition can be recorded. This principle has already been accepted and is being applied in a number of investigations.

In some cases a *total* change takes place, as for example with successful application of the special protein-free diet in cases of *phenylketonuria*. The general quotient rises in a manner such that little change takes place in the *shape* of the profile. Mental energy appears to be released that has an over-all influence rather than showing any specific effect on any particular sub-scale.

On the other hand, however, as in cases of *deafness* after full investigation at an audiology unit has been made and a hearing aid has been successfully fitted and accepted by the child, and when the relevant care and therapy have been provided, there can be observed not only a change in the child's condition affecting the general or total level of development but also a definite, sometimes startling, change in the *shape* of the profile, as—the hearing being assisted by the hearing aid—speech develops and the child passes tests previously failed on the Hearing and Speech Scale. Thus, on re-examination, the shape of the profile, as well as the general level of mental development, shows a change for the better, as the trough in the profile at Scale C (the Hearing and Speech Scale) is gradually built up.

Follow-up studies systematically carried out over a period of time will reveal the progress rate (or P.R.) in any particular case, which may in many instances be more significant for the child's future than the actual G. Q. (General Quotient = General Intelligence Quotient or Total Quotient).

Naturally, the earlier a child can be seen and his problem thoroughly investigated, the sooner an appropriate programme of treatment and/or

rehabilitation can be instituted. For example, in suitable cases, babies are today being fitted with hearing aids before the end of their first year!

This raises the whole question of the method of mental testing and the reliability of results. Considerable doubt has been thrown in the past on the possibility of obtaining accurate or reliable mental test results in investigations of infants. There were several reasons for this.

As mentioned above, a good deal of gathering of material by non-professional and untrained people has occurred, and mental tests for babies were in other countries used very widely and uncritically by organizations dealing with children, the testing not always being in the hands of people trained in the methods. Tests were also popularized to an unwarranted extent, and published irresponsibly by popular magazines. It came to be thought that mental assessment in this early period was a simple matter that parents, nurses and others might undertake. This had dire results as, of course, subsequent tests of infants did not usually give similar results or show expected constancy under such circumstances, or have any predictive value.

For a time, the testing of very young subjects fell into disrepute and, even at the present time (when a number of good scales are in use) there are many psychologists and paediatricians who regard the accurate testing of babies as an impossibility and are sceptical of its value. It is to be hoped that, as much recent work gradually gets published, we shall be in a position to prove the usefulness and reliability of early psycho-diagnosis and so dispel the doubts still held in some quarters.

Apart from matters associated with test construction, accuracy depends almost entirely on the way the tests are applied, and on the careful study and following of procedures; above all, on the *completeness* of the examination. The would-be Examiner (no matter what his training or experience with older subjects may have been) needs to acquire skill not only in the application of the test items themselves but in knowing just how to observe the infant, to stimulate him to respond, keep the *rapport* favourable between examiner, mother and child, and systematically record the observations made.

A sort of sixth sense has to be developed that enables the Examiner, in spite of the complexity of the situation, to train himself to hear, pick up and record *every* vocal sound made by the baby during the interview, noting these sounds, syllables or clear words in the space provided on the record form. After some practice, this recording of the heard speech of the child becomes automatic. It should not be necessary to appeal to the mother concerning the speech sounds that the normal baby can make, unless the child is absolutely silent (a rare phenomenon!). The mother may, however, be asked to play with or talk to her baby, to get him to respond vocally, if he has not responded vocally to the Examiner; and she may be invited to add, to the pre-speech vocabulary recorded by the Examiner, sounds the

child habitually uses at home. It is, however, most important to hear and record speech sounds made during the examination itself. A silent baby may be a deaf baby.

The Examiner also needs to know the normal development for this period of life so completely that he cannot fail to recognize abnormal physical movements or vocal sounds or other phenomena that might well be important in the diagnosis. He needs to understand the differences between (for example) the responses of the baby who is below normal in all his reactions and likely to be of slow development in the future from one who has a specific disability which might respond to treatment, and both of these from the premature child who is developing slowly because he is virtually younger and more fragile than other babies of his chronological age but will in time (if the situation is uncomplicated) catch up to his own potential. The problems met with are almost unlimited and as varied as human growth itself, and they are continually complicated by the many ills that babyhood is heir to.

Only a *complete* test should be used in any investigation of infants. If the baby is sleepy, or unhappy with weeping, or ill, or frightened, the test should not be regarded as usable in research or for adequate diagnosis. A child's *maximum* effort is necessary, and it requires skill on the part of the Examiner to obtain this. Anything less, however, does the child an injustice. Considerable skill and much practice, with a flair for acute observation of responses, are needed for this kind of work. It should certainly only be undertaken by those who, already trained and experienced in other types of testing, are also willing to make a thorough study of infant psychology and infant testing. This is surely the least to be asked, for the child's sake and for measures that might at some time be undertaken.

Some criticism has been offered of baby tests because the items are planned in sequences, more difficult tests being broken down into their components, to provide a "ladder" up which the child climbs, from rung to rung, as he learns. The whole of the locomotor series can be seen to contain only three or four interwoven sequences. So also it is with speech: the tests follow the normal development from open vowels, imperfectly made, to consonants made separately, these being quite soon combined into syllables and so to a richer babble developing into true speech. Again the whole is a sequence representing the gradual acquisition of spoken language, resting back definitely on the child's capacity to hear, to listen, soon to understand, and in due course to reproduce sounds and words.

Some examiners find the performance series in the second year of some difficulty. This may be due to either or both of two factors. (1) We must not ask too much of the child. Each separate item of the form-board series of Scale E (Performance) represents a new skill usually a month or more (in terms of Mental Age) above the previous one. The child is not penalized if he can go no further. A refusal is, in the vast majority of cases, due to the

child's realization that he cannot do the test. The three-hole board is not expected until near the end of the second year, which coincides with its placing in other scales. (2) A "play way" is needed here (and indeed throughout the examination) which the successful examiner soon acquires. The round hole is a "window" to be shut, or the square inset is a "door", etc. A swift change to a test which the child enjoys more preserves the rapport, and a return can be made later to complete an unfinished item, or give the child the second attempt allowed.

The *requirements* of a suitable test for the purposes outlined above are, therefore,

(1) a detailed schedule of test items covering the whole range of infant learning and mental development;

(2) careful standardization on fairly large representative samples of the infant population. The Griffiths Scale was standardized on representative samples of 571 babies, a few of whom had a second test included, making the total tests used 604, for the two years. These numbers are large and quite adequate for the purpose. Much depends on the age-range of groupings for different purposes. The average number was 24 in each month, when working on equality of difficulty, and will be 70 when taken in *two-monthly* groupings as in more recent studies. More data has been added to the original material, and the most recent British census has been used for the necessary parental occupations study. The totals for these two years: 425 in the first year (average number 71 in each two-months group) and 436 in the second year (average 72 in each two-months group), are more than adequate. Only slight modification of the original scales for these two years has been found necessary and this has been undertaken mainly to simplify the scoring.

(3) a classification giving equality of difficulty in the sub-scales, thus providing a useful "profile" and, together with this therefore, what I have called elsewhere a "differential diagnosis of mental status";

(4) test-retest correlations for reliability studies of normal children for predictive value of the test and its use for both normal and handicapped children of all groups, with follow-up studies. The test-retest correlation for sixty babies was: $r = 0.87$ (See *The Abilities of Babies*, p. 76).

In passing, one must express an opinion in regard to the practice of re-testing babies on successive days for day-by-day variations in a child's performance. Such a procedure would appear certain of failure, if high positive correlations are looked for. In the first place, the "practice effect" would be at a maximum with the brighter babies. Children who did not respond well on the first occasion might refuse certain items on the second day for emotional reasons. Altogether, it does not surprise one that low correlations between such tests were obtained in a number of studies. A good spacing of tests would be six weeks with the youngest babies, 3 to 6 months with older babies. This would ensure that, in a proportion of the test items, new

ground would be broken, in that—because of the child's increased age—items would be taken that were not taken on the earlier occasion.

THE METHOD

As already indicated, mental assessment of the very young must rest back— if it is to be valid—on normal child development. A valid test must follow the lines of normal growth and learning. For this, detailed and reliable norms are necessary. Therefore the primary task of the research psychologist working in this field is *psychometric* and involves establishing these norms for a very large number of detailed items that follow the normal trends.

Thus, although the object of establishing diagnostic tests may be to try to find answers to innumerable developmental problems of a-typical children (in other words, to provide this "differential diagnosis of mental status" to help our understanding of special cases), the first essential of such an investigation is a comprehensive study of *normal* babies in every aspect of their development and therefore covering a wide range of abilities, as observed in large and representative samples of the normal population.

This of course means many years of study, observation and experiment, and the laborious and time-consuming task of amassing sufficient data finally resulting in the standardization. The scales of the Griffiths test for the first two years of life embrace 260 separate items of development and follow the normal sequences. These items have next to be classified in such a way that each separate avenue of development and learning, although an integral part of the total examination, can yet be isolated for separate study. In its present form, each of the five sub-scales contains 52 test items and the sub-scales are equal in difficulty at all levels, i.e. at each *month* of age.

Such an approach alone provides a *developmental profile*, for each child examined, that can throw into relief the effects of a disability, not only on the total picture, but also upon the trends of development affected by the defect, and therefore show where, in other directions, the responses are nearer to the normal or less affected. Thus, although the investigator may be desirous of studying handicaps and their effects upon development (or rather upon the child's capacity to learn at this early stage), the first object must be to build-up and standardize a scale of tests adequate to these purposes. This has, in this case, meant many years of research into test construction itself, based on normal representative samples of the population but always with the needs of the young and handicapped in mind. These were the problems that faced me many years ago when, after trying with inadequate instruments to test young handicapped children (suffering from deafness, spasticity, mental defect, speech disorders, etc.) during and after the Second World War, I decided to make a new approach and provide a new Scale based on the needs of such children but standardized on adequate samples of the normal population. As no such scale derived from studies

of British subjects was available, it appeared essential to provide one for the use of psychologists and paediatricians both in this country and abroad.

The classification of the test items into five scales, each measuring one main developmental trend, was the next objective. It was also early realized that these scales should be *virtually equal in difficulty at each stage*, so the next consideration was to establish equality of difficulty in these sub-scales on a statistical basis. This was achieved on a basis of monthly groupings of the results, working out the average scores of the babies (numbers of test items passed) month by month in each sub-scale and aiming at equality of difficulty as a necessary condition if a child's result on any one scale was to be accurately compared with his result on the others. This means that, in assessing the results, we are now in a strong position to be able to say: "This baby did better on Scale A than on Scale B", etc. The profiles shown below will illustrate the significance of this fact of equality of the sub-scales, *based on averages*, as a necessary condition for comparison of individual test results in every individual case. These profiles will supplement information of this kind published elsewhere.†

The Sub-Scales

These will now be briefly described. They are five in number:

A. Locomotor Development

This scale traces the normal locomotor development of babies from the first to the twenty-fourth month of age, measuring from a child's first ability to lift his head from the pillow in the prone position, through all the stages of learning to roll, to sit, to crawl, to stand, to walk, etc., until, at two years of age, he arrives at jumping off steps, kicking a ball, climbing stairs and seating himself at table. Delicate children, or crippled, or spastic, premature or defective all show, in different degree, slowness or other special difficulty with this scale, and the effect of the physical condition can therefore be observed in a systematic manner, item by item, and a great deal learnt about the child under examination.

B. Personal-Social Scale

This scale calls attention to all the intimate stages of development that bring the child gradually from a condition of complete dependence upon others to one in which he has acquired some degree of self-help and has achieved a degree of emancipation in matters of feeding, dressing, cleanliness, and the companionship of other people: from the early glancing and looking at people, to smiling and co-operating in various ways, to a stage where he knows himself as a person, recognizes himself in a mirror, knows

† R. Griffiths (1954), *The Abilities of Babies*, chapters VII, VIII.









the names of parts of his body and is building up his personal "body image" and an early conception of himself as a person.

The delicate or over-dependent child does not do well on this scale; and the neglected child on the one hand, the overprotected child on the other, both show gaps or irregularities in their personal-social development as revealed in the item-by-item assessment. Thus, therefore, emotionally disturbed, socially deprived and other maladjusted children and also psychotics show serious gaps in the acquisition of these skills and in social comprehension (revealed also in their language development). Such observations are most important for our understanding of their problems.

C. *Hearing and Speech*

This scale derives in part from a study of normal speech development, including the gradual build-up of spoken language, from mere vocal sounds to definite syllables and words and babbled phrases in the first year, to clear words and finally to short sentences in the second. It also derives many of its items from observation of reactions to sounds normally heard by the baby in ordinary homely experience: the mother's voice, the sound of a bell, rustling of paper, etc. As in all the five scales, several sub-sequences are interwoven in this Hearing and Speech Scale.

Not only is the actual growth of language through these early stages of pre-speech recorded, but the response of the child himself to sounds, the developing capacity to *listen*, the interest in *music* and attempts to *sing* are all part of the hearing and speech development of the normal baby. The baby's imitative reactions are seldom immediate but are, for the most part, "delayed reactions", occurring even a day or several days after the stimulus that caught the child's attention. Immediate imitation of a new sound cannot be looked for at this early stage.

A study of this delicate process of the acquisition of speech sounds, and comprehension of meaning attached to them, is fundamental to our understanding of the situation of a child born deaf or acquiring deafness in early infancy. Probably the best kind of screening test for deafness in young babies would be through detailed observation and recording of their *vocal sounds* in the early months of life, and through observation of their awareness, or not, of the human voice—e.g. mother or father talking—with evidence of a growing capacity to listen. The deaf child cannot listen; the slow child does not; the intelligent hearing child is listening hard throughout all these early months, and he soon tries to imitate, by means of increasing babble, something of what he hears.

A child's capacity to listen, wait, and later reproduce (or try to reproduce) what he has heard is an important indication of normal mentality. The *detailed items* of this sub-scale when applied to a child can indicate, almost without fail, whether or not slowness at learning to speak is due to a hearing loss, or to a more general slowness, a specific retardation or speech defect,

or sometimes inhibition of speech due to maladjustment. Where actual mental defect is present, rather than hearing loss, slowness will also be apparent in the other scales and the profile will be quite a different shape from that of the deaf baby, where the trough is always at Scale C specifically. A silent child may be backward rather than deaf. The deaf child of normal potential intelligence will lack speech or be retarded on Scale C, but will give fairly normal responses on Scales D, E and also A.

D. Hand and Eye Co-ordination

By means of this scale (which is also applied from the earliest weeks of life), with its series of items relating to both visual behaviour and hand and arm movements, we are able gradually to observe as the babies develop the co-ordination of hand and eye in the reaching out towards the environment, and in touching, grasping and manipulating objects near them.

At first, these two functions of *looking* at things and *manipulating* them are quite un-co-ordinated. It has sometimes been said that babies do not "see" at all in the first few weeks of life. This is not a true or correct description of the position. Developed vision in the older child and adult is the result of a great deal of experience of looking at, comparing, contrasting and experimenting in the fields of vision and touch. At first, although the baby's eyes are normal, and the potentialities for development of vision are present, the child—having no previous *knowledge* of the visual world—has got literally to "learn" to see, from the beginning.

He commences his experience of the visual (as of the auditory) as it were from scratch. Very early in his life, the eyes turn towards bright objects such as a window or other light, also towards movement in the environment, and also very early towards the mother's face. A normal baby glances at objects that shine and glisten, even though to us these may not appear bright, and also towards objects that make sounds as well as movements, such as rustling paper or rattling toys. When both visual and auditory stimuli emanate from an object, the baby is irresistibly attracted. This is probably why the baby glances, and presently stares, at the mother's face; for here there are movements of eyes that glisten and smile upon him, and these are frequently accompanied by the movement of the lips and the sound of the mother's voice as she speaks softly to him. The baby will, however, turn from this interesting experience if a curtain is suddenly drawn back from a window, or if a new sound is made near him. This is perhaps the reason why it has been found so difficult to photograph a young baby looking at his mother's face.

Long before he has sufficient head balance to turn deliberately to the sound of a bell, the child will turn his *eyes* towards it, which appears generally to be an attempt to locate the sound or see the object as well as hear the sound it caused.

The development of vision in relation to the environmental experience, then, demands a capacity—even here at this early age and in an already complex situation—to recognize different stimuli (visual, auditory, etc.), to recognize the *same* stimulus when repeated, to differentiate one such stimulus from another, and to begin to respond appropriately. Technically this involves a great deal, even in a very young child. It involves: (i) simple awareness, not of an object as such but of some quality of it; (ii) a capacity to recognize this same quality again and therefore (iii) to compare and contrast one simple experience with another (relation finding).

Careful observation of a normal child's behaviour, and careful experiment, will reveal that already the complex mechanisms of logical thought are present in the making and are leading the child not merely to be aware of qualities, or aspects, or sections of an object, but to grasp some idea—through “relation finding”—of many simple objects and experiences. Presently he will come to know objects as such: a spoon, his bottle, a toy; not merely the sound it makes or its softness to his touch or its bright colour, but as a combination of all these and other visual aspects; it becomes a meaningful object. This is the development of the logical relation of “constitution”. Already in the earliest weeks of life, although the child is still a speechless, helpless infant there is evidence of the beginnings of intellectual activity that will lead the child in succeeding months not only to visual and auditory recognition but to the beginnings of learning in its truest sense.

The normal baby learns at an astounding pace; he changes in the quality of his developing comprehension almost from day to day. In the first few months of life (1) a child can follow a moving light horizontally, at first in a jerky way, then more smoothly and continuously; (2) he learns to fixate and hold an object in his gaze; (3) he can glance from one object to another and back again. As the eye muscles grow stronger and his interest in “looking” develops, he will follow a bright object such as the light of a torch or a shining mirror in a perpendicular direction and also all round in a wide circle slowly made by the moving object; later he will follow with his eyes persons moving all round a room.

But during the earliest period (up to about twelve weeks of age) the baby does not yet reach out to grasp a toy shown to him. This does not mean that he cannot grasp; he does so whenever his hands come in contact with an object: a familiar toy, the blankets, his mother's hand or dress, and so on. But that is not done by reaching for things seen. Hand movements are developing; vision is developing; but these two different functions do not begin to supplement each other in experience until the fourth month of life or later. Then true reaching for and grasping of objects takes place, and many step-by-step achievements can be observed: reaching after a dangling toy, persevering when an awkward contact drives it from him, finally catching it, then exploring its nature with hands and lips, by manipulating it and also by bringing it into contact with a surface.

Throughout the rest of the first year, the process continues, until the child reaches the interesting stages observed early in the second year, with such skills as early scribbling with a pencil, building up bricks into towers, opening and closing boxes, placing insets into simple formboards (Scale E), rolling and throwing a ball, etc. By the end of the second year the average baby can already scribble in a circle and draw a reasonable line either in a perpendicular or a horizontal direction. Hand and eye are co-ordinating and will continue to aid each other, with improving skill and precision, throughout childhood and on into adult life.

This fascinating study—for such it is—of the gradual co-ordination of hand and eye in the intelligent individual brings us up suddenly with tragic realization when we use these tests of Scale D with little cerebral palsied children or with blind babies; for these struggle to carry out the simplest movements many months after the intact child has learnt to play normally with toys and materials. The clumsy hands of little mongol babies, the unwanted movements of the athetoid, the rigid grip of a ball by the spastic child, who cannot release it at will to throw it away in play, these are the tragedies we meet in our work that should and will stimulate us not only towards ever better medical means of helping in infancy but towards ever more efficient means of training and educating the handicapped child. Research—and more research—is needed into all these problems.

E. A scale of performance tests for babies and young normal and handicapped children.

Here we can be brief, for, like the other four scales of the Infant Test, this scale has been fully described elsewhere. This scale, too, deals with hand and eye co-ordination, but it differs from Scale D in that it studies, not so much the growth of this co-ordination, but the way the child learns stage by stage to use these growing skills in the solution of the particular problems he meets with in his play and other activities.

In the second year, the performance test items approximate nearer to those used with older children. In the early stages, certain simple tasks, showing comprehension of space and form relation are included, such as: finding a toy under a cup, discovering a sweet or toy inside a closed barrel, un-wrapping a toy, etc.

The performance tests of the second year are useful, too, with blind children. There are very simple form-boards and brick-boxes. Handicapped children of all groups enjoy these tests of Scale E, but naturally do them when they are a little older—sometimes much older—than the standardization requires. The materials give the Examiner very useful opportunities for observing not merely whether a child can succeed in carrying out these tasks but just *how* he carries them out or tries to do so. Without worrying or disturbing the handicapped child, the movements of the hands can be carefully observed (sometimes a matter of great importance) and the development of the hands—thumb

opposition, awkwardness, spasticity, laterality, etc.—can be noticed and comments added to the record.

The pieces of apparatus used in all these tests have been carefully selected or specially designed to meet the needs of these youngest children in the test situation. The babies enjoy the tests. Even the most severely handicapped will respond, within the limits of his capacity, if the right approach is used. How to manage the test situation with young and severely handicapped children is part of the technique which has to be acquired, and this is not easily described apart from the presence of the subject to be tested.

It will be found that no child is too young or too severely afflicted but that a complete test can be obtained! In fact no child need be regarded as "untestable". Some children are more difficult to test than others; some are very difficult. In a few cases it may be necessary to see a child more than once to complete the examination and get a firm result.

In all this work an important feature is this opportunity to observe and note anything unusual that may be of importance in diagnosis or give a clue to something that might be helpful in treatment or education. There is so much, in testing special cases (as well as normal children), that can be usefully observed and that may be vital in extending our knowledge of these, that the Examiner can scarcely afford to take his eyes from a child throughout the examination, except to make his necessary written comments and to score the tests.

PRINCIPLES TO BE OBSERVED IN TESTING YOUNG CHILDREN

A. Consideration for the Person and Personality of the Youngest Subject

It would be of little use to try to take up this kind of testing of babies unless one had a genuine interest in, and indeed affection for, babies and little children, and experienced compassion also for their immaturity, whether normal or handicapped.

The Examiner should know intuitively when to approach a young child with a test or to apply a stimulus, and when to pause to give him time to adjust in an unusual situation. Certainly during the first part of the interview, whilst the *rapport* may be uncertain, the approach to the child should be gradual and unhurried. It is helpful to have the mother present (though this is not always possible) and to allow the mother or nurse to keep the child on her lap at least during the early part of the test. A good many of the test items can be taken quite well with the baby on the mother's lap. In fact, the Examiner should handle the child only when he or she is sure of the child's acceptance, and then as little as may be consistent with obtaining the information wanted. The very youngest babies usually accept a certain amount of handling without protest, but, even here, it is often wiser to ask the mother to move the child or change his position when that is necessary, e.g. from her lap to the divan, or to the floor, when necessary, to observe locomotor items.

Every child has a personality that develops as he grows. Some are, from the beginning, more sensitive than others. Highly intelligent babies are often the most sensitive of all, and most likely to suffer from untoward environmental circumstances. We need to remember that even at this early stage, environmental experiences begin to make impressions, with a resultant fear of, or resentment of, attention from strangers in some children. Thus the gradual approach is important; so also is a quiet, receptive manner and, in particular, keeping the voice low and avoiding any suddenness of movement or speech. The older babies, if normal and from normal backgrounds, can usually accept a natural and homely approach, and even a certain amount of play, as, for example, with the ball items, with the pulling toys, etc. No two children are alike, and we have, therefore, to learn to adjust our techniques to suit any we may meet, using ingenuity in the order of items taken and, in our general approach, keeping a happy rapport with both mother and child in being throughout the test.

B. Meticulous Accuracy of Observation by the Examiner

We have already indicated the importance of close observation of the child under examination.

There is no special "magic" in any of the test materials or test items. The most important function of the test materials is to provide opportunity for the Examiner to observe, with a degree of exactness, the way in which a child behaves in relation to persons, to situations, to materials, and so be in a position to assess his level in that particular. The whole child enters into any one interesting experience.

Things to observe are numerous; a few may be mentioned here. Physical activity—does the child give the impression of robust physical activity, or is he limp, unresponsive, slow, or resistant, etc.? Does he adjust without protest to new situations, or change easily from one activity to another? What about his general poise: is he normally alert, looking about him and taking notice, etc.? Can his attention be readily held to a task, or is he easily distracted? Does he manipulate materials with interest, or quickly lose attention or the ability to concentrate, and send everything to the floor (as is characteristic of babies in the first year)? More particularly, how does the child handle things? Does he show some experience of toys, e.g. the motorcars, the dolls, etc.? Details of actual hand development are of course listed in Scale D, and, to be sure of each of them may mean coming back again and again to offer the ball, a cube, a pellet, the cup, and so on, to give the Examiner opportunity to observe with exactness just where the child is up to in all the necessary directions for scoring, e.g. development of the hand in grasping, etc., as well as for the overall impression of the child's liveliness, friendliness, good adjustment—or the reverse of all these—that may be shown in the test situation.

C. Thoroughness and Completeness of the Examination

Every item of these scales is valid and statistically reliable; each one carries its own quota of M. A. credit. *All* the relevant items should therefore be taken or offered. As explained above, the five scales have been (with great labour) made so as to be equal in difficulty at each age-level of the test. If items are omitted for any reason, the delicate balance between the subscales is liable to be upset and the profile therefore inaccurate.

There is no special order in which the tests should be taken but none should be omitted that lie within the child's range. Refusal of an item is regarded as a failure, and we do not insist after twice attempting to get the item accepted. This point is more fully explained in the handbook. If the child is unable to respond to an item, or refuses it, that one must be failed. Refusals are almost always due to the child's own realization that he cannot succeed with this particular task. Frequently he does not understand what is wanted. Intelligent babies, even quite young ones, are sensitive enough not to wish to "fail" in a particular instance; they push the apparatus away, or cry, or otherwise show disturbance. These are recorded as failures. (See in Fig. 1 illustration of an eleven-months boy attempting, but not fully understanding, the first formboard: item E 33, passed by 50 per cent of children at the end of their thirteen month) [Fig. 1].

There is a more serious kind of omission that must be mentioned. The author is frequently asked whether it is legitimate to omit a whole scale where the child has a disability. The answer to this question is a very definite "No!" The subscale which measures a disability in a particular case is *the most important scale* to be taken for that child.

A severe disability affects to some degree every one of the scales but is, naturally, more clearly observed in the scale most relevant. We need—especially where there are specific disabilities—to know as exactly as possible what effect this handicap is having on every one of the avenues of learning and on the total result. Therefore, no help or advantage can in effect be offered to a handicapped child by omitting the evidence of his actual plight! On this will the need for treatment be decided and, when the follow-up study is undertaken, the effects of treatment itself can frequently be assessed and the child's progress observed as he gradually climbs, during a period of time, nearer to his true potential, when treatment is appropriate and has been successful. The writer feels very definitely the importance of putting on record for every child tested exactly what the findings are at the time of test. Only thus can any treatment be effectively planned and further investigation initiated. Complete and thorough tests are essential in research—and every case seen is, in effect, a small research.

D. Immediate Recording

This matter is so obvious when testing young babies on a detailed scale such as this, that it would scarcely seem necessary to refer to it, except that

there are examples in the literature of baby testing where the recommendation is made that the examination should not be interrupted to make notes and keep a young child waiting. Naturally one would leave any volume of writing or reporting until after the examination; and, of course, the scoring of the total examination would follow later. But the actual scoring of successes and failures over individual test items cannot possibly be left to the end of the examination, if such scoring is to be accurate.

The Examiner who is thoroughly used to the method might conceivably go on testing until a small group of six or even eight items as a maximum had been done. He must then break away from the child to record the results. Such pauses in the test are salutary; the intense concentration is then relieved for both baby and Examiner while these items are being recorded. Sometimes, a baby previously silent becomes reassured and begins to babble when the Examiner turns away to score some items or prepare the next piece of apparatus.

Psycho-diagnosis is an item-by-item process. Gradually, as the child's responses reveal what he can do and where any difficulties lie, the mental picture becomes clearer. Just as the strength of a chain lies in its weakest link, so is every item in every section of the test necessary for an accurate result.

E. Adequate Time

The whole examination takes a certain amount of *time*, but, if this work is worth doing, adequate time must be made available. Normal little babies do not take very long to test; a very young one under six months of age can usually be tested by an experienced examiner in about 20–30 minutes. Older babies take a little longer. Normal children in the second year may take about 40 minutes. For special cases, of course, more time must be allowed, and it is usual to allow an hour for each such examination, which should also provide enough time for some conversation with the mother and for obtaining from her the necessary background information.

F. Reporting

A report, when provided, should contain the following information: (i) The actual results of the test, that is, the total mental age arrived at and the general quotient (G. Q.) (ii) The results on each of the five sub-scales separately, whenever there is a developmental problem. (iii) A graph or histogram (if required) showing the profile.

This skeleton report should also be accompanied by a written description of the child's responses on each of the sub-scales, mentioning anything unusual that has been observed and making any other comments likely to be helpful to the psychiatrist or paediatrician for whom the report is prepared.

Thus, in Scale A, exactly what the child could and could not do would be described, showing his exact position in regard to learning to walk, and

any unusual findings would be mentioned. A further brief paragraph should be written about each of the Scales.

There would seem to be no reason why the psychologist should not end by suggesting what, in his opinion, the child might be suffering from (as indicated by the profile), and whether he might wish to see the child again after a period of time or might wish to carry out a more prolonged follow-up study.

WHAT IS AN ASSESSMENT ?

An assessment, in the psychological sense, is primarily the result of a completed psychological examination. The test result provides a figure that is the ratio between the child's C.A., i.e. his actual age as measured by time, and his so-called M. A., i.e. mental age, which is an estimate of his level of ability at the time of test. This result is described as a quotient—usually as an Intelligence Quotient (I.Q.).

In testing babies and young children, however, by a series of scales of equal difficulty, as in the method under review here, it is better described as a G.Q. or General Quotient, insofar as the examination includes tests of five different kinds, relating to five different aspects of the child's development and, although each one carries a certain intellectual element or component, each is "saturated" to a different degree with intelligence or "G". Therefore the total result is a composite of several things—a battery of several tests, each one separate and in itself a complex entity.

When, with older subjects, we measure "intelligence" (so-called) with a battery of tests, the result may be described as an estimate or assessment of a General Factor, described by the late Professor Spearman as "G" or general intelligence. It is in this sense that I adopted the term "G.Q." (general quotient) rather than I.Q. (intelligence quotient), well aware that many specific abilities are also being measured in particular by the separate sub-scales, as already described.

The profile, however, purports to set out and describe the entire range of the major abilities measured, and to show the variety of tasks included in the total assessment, and where the child succeeds or fails. This assessment, at this level, involves what I have called "a differential diagnosis of mental status".

Diagnosis as such only begins to emerge from the *assessment* when we consider this differential aspect, which can throw into relief the nature of a disability (such as deafness), where this is present, and the effect such disability is having on the general level of development. A complete diagnosis of course involves additional medical investigations which should be in the hands of the paediatrician.

A further question next arises as to what it is that the total Scale measures. This is a difficult theoretical issue. The statistician would rightly want to

investigate the various statistical components of the test, to try to arrive at the exact nature of this total G.Q. and also the more specific nature of the separate scales. This would require an extensive research in itself.

For the time being, our purposes are fully engaged in attempts, by the use of this method of examination, to discover handicaps among young children, to measure their effects upon the child's development, and try to deal with these at the earliest possible moment. Also, the tests are being extended to provide this kind of diagnostic approach for children of ages at least to the end of the seventh year. This will enable psychologists, paediatricians and medical officers to investigate by the profile technique the problems of children during the pre-school and infant school periods, and so to know, well in advance of the seventh year, which children need a follow-up study or further psychological investigations and to provide, well ahead, for those who will need special consideration in the matter of treatment or special educational provision.

We may conclude this section by suggesting that what the Scale measures is the total or general efficiency of the child at the time of test. More simply, it measures where the child is up to in his total development, in relation to other children of his exact chronological age. If, when examined at 6 months, he is in all respects like an average six-month old baby, he will have a G.Q. of 100 and we may say he is just 100 per cent. If, when examined at 10 months, he is like an eight-month old baby, his G. Q. will be 80, i.e. 80 per cent of his actual age. If, at 10 months, he is like a twelve-month old baby, his G.Q. will be 120—a very satisfactory result.

CONSTANCY OF THE I. Q.

The term "intelligence quotient" was first used by Binet and Simon, when, at the end of the nineteenth century they developed one of the first series of tests for children from three to twelve years of age, and noticed the great individual differences that undoubtedly exist among children. There are in fact no two children exactly alike in the quality of their abilities, and when these are studied in detail the differences become more obvious; the wider the range of the tests that are used, the wider the differences between the test results. These differences between children, displayed by different tests, are found also among babies, even the youngest babies. In fact, from the beginning of life, close and systematic observation brings to light the fact of the universality of individual differences as such. Each child is unique in his mental make-up and remains an individual throughout his life.

This does not necessarily mean, however, that his I.Q. will remain constant whenever he is tested, at any and every period of his life, and with tests of different kinds. This fallacy—for such it is—needs careful clarification. Theoretically, this doctrine of constancy of the I.Q. is a satisfactory assumption and quite valid when we are dealing with large numbers of

children in population surveys and other sociological studies. The so-called normal or Gaussian curve is obtained whenever large and representative samples of people are tested for any general quality. We know the exact shape this curve will take, if the work is accurate; exactly what proportion of the children will have I.Q. between 90 and 110—usually about 50 per cent, varying with the Standard Deviation of the test used; how many will be below this level and how many above. These facts would also emerge and be found to hold good if we made a study of the heights of adult men, or their weights. A great many measures applied to living things provide corroboration of these facts.

But these statistical facts remain valid only when we are considering people in the mass, when we have large representative or complete samples. When we study individuals, we discover so many exceptions to the rule, so many children whose I. Q. does not remain constant, even throughout a few years of their lives, that we have to pause and consider what this means.

The facts are that, even in large-scale studies, changes do take place within the group; one child moves up a little, another slips down a few rungs of the ladder. The larger and more representative the samples, the more accurate the curves that describe them, also the more numerous are the actual changes within them. Nonetheless, it is true that these changes, under fairly stable conditions, are least to be found where the test results cluster nearest to the average; at the lower and upper ends of the frequency distribution such changes are more frequent. A change of five points of I.Q. (that is, 5 per cent up or down the scale) is usually regarded by statisticians as non-significant. Many small changes do in fact take place in the quotients of individual children when re-examined, even when the same scale is used. Larger differences require some explanation, and children whose quotients fluctuate to a great extent should be regarded as needing further study and treated provisionally as special cases. Some disability—physical, mental or emotional—may be disturbing the progress of the child.

This brings us to the important question of the value of testing when dealing with special cases. We may concede the general validity of the constancy of the I.Q. under favourable conditions. Thus, whenever a child is already making progress in school at a normal average rate, enjoys good health, is a stable person and has no serious home worries or background problems, it is probable that his results on successive tests, with the *same scale* and by the *same examiner*, will remain fairly constant. Where a problem exists, the rule concerning constancy just does not hold.

Let us consider a few probabilities. Because of illness in a home, a young baby goes away from his own mother and the significant importance of her personal care; he is given every kind of good physical care by other kindly people. Nonetheless he suffers a degree of emotional deprivation and is unlikely to make normal progress. Such a case will be very briefly described at the end of this paper (see Fig. 2).

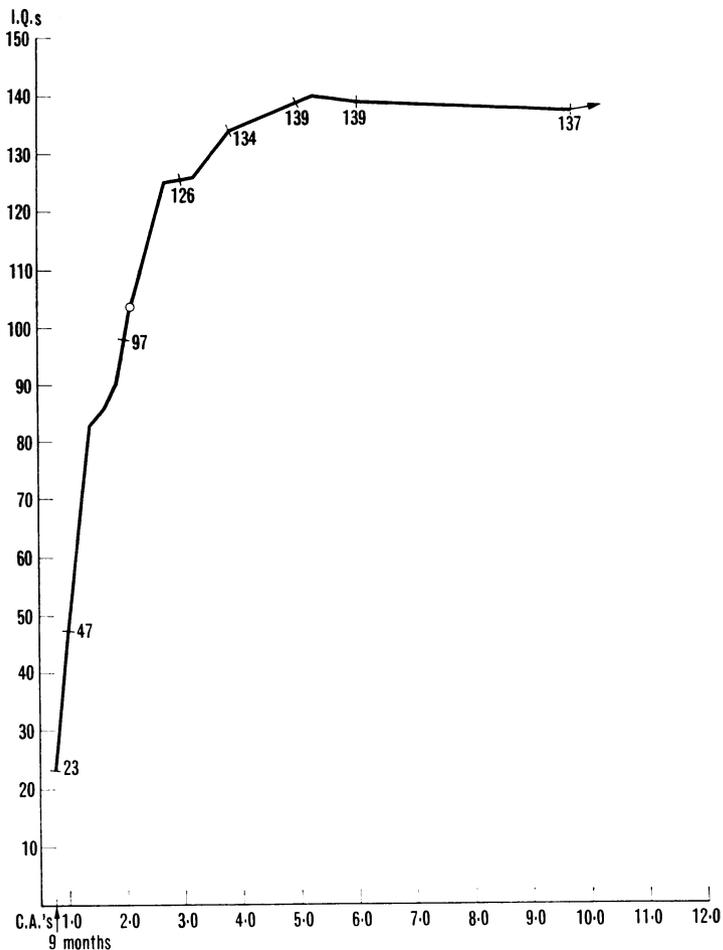
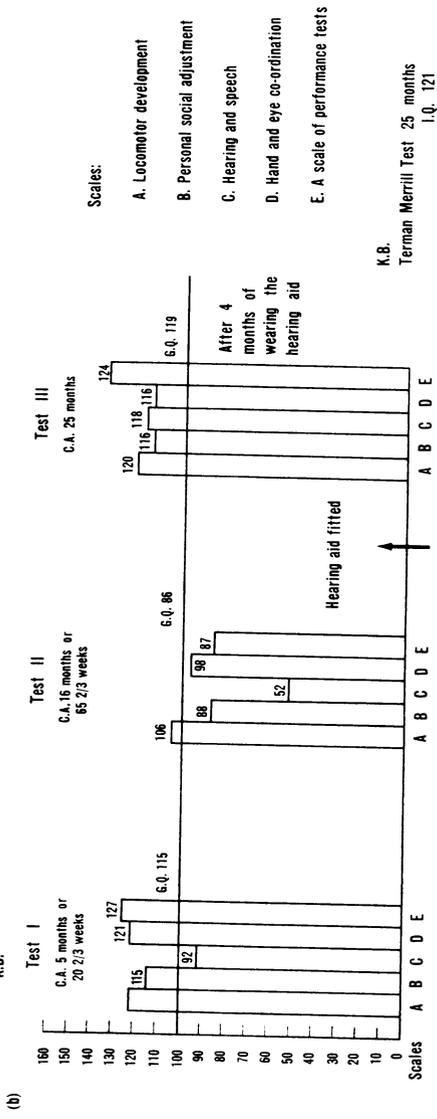
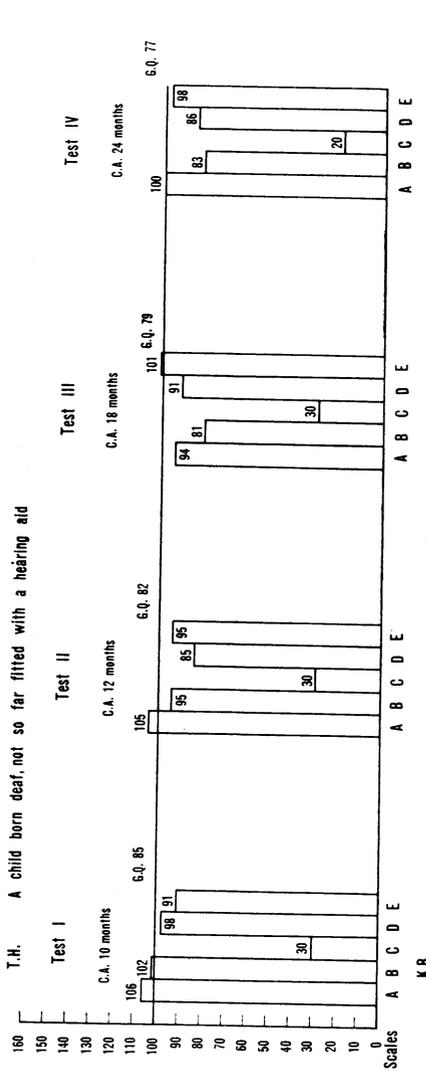


FIG. 2

A boy of eighteen months is found to have very slight speech development and consequently a low quotient in tests involving speech. On examination, he is found to be deaf. After he has had the highly technical investigation at the audiology unit, his deafness being confirmed by the otologist, he is fitted with a hearing aid. It takes some time for a young child to become accustomed to wearing a hearing aid, and the mother will need help in ways of managing the situation, therefore frequent visits to the unit will be made. After six months or so, the child's intelligence is again examined by the same profile technique as before, and it is found that his total level of ability has risen and a quite dramatic improvement has taken place in regard to speech.†

† See also follow-up studies on p. 145 Case K.B. (Fig. 3).

EFFECTS OF HEARING LOSS IN TWO INFANTS



- Scales:
- A. Locomotor development
 - B. Personal social adjustment
 - C. Hearing and speech
 - D. Hand and eye co-ordination
 - E. A scale of performance tests

K.B.
Terman Merrill Test 25 months
I.Q. 121

FIG. 3

The profile changes its shape, and the trough always found in deaf cases at Scale C (Hearing & Speech) gradually fills up, while a total improvement also takes place, involving other aspects of development.

In both these cases an understandable change takes place in the child's capacity to succeed when tested. (See profiles.) A few decades ago the general attitude of many people dealing with very backward children was one of acceptance of the backwardness (or mental defect) as a fact, an absolute circumstance, that could not change. It was said of a child: "He was born that way". Nothing could be done. Many such children went into institutions where they were cared for more or less adequately at a physical level. The idea that some improvement might, under certain circumstances, be possible was scarcely entertained. Today, we look upon defects of every kind: special sense disorders, physical conditions, metabolic disorders, emotional disturbances and even congenital conditions, as worthy of our closest observation, and researches are in progress with the object of learning more about these conditions and providing relevant treatment wherever possible.

There are still many conditions for which an answer, in the sense of specific care or improvement, is not yet forthcoming. Nonetheless, quite dramatic improvement has been obtained in children whose condition, before the last world war, would have been regarded as quite hopeless. We therefore now look for improvement under *some* circumstances. Mental tests are being used in conjunction with physical treatments to watch the progress of the children under treatment. (See, for example, the work being done on phenylketonuria.) We therefore look for and hope for a *changing* quotient in such cases, and sometimes we find this. The psychologist entering this field of special case work has in his hands the means of demonstrating mathematically and with a high degree of accuracy whether or not there is intellectual improvement, which of course may also throw light on the efficacy of the treatment and be of great help to the paediatrician.

Phenylketonuria, a metabolic disorder, is a very rare condition, numbers being estimated to be as low as one case in every 16,000 of the population. Most of these cases are very seriously defective and are cared for in institutions. A few years ago, as the result of the discovery by a biochemist, Dr. L. I. Wolf, at Great Ormond Street Hospital, of a special "protein-free" diet, improvement *in a few cases* was obtained. It was found that this improvement depended upon finding and treating these patients at a very early age. The younger they were when started on the diet, the more likely were they to benefit. In some cases, the treatment seemed mainly to prevent deterioration; in others, actual improvement was obtained over a period of years. It was also found possible to study this improvement by watching closely the mental development of the children. Certain children who did not have the treatment were used for the control study. The method of testing and follow-up of these cases under treatment was the Mental De-

velopment Scale described in this chapter. Two of the most successful results of this diet and follow-up study are shown in the graphs below (Fig. 4).

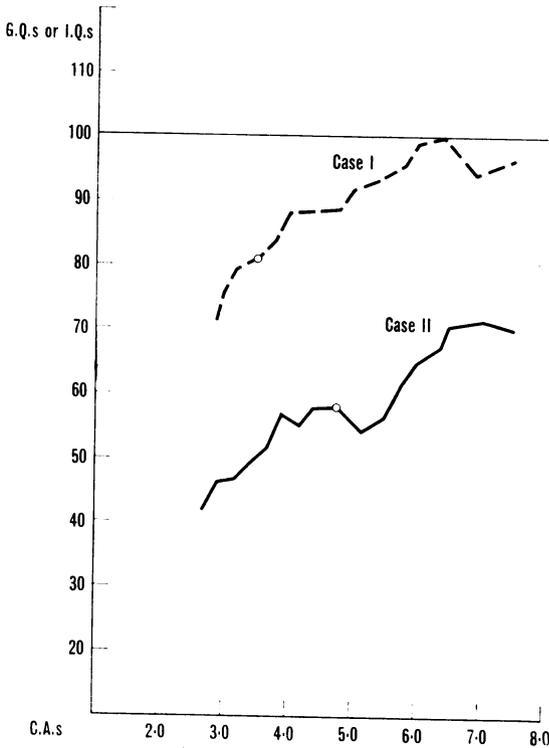


FIG. 4

CONCLUSION

(a) With adequate representative samples of a population, the general doctrine of the constancy of the I.Q. will hold, on repeated tests, although many changes may be taking place among individual members of the group.

(b) With handicapped children, we almost invariably find exceptions to this rule. Without treatment, or where treatment is not yet available, defective children tend to deteriorate more or less slowly as they get older, and this is reflected in a slowly dropping I.Q. Where treatment or other measures can help in particular cases, the quotient may rise—usually slowly, sometimes dramatically.

(c) With young infants, so far as our knowledge goes at present, the same principles hold. The stable average child, studied by the method described above, progresses at an average pace and acquires each successive ability

at the appropriate time. Not enough systematic research has so far been done to show to what extent tests taken in infancy can be regarded as predictive of the future in individual cases. Much more systematic information is needed, although test-retest correlations, under favourable conditions and within the first two years, give satisfactory results, as mentioned earlier.

Tests that cover a similar wide range of abilities, comparable to those now used for infants, are not yet generally available for older children. Therefore, when studying babies, the only means of continuing individual studies is to use other types of test such as the tests—usually predominantly verbal—used for older children. We cannot expect that (a) after a period of time and (b) with an entirely different type of test we should obtain high correlations, although these are sometimes found.

I am myself at present studying and collating quite extensive data, gathered in the past few years by myself and members of a small research team, which include test results on all the five sub-scales of the infant test already described (and one further one), to provide a continuation of the profile technique for children up to the eighth year. When this work is completed, we shall have more to contribute on this vexed problem of infant tests on a normal population of children being predictive; and I believe we shall also be able to shed more light on the difficult problems of mental growth and development in handicapped children.

What, then, is this age in which we live? World-shaking events seem imminent. Yet, in the fields of paediatrics, child care, child research, biochemistry and other allied fields of work, we find: cataracts are removed from the eyes of children and the blind or partially sighted begin to see! Hearing aids are provided at a very early age, sometimes before the first birthday, and the deaf child learns to speak! The phenylketonuric child, once seriously defective, is treated with a special chemical diet and becomes a normal, or near normal, child. Many of us who constantly meet these children are in danger of regarding these things as commonplace; those of us who have longer memories know them as modern miracles. More research and study is needed in all these areas. There is much more to be learned. In some areas very little still can be done, as for example in that largest of all groups of defectives: mongol children. But even here, research continues and much has been learned in the past few years concerning the genetic aspects of this and other inborn defects.

REFERENCES

- BLAINEY, J. D., and GULLIFORD, R. (1956) Phenylalanine-restricted Diets in the Treatment of Phenylketonuria. *Arch. Dis. Childh.* 31, 452-466.
- BLAINEY, J. D., and LEYTON, G. B. (1963) Balance Studies in Phenylketonuria. *J. ment. Defic. Res.* 7, 22-30.
- EWING, I. R., and EWING, A. W. G. (1944) Ascertainment of Deafness in Infancy and Early Childhood. *J. Laryng. Oto.* 59, 9.

- EWING, I. R., and EWING, A. W. G. (1947) *Opportunity and the Deaf Child*. University of London Press.
- GESELL, A., and AMATRUDA, C. S. (1941) *Developmental Diagnosis: Normal and Abnormal Child Development*. Hoeber, New York.
- GREENBERG, R. C. (1963) Two Factors Influencing the Births of Mongols to Younger Mothers. *The Medical Officer*, **109**, 62-64.
- GRIFFITHS, RUTH (1954, 1960) *The Abilities of Babies*. University of London Press.
- HINDLEY, C. B. (1960) The Griffiths Scale of infant development: scores and predictions from 3 to 18 months. *J. Child. Psychol. and Psychiat.* **1**, 99-112.
- ILLINGWORTH, R. S. (1961) The predictive value of developmental tests in the first year, with special reference to mental subnormality. *J. Child. Psychol. and Psychiat.* **2**, 210-215.
- LELAND, HENRY (1957) Some Psychological Characteristics of Phenylketonuria. *Psychol. Reports*, **3**, 373-376.
- MEYER, H., MERTZ, E. T., STADLER, H. E., LELAND, H., and CALANDRO, J. (1958) Psychometabolic Changes in Phenylketonuria treated with Low-Phenylalanine Diet. *A.M.A. Arch. of Internal Medicine* **101**, 1094-1105.
- MCCARTHY, D. (1946) Language Development in Children, in L. Carmichael (Ed.) *Manual of Child-Psychology*, Ch. X.
- PENROSE, L., and QUASTEL, J. H. (1937) Metabolic Studies in Phenylketonuria. *Biochem. J.* **31**, 266-274.
- ROBERTS, J. A. F., GORDON, R. G. and GRIFFITHS, R. (1939) Does Poliomyelitis Affect Intellectual Capacity? *Brit. med. J.*
- SHIRLEY, M. M. (1933) *The First Two Years: A Study of Twenty-Five Babies*. Vols. I to III. Univ. of Minnesota Press, Minneapolis.
- SPEARMAN, C. (1923) *The Nature of Intelligence and the Principles of Cognition*. Macmillan, London.
- TERMAN, L. M., and MERRILL, M. A. (1937) *Measuring Intelligence: A Guide to the Administration of the New Revised Stanford-Binet Tests of Intelligence*. Houghton Mifflin, Boston.
- Treatment of Phenylketonuria* (1963) Report of the Medical Research Council of the Conference on Phenylketonuria. *Brit. med. J.* **1**, 1691-1697.
- WALLIN, J. E. W. (1949) *Children with Mental and Physical Handicaps*. Prentice-Hall, New York.
- WOOLF, L. I., GRIFFITHS, R. and MONCRIEFF, A. (1955) Treatment of Phenylketonuria with a Diet low in Phenylalanine. *Brit. med. J.* **1**, 57.
- WOOLF, L. I., GRIFFITHS, R. MONCRIEFF, A., COATES, S. and DILLISTONE, F. (1958) The Dietary Treatment of Phenylketonuria. *Arch. Dis. Childh.* **33**.
- ZAPPELLA, M. and COWIE, V. (1962) A Note on Time of Diagnosis in Mongolism. *J. ment. Def. Res.* **6**, 82-86.

CHAPTER 8

The Place of Longitudinal Research in the Study of Child Development

by TERENCE MOORE

IN A recent imaginative analysis of current trends, Lawrence K. Frank⁽¹⁾ sees the science of human development as a new discipline, emerging as the fruition of the past fifty years of investigation in biology, medicine and the social sciences, which will "attempt to go beyond the specific quantified findings of the life sciences . . . to a multidimensional approach to the intact living, growing, developing, ageing organism-personality".

Professor Frank's challenging article looks toward the future; but whereas the full realization of his vision is yet to come, several of the basic components of his programme—the study of development as it takes place in time, awareness of the interaction between child and environment, and a measure of collaboration across disciplinary boundaries—have characterized many developmental research projects for at least four decades.

In the nineteen-twenties and thirties, studies were inaugurated in various parts of the United States in which the physical growth and mental and personal development of numbers of individuals were to be recorded during a considerable part of their childhood and adolescence, by teams representing several disciplines. After the war this fashion spread across the Atlantic, with the launching of longitudinal studies in a number of European and African centres, one group being co-ordinated by the International Children's Centre (Falkner⁽²⁾) to make possible cross-national comparisons. Interim findings on various aspects of development have been published by many of these centres, and more comprehensive reports have appeared from some of the older-established American institutes. Kagan⁽¹⁴⁷⁾ has recently summarized the coverage and present status of ten of these studies, giving selected bibliographies.

Longitudinal studies of this kind have been criticized because of their cost, the long wait for results, and the inevitable loss of cases; because in some instances more data have been collected than could be used, with no clear idea of their purpose; and because early data may be found lacking to test hypotheses that emerge later in the course of the study. It is not my intention to discuss these problems, or the practical difficulties of longitudinal research; this has been well done by Jones⁽³⁾ and by Kessen⁽⁴⁾. I

propose instead to make a limited survey of the main areas in which type of work has contributed to knowledge, and to mention some of the open questions to which its contribution still seems essential. In such a brief review I shall inevitably leave out much that is important, nor do I claim familiarity with the whole field; the examples I choose will be those that have come my way and seem significant. Some discussion of methods, and some references to non-longitudinal work, will be necessary to an appreciation of the interdependence of the various research designs. For a full treatment of the methods of studying children, Mussen's handbook⁽⁵⁾ is recommended.

First let us define essential terms. A *longitudinal* study is one in which information is collected concurrently on one or many individuals over a time span long enough to encompass a detectable change in developmental status. Thus it differs from a *cross-sectional* study in observing changes in the same individual; from *retrospective* study in recording development as it takes place; and—at least for present purposes—it is to be distinguished from both *experimental* and *clinical* studies in refraining from manipulating the course of development. The term *follow-up* is sometimes applied to retrospective studies (as in a follow-up of individuals known to have had a particular experience in the past); but where the subjects are observed before or during the experience and then again later, the follow-up is essentially longitudinal, although data on the intervening period may be missing.

Although the term "longitudinal studies" is commonly used to refer to large, long-term, multi-disciplinary investigations, it applies equally to small-scale studies of specific aspects of development over a limited period, such as that of Ambrose⁽⁶⁾ on the smiling response in the early months of life. Stone and Onqué⁽⁷⁾ provide abstracts of some 300 longitudinal studies of child personality, with samples ranging from one case to several thousand. Although the "baby biographies" which launched child study in the nineteenth century may have had their day, systematic observations on particular functions in a single child, such as those of Lewis⁽⁸⁾ on his son's developing speech, still fulfil a function complementary to that of large-sample research.

The plan of what follows is one of convenience, implying no belief in fundamental distinctions between aspects of the individual, or of the environment; indeed, since these aspects merge one into another, some overlap between sections cannot well be avoided. I shall consider in turn:

- I. The Processes of Development—
 - A. Physical growth
 - B. Growth of abilities
 - C. Behaviour tendencies
 - D. Personality development.

II. Influences on Growth—

- A. The scope and limits of environmental influence
- B. Cultural and sociological factors
- C. Parental influences
- D. Deviations from ordinary family life
- E. Other critical experiences.

III. Interaction between the child and his environment.

I. THE PROCESSES OF DEVELOPMENT

A. Physical Growth

The study of physical development is interesting not only in its own right but also for its bearings on social adjustment. It is also a useful starting point for our purpose because its results are visible and measurable in familiar units, and because the various types of growth provide models against which development of psychological functions can be set for comparison.

The first distinction to be made is between growth that can be measured along a continuum, such as height, and growth that cannot be so measured but which results in the emergence of new structures, such as teeth, or functions, such as walking. In the first case, assessment of an individual consists in measuring him and comparing the measurements with current standards for persons of his age, sex and country. In the second case, where any particular milestone of development is concerned, the comparison is in terms of the age at which the individual acquires the structure or function in question, in relation to the average age for acquiring it. A single milestone is always an unreliable guide to developmental status; but a number of such indications taken together can add up to a satisfactory overall assessment, and this is the essence of a developmental scale. Although it differs from a continuous measure such as height in its method of construction and in the aspects of growth it measures, basically the two types of assessment can both be regarded as different manifestations of a single underlying process of maturation.

Now let us consider the types of research implied. In both kinds of assessment, standards have had to be established by the examination of large numbers of individuals of all ages and both sexes, selected so as to be representative of all sections of the population in the country concerned. For continuous measures, means and standard deviations for males and females are calculated at each age, usually at yearly intervals. For scales made up of discrete milestones, the percentage passing each item at each age is noted and the item is assigned to the age level at which a predetermined percentage (usually 50 per cent) pass it. The establishment of norms in these ways is essentially a task for cross-sectional research, since it is an operation requiring the recruitment of large and carefully balanced samples of children

of different ages at the same time. Moreover it is a task which should be repeated at least once in every generation, for appreciable changes occur and make old standards seriously misleading. Over the past 100 years the increase in height and weight and the reduction of average age of attaining sexual maturity have been documented in many countries (Tanner,⁽⁹⁾ pp. 145-155).

Cross-sectional studies therefore will continue to be needed for the periodical collection of age norms, including the range of normal variation, in every aspect of development. This is the essential scaffolding without which the study of growth could not take place. But it is not in itself a study of growth or development, for these are processes which take place in individuals through time, and can only be observed in the longitudinal records of individual progress. Curves connecting the average measurements from age to age are always more or less smooth, owing to the cancelling out of variations; but far from being the commonest pattern, the simple curve never appears at all in life, for growth is essentially a spasmodic business, with rapid spurts and slower periods as part of its nature. The well-known adolescent spurt in height is one example. In the smooth curve of average height for the population this spurt is barely perceptible; in any individual curve it is marked. Contrast the cross-sectional (light) and longitudinal (heavy) 50th percentile lines in Fig. 1. The reason is that, quite apart from the difference between the sexes, individual boys or girls differ by as much as five years in the age at which it occurs, it is commonly preceded and followed by periods of slower growth, so that at any given age the slower and the faster growers compensate each other. Two individuals may be equal in height at the beginning and the end of adolescence, but differ by as much as four inches in the middle of it, as shown in Fig. 1.

This fact has far-reaching implications. For the growth spurt has a definite relationship to all the other changes of adolescence which cumulatively amount to the transition from childhood to maturity. Whether this occurs at 12 or 15 can obviously make an enormous difference to the individual. Early maturing boys have a clear advantage in size, strength, athletic and sexual prowess at an age when these are highly valued in the peer group. For girls, early adolescence may be less advantageous. But does it make any lasting difference? In the Oakland Growth Study, in which adolescents were followed into later life, correlations were found between early maturing in males and adult social participation, responsibility and prestige; and the occupational status achieved could be predicted better from age of puberty than from ability in childhood or from parental occupation.⁽¹¹⁾

If a boy is tall for his age, will he turn out taller than the average man? Not necessarily; for just as the adolescent spurt can vary widely in age so can the termination of growth; the tall child *may* turn out to be a tall adult growing at an average rate, or he may be advanced in growth toward

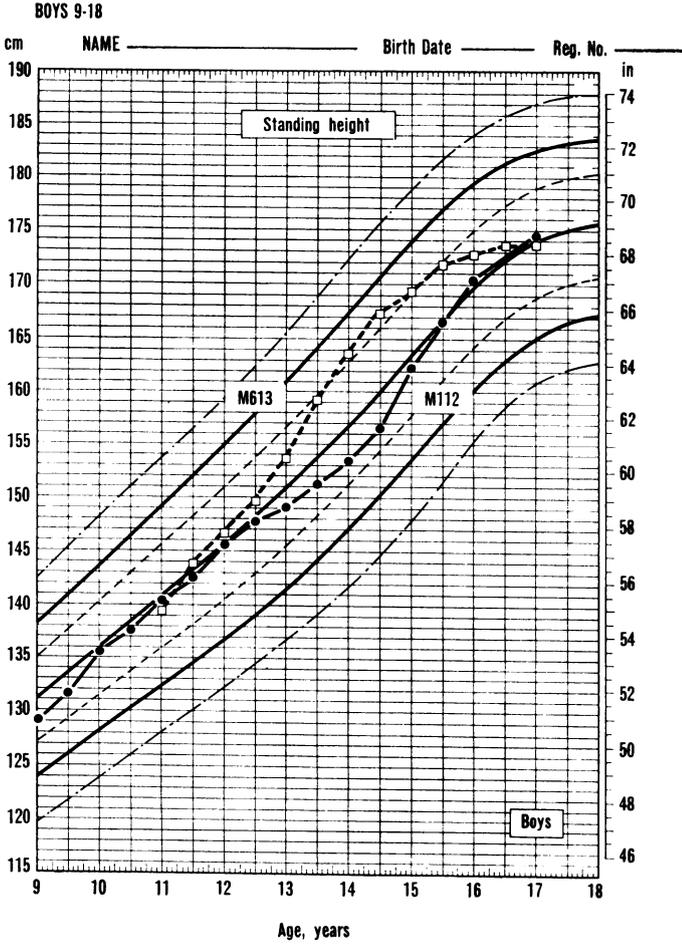


FIG. 1. Height attained from 11 to 17 of two boys of Harpenden Growth Study, one (M 613) with an early and the other (M 112) with a later adolescent spurt. The plots are made against the Tanner—Whitehouse 1958 cross-sectional British standards, and the solid black line represents the 50th percentile of the new longitudinal-type 1965 standards. (From Tanner, Whitehouse and Takaishi.⁽¹⁰⁾)

only average adult height. If we knew how mature he was—that is to say, what proportion of his growth process he had accomplished—the prediction of his adult height would become much more feasible. We should also know more or less when to expect the onset of puberty and the adolescent growth spurt.

A reliable measure of maturity exists in the skeletal age. When ossification is complete and the epiphyses fuse with the long bones, linear growth ceases. From an X-ray of the hand or wrist the stage of ossification reached in a number of bones can be observed and matched against standards to give an assessment of maturity. Through longitudinal studies, skeletal age measured as early as three years of age has been found to correlate substantially with age of attaining puberty and with mature height. Prediction of these from skeletal maturity taken in conjunction with height for age is now possible within a reasonable, and defined, margin of error, which decreases as the child grows older. Moreover, since ossification is well under way at birth, assessment of maturity reached at that stage is possible—a development which is likely to prove of great value.

Weight, because it depends in varying proportions on bone, muscle and fat, and is affected by diet and other factors, is much less predictable. The weight-to-height ratio gives an indication of the type of physique, and its constancy is being investigated in the Merrill-Palmer Longitudinal Study (Stott⁽¹²⁾). At other centres, Sheldon's somatotypes, which were found to correlate with temperamental traits in adolescence (Sheldon and Stevens⁽¹³⁾) are being applied to children to discover how early such an association can be detected (Davidson *et al.*⁽¹⁴⁾).

The field of psychosomatics is notoriously ill-defined. Prugh,⁽¹⁵⁾ in a scholarly essay with a twenty-five-page bibliography, reviews the place of psychosomatic concepts in relation to the whole field of illness in children. Sontag⁽¹⁶⁾ reminds us that the interactions between soma and psyche are reciprocal, and mentions a few of the many "somatopsychic" issues awaiting longitudinal research to throw light on the sequence of events.

People who externalize their feelings tend to show less marked autonomic reactions (changes in skin conductance, pulse rate, blood pressure and respiration) than those who are more reserved and constant in mood. It was once thought that the latter would be more liable to break down later, but adolescents of this type, followed up in the Oakland Growth Study, were found at the age of thirty-eight to be significantly better adjusted, having fewer psychiatric and somewhat fewer psychosomatic symptoms (Jones⁽¹⁷⁾). At the Fels Institute in Ohio, Kagan and Moss⁽¹⁸⁾, who found a high positive correlation between autonomic reactions and a tendency to conceptualize in emotive terms (the joint tendency being moderately stable through adolescence and early adult life) suggested that cognitive attitudes might influence these physiological reactions.

The development of endocrine, metabolic, cardiac and other physiological functions, including the pattern of neural discharge shown in the EEG, are known mainly from cross-sectional studies, and much longitudinal work remains to be done before they and their relationships to behaviour are fully understood. For discussion of these, and of the whole area of physical growth, the reader is referred to Tanner.⁽⁹⁾

B. Growth of Abilities

At first sight it might seem that the development of abilities could be measured in much the same way as that of height. Both increase steadily throughout childhood and adolescence, and the concept of mental age has accustomed us to thinking in terms of a continuum, along which progress is measured in the apparently objective units of years and months.

The objectivity, however, is illusory. To obtain a mental age of ten, a child must pass the tests that have been empirically found (through cross-sectional studies) to be passed by the average ten-year-old. The measure has thus been constructed artificially so as to ensure that mean mental age shall coincide at every point with mean chronological age, up to the age of fourteen. (After that, the gradual slowing down of the increase in ability to pass more tests with age has led to a compromise with the age-equivalence formula.) Mental age, therefore, is not an independent scale comparable to a measure of height; it is merely an aggregate of credits for passing discrete items, each of which may be regarded as a developmental milestone empirically selected.

When Binet standardized his mental tests early in the century, it was soon observed that in most individuals the intelligence quotient, or ratio of mental to chronological age, did not vary widely on retest. Did this mean that normal mental growth could be expected to follow the typical course throughout, at some constant multiple of the average rate? Did departures from the constant ratio indicate either faulty testing or abnormality in the individual? Or was mental growth, like height, subject to spurts and plateaux which cancelled out in the average? Was there an adolescent spurt, and did it coincide with the period of rapid physical growth?

Many longitudinal studies were carried out to answer these questions, in which children were measured and given intelligence test at intervals. One of the best known was the Harvard Growth Study (Dearborn and Rothney⁽¹⁹⁾), from which it was concluded that prediction of intelligence was extremely hazardous, that the relationship between physical and mental growth was very slight, and that mental performance was unaffected by the adolescent growth spurt. At Berkeley it was also found (Honzik, Macfarlane and Allen⁽²⁰⁾) that correlations between I.Q. tended to decrease as the interval between tests increased, suggesting that the unpredictability was due less to unreliable tests than to the divergent trends of individuals; that between the ages of six and eighteen, changes of at least fifteen points of I.Q. were shown by 58 per cent of the children, and changes of thirty points or more by 9 per cent; and that individual curves varied enormously. (The examples in Fig. 2 are shown in standard deviation units to eliminate differences of distribution at different ages.) Pinneau and Jones⁽²¹⁾ report more recent work on this subject which leaves the picture essentially unchanged. The further course of abilities in adult life is examined in Birren's⁽²²⁾ work on aging.

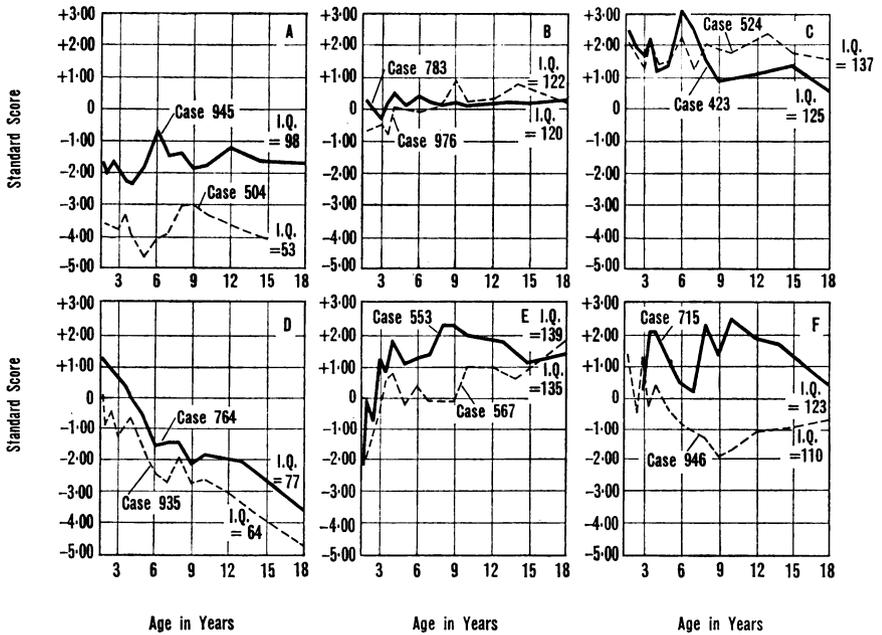


FIG. 2

The younger the child, the less predictive the I.Q. Maurer⁽²³⁾ collated the findings of many studies following up ability from infancy or early childhood. Tests of infant development, such as those of Gesell,⁽²⁴⁾ Brunet and Lézine⁽²⁵⁾ or Griffiths,⁽²⁶⁾ are not nowadays claimed to yield an intelligence quotient. They test a variety of abilities, motor, adaptive, vocal and social, which are the necessary foundation skills of intelligent behaviour but cannot be said in themselves to constitute intelligence. Nevertheless, the scores of such tests are usually expressed in terms of mental age, and the developmental quotients calculated analogously to I.Q. Hopes that these D.Q. would turn out to predict later intelligence have been largely disappointed where variation within the normal range is concerned (though prediction of sub-normal development is probably more reliable—Illingworth⁽²⁷⁾). Probable reasons for this have been discussed by Bayley^(28, 29).

Longitudinal studies have thus done much to clarify the limits within which mental growth can be predicted from the kind of tests in general use. The trend now is toward a search for factors associated with the optimal development of potential ability. Jones⁽¹⁴⁸⁾ offers a most comprehensive summary of the evidence in this field up to 1954. More recently, Sontag, Baker and Nelson⁽³⁰⁾, at the Fels Institute, studied the upward or downward trend of I.Q. in relation to personality ratings. They found emotional dependence on parents to be significantly associated with loss of I.Q. in the

pre-school period; a number of traits clustering around the achievement motive to characterize children whose I.Q. rose during the school years; and aggressiveness, self-initiation and competitiveness at pre-school ages to predict later acceleration of I.Q. At Berkeley, Macfarlane⁽³¹⁾ found negative correlations between I.Q. and the number of problems reported at every age from 4 to 14 years. The development of intelligence appears to depend, too, on many environmental and latent hereditary factors, as I shall discuss below.

Another trend is toward a more critical examination of just what the responses to intelligence tests tell us (Sigel⁽³²⁾) and toward an interest in those aspects of thinking which I.Q. neglect or even obscure, such as creativeness and conceptual style. The stages through which children's concepts pass as they mature, the charting of which has been the life work of Piaget (for an English exposition approved by Piaget, see Flavell⁽³³⁾) are currently being subjected to longitudinal study at Geneva.

Although general intelligence has been shown to enter into all cognitive abilities to some extent, factor analysis has also demonstrated the existence of types of ability—verbal, spatial, numerical—as well as certain functions such as speed, fluency of association, perseverance and the like, which along with interests and other personality factors introduce an infinite variety into the patterning of individual capabilities. Much work has still to be done before the development of these patterns is understood, even at the simplest level. Will a child who learns to talk early relative to his general development retain a verbal bias, while one who is better at manipulating toys than words develops a mechanical aptitude? We do not yet know.

In a classic small-sample longitudinal study (Shirley⁽³⁴⁾) a psychologist and a paediatrician visited twenty-seven babies in their homes at weekly intervals throughout the first year of their lives, and fortnightly throughout the second, carrying out extensive and most systematically planned observations of developmental status on each visit. This heroic endeavour provided the data for many useful hypotheses. For example, Shirley found that for any given area of development such as locomotion or language, whereas rate of development might fluctuate, the sequences in which the abilities appeared remained essentially constant. In the locomotor area, for example, she identified several sequences of component skills leading respectively to crawling, sitting, standing and walking. These sequences were found to agree closely with those noted by different investigators working by different methods with children of different levels of ability in different cultures. As between major areas the order of events was much more variable: thus locomotion, manipulation and vocalization developed with considerable independence throughout the first year, though they became more closely related during the second.

The sequential development of behaviour figured centrally in the work of Gesell^(24: 36 a, b, c); his philosophy stresses the pervasiveness of matura-

tion in growth as a whole and within each sequence. Although his best known work is concerned with the establishment of age norms on a cross-sectional basis, he has also presented follow-up studies of a number of individuals to demonstrate the essential regularity of development⁽³⁵⁾.

The relationship of speech and language to intelligence is another subject appropriate for longitudinal study. Anderson⁽³⁷⁾ found the language scale more predictive of later intelligence than the other scales of infant tests, the present writer has obtained similar results for infant girls, but not for boys, whose later ability seems to depend more on active exploration of the concrete properties of things (Moore⁽¹⁴⁹⁾), though for them too the verbal formulation of ideas becomes indispensable at school age. Through observation and experiment, the role of language in concept formation has been demonstrated by both Piaget⁽¹⁴⁵⁾ and Vygotski⁽¹⁴⁶⁾ with striking differences of interpretation; while Luria and Youdovitch,⁽³⁸⁾ in an intriguing study of twins in a nursery school, have shown the importance of speech in planning and structuring activity.

This could lead us on to a discussion of reading and other scholastic attainments. These depend partly on ability, partly on motivation, partly on teaching; and some (Olson⁽³⁹⁾; Simon⁽⁴⁰⁾) would add a consideration of physical maturity in deciding whether a child is ready for school, or for formal instruction. Educational research typically proceeds by the experimental method of comparing the results of different treatments; it is a distinct field and too large to include in this chapter.

C. Behaviour Tendencies

In assessing abilities we are seeking to define the repertoire of actions (mental or motor) of a given individual at a certain time in his life. In describing behaviour tendencies (dispositions or propensities) the problem is to discover which actions from this repertoire he tends to select in his daily living as compared with other individuals at the same stage of development. This involves quite a different approach. Most people of school age or over will display their abilities on request in a test situation; but because self-consciousness alters behaviour, they may be unwilling or unable to display their propensities, some of which can only be observed in a naturalistic setting, while others can be tested provided the subject is unaware of the purpose of the tests.

The first problem, then, is to secure a valid sample of the subject's behaviour; the second is to structure it for analysis.

Behaviour can be observed at home, at school or in special experimental settings. It can be reported by parents, teachers, peers or by the subject himself. The various samplings so obtained can be expected to differ con-

siderably, both because people behave differently in different environments and because each observer brings his own unique perception and frame of reference. Regarding the former point, Stott⁽⁴¹⁾ would deny the existence of traits (inherent personal differences) and substitute the term "situation-attitudes." Whether because behaviour really varies so widely, or because it is variously perceived, Becker⁽⁴²⁾ has demonstrated how little there is in common between views of the same child held by its mother, father and two teachers. With a sample of sixty children, he correlated factor scores derived from seventy-two ratings made on each child by each of the four observers. The average correlations were 0.76 between teachers, 0.52 between parents and 0.34 between parents and teachers.

Clearly no one person's testimony has absolute validity. Relative validity will depend on opportunities for observation, interest, experience of other children for a standard of reference, and emotional objectivity. On the first two counts the mother is likely to be the only satisfactory witness with infants and children under school age provided she is at home with them. She cannot be wholly objective, and her standards will be relative to whatever other children she has known well. Techniques of collecting information from mothers are discussed by Hindley.⁽⁴³⁾ Teachers are well placed for forming standards of reference, and many of them are excellent observers, although their attention must be divided among all their pupils. The opinions of classmates, recorded through sociometric techniques, have the advantages and drawbacks of group judgment; they embody the public image or persona. The subject's own testimony about himself (used extensively in the Berkeley Guidance Study—Macfarlane⁽⁴⁴⁾—and by Peck and Havighurst⁽⁴⁵⁾) clearly deserves attention; the problems of its validity are well illustrated in Sarason's⁽⁴⁶⁾ study of self-reported anxiety. The value of knowing all these points of view is obvious when we remember how important they are, not only in assessing but actually in shaping the child's experience and consequent development, since they largely determine the treatment he receives. But for the nearest approach to objective observation there can be no substitute for psychologically trained observers.

Where can such observers operate? If they visit the child's home infrequently, their presence may well distort the normal patterns of events while they are present. Frequent visits will reduce this distortion; an experiment of Buehler's⁽⁴⁷⁾ in which observers went daily in the capacity of home-helps, proved very productive and might well be used at intervals in a longitudinal study. Nursery schools are a favourite ground for observation, and the Fels Institute ran a summer camp for its school children. Such environments provide a much wider range of physical and social opportunities than a child's home, and will therefore call out different and more varied behaviour.

When it is necessary to narrow and standardize the stimuli so as to test the subject's responses in a specific situation, an experimental setting, gener-

ally a playroom in the clinic or study centre, is used. While the child's responses to such artificial situations may not be typical of his everyday behaviour, they are assumed to reveal significant characteristics of the person. How significant and how characteristic are questions which can only be decided by validation against observations from "real life".

Information concerning behaviour tendencies can be structured in various ways. I shall discuss in turn maturity scales, frequency counts and ratings.

Behaviour can be analysed into specific acts, many of which tend to appear at a given stage of maturity. These can be arranged on a scale and given age values like the items of a mental test. The Vineland Social Maturity Scale (Doll⁽⁴⁸⁾) is one example. It yields a "social age", which, being based on various kinds of self-help and self-direction, might better be termed a measure of personal competence. A scale depending more on social interaction was tentatively offered by Bridges.⁽⁴⁹⁾ Like scholastic attainments, the maturity assessed by these scales depends on a combination of ability, motivation and training, but unlike school performance it is judged not on whether the subject is *able* to meet the criteria, but on whether he *habitually* does so. A seven-year-old may be quite capable of dressing himself, but if his mother actually does so on most mornings, in this respect his social maturity falls short of his ability. This may be because he prefers it so—a question of motivation—or because his mother prefers it—a question of training; and clearly the two may interact. Furthermore, he may dress himself at weekends but not on school mornings—illustrating the effect of situational context. Or he may have been accustomed to dress himself for some time and then become unwilling to do so, perhaps after the birth of a baby sibling—an example of regression. Anna Freud⁽⁵⁰⁾ has discussed the role of regression in development, distinguishing those temporary regressions which are healthy defensive reactions in times of stress, allowing the ego time to assimilate the experience, from pathological regressions which may permanently impair the personality.

But behaviour varies on other dimensions beside that of maturity; two individuals equally mature may be widely different in most other respects. This may depend on the differential frequency of certain acts (one person laughs frequently, another seldom), or on differences of intensity or quality which can be judged but not exactly quantified. Frequency of actions can be counted: the method of time-sampling amounts to doing this over a number of periods sufficient to be representative of the subject's behaviour. As this exact method is seldom feasible in long-term studies, frequency is usually estimated. This, in a study of infants' nocturnal waking by the author and a colleague, (Moore and Ucko⁽⁵¹⁾) mothers were asked at intervals whether their babies had wakened nightly, several times a week, once or twice a week or less over the past fortnight, and whether this represented an increase or decrease over the previous few weeks. This information proved sufficient to chart individual children's patterns of night waking

throughout the first year (Fig. 3), revealing both a general trend and individual variations which were found to correlate with certain characteristics of the child and of the environment.

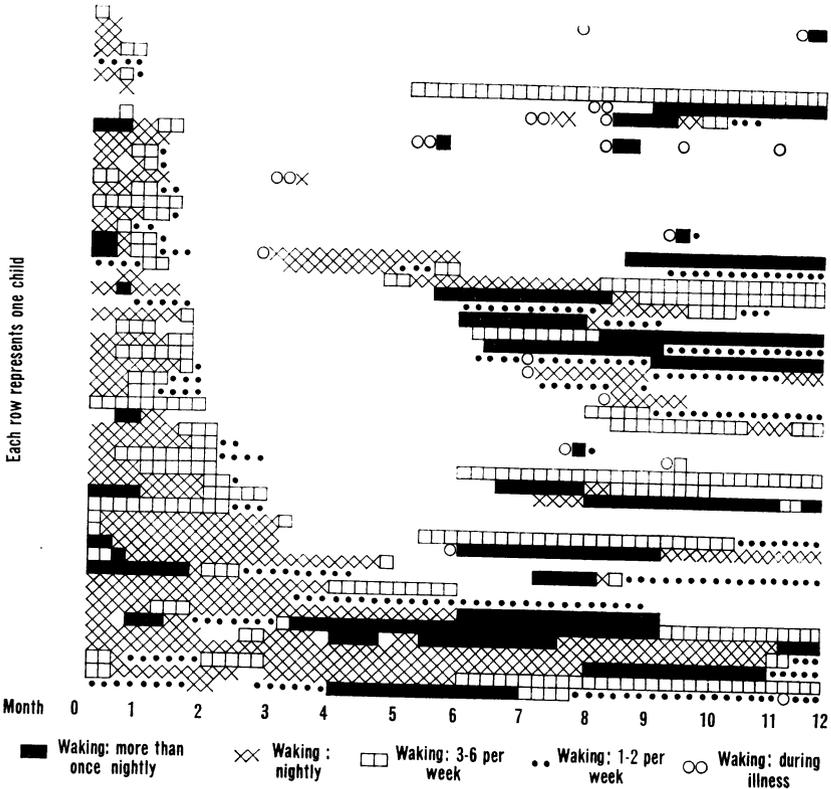


FIG. 3

Estimates of frequency, as distinct from exact counts, are one type of rating scale. Rating scales are a flexible kind of instrument which can also be applied to qualitative aspects of behaviour, whether judged from direct observation or from the records taken by others. They can be made coarse or fine as appropriate, and by precise definition, with adequate checks, reasonable comparability between raters can usually be established.

Carefully defined ratings, made from voluminous interviews, were used by Macfarlane⁽³¹⁾ as a basis for grading Berkeley children for their tendencies to all the commoner behaviour difficulties at every age from 21 months to 14 years. This study, giving the age-sex incidence of problems, their typical durations, and the consistency of individual differences in

liability to problem behaviour in general, provides a useful baseline against which to judge the problems of any individual child. Since, however, there is no reason to suppose that the distributions are similar in different places, or in the same place in different generations, there is a strong case for repeating studies of this kind in many countries from time to time, as is being done at present in the European group of longitudinal studies.

D. Personality Development

Attempts to study personality as a whole have taken many different forms. In the broadest sense personality can be said to embrace the whole of the individual. One approach, used in the Merrill-Palmer Longitudinal Study, is to measure as many functions as can be measured by means of maturity scales—physical, physiological, mental, social and educational—and to study their changing relationships through profiles and growth curves (Stott⁽¹²⁾).

Shirley,⁽³⁴⁾ after quantifying as much behaviour as she could, resorted to free prose description to record the essential individuality of her twenty-seven babies. In an unforeseen follow-up 15 years later Neilon⁽⁵²⁾ showed that judges could identify most of the adolescents by matching descriptions of their personalities against what Shirley had written about them as toddlers.

Escalona attempted to predict childhood personality from detailed records of infant behaviour. A twofold analysis of her successes and failures, as judged by herself and a colleague (Escalona and Heider⁽⁵³⁾), compares the holistic personality-sketch method with a more systematic rating approach, and discusses the whole problem of prediction and its validation.

Thomas and his associates⁽⁵⁴⁾ claim to have identified nine "primary reaction patterns", amounting to a personality profile, which prove to be relatively constant at least through the first five years of life, and which they see as powerful influences on the behaviour of parents and others in the child's environment.

The prediction of personality in early adult life from ratings made at various periods of childhood is the subject of a report by Kagan and Moss⁽¹⁸⁾ on data from the Fels Longitudinal Study. The ratings were based on very extensive material grouped into age spans of three to four years. Figure 4 summarizes the average correlations of behaviour in seven key areas as rated in middle childhood and again in the early twenties. Several of these areas show substantial consistency for one or both sexes, and the authors point out that those variables which are generally regarded as appropriate to one sex tend to be more stable for individuals of that sex. Thus, readiness of anger differentiates among males fairly constantly, while passive withdrawal and dependence are better predictors among females. The authors conclude that sex-role identification is a key-factor in the organization of personality from an early age. In a searching critique,

Honzik⁽¹³⁷⁾ corroborates the findings concerning the particular variables in question, but challenges the conclusion and offers alternative inferences.

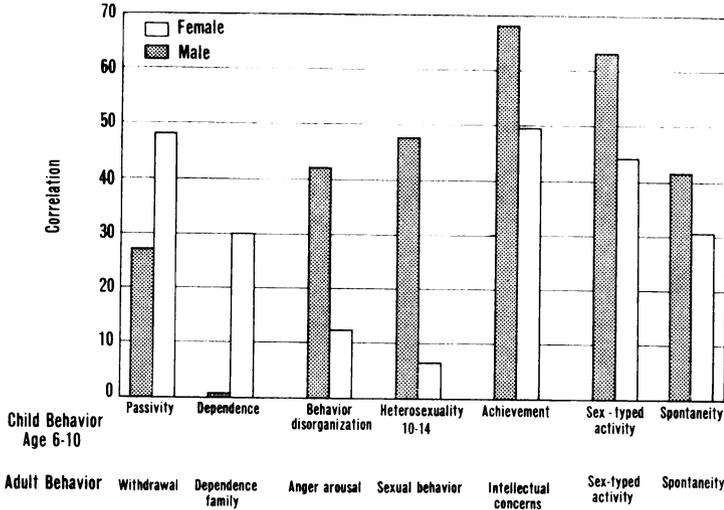


FIG. 4

A California follow-up from adolescence to age 33 (Tuddenham⁽⁵⁵⁾) produced a similar range of correlations (from 0 to 0.67, average 0.34) for ratings of *manifest traits* in both sexes and for *inferred underlying drives* in males; inferred drives were less predictive in females (average $r = 0.21$).

The final goal, as yet some way off, is the delimitation of the constant core of personality from the changeable behaviour through which it is often obliquely expressed. It is largely in pursuit of this objective that personality tests have been developed. These multitudinous techniques vary enormously in their approach, in the aspects of personality they explore, in the age range for which they are suitable, in their objectivity and efficacy; but it is fair to say that none enjoys the general acceptance accorded to the better known intelligence tests; that the problem of what constitutes satisfactory validity has never been solved; that suitable tests for young children are few, and longitudinal studies of developmental trends far fewer. Nevertheless, many of these instruments do distinguish significantly between sexes, ages, and groups selected on clinical and other independent criteria; and some—particularly the projective techniques—also yield a rich harvest of individually styled responses. As so often in psychology, the conclusion is that *something* is being measured, but no one quite knows what!

For full particulars and critical reviews of these tests (as well as of tests of abilities) the reader is referred to the periodical *Mental Measurements Year Books* edited by Buros.⁽⁵⁶⁾ Vernon⁽¹⁴⁴⁾ has recently produced a well-

balanced and constructive survey of the field. Personality tests fall into three classes: *objective*, judged on directly observable functions (such as the body-sway test of suggestibility); *subjective*, comprising self-reporting inventories commonly concerned with conscious feelings, attitudes or interests; and *projective*, in which the dynamic determinants of personality are inferred either from actions projected onto characters in stories invented by the subject (sometimes with the help of pictures or dolls); or from associations to words or incomplete sentences; or from expressive movements as in writing or drawing, and the use of colour, form and space as in painting or arranging mosaics; or again from the perceptual structuring of inchoate material such as inkblots.

For investigating the subjectivity of perception, with all its emotional overtones and significance for personality structure, Rorschach's inkblots (Klopfer and Davidson⁽⁵⁷⁾) are the technique *par excellence*. Going beyond the cross-sectional norms available from previous studies, Ledwith^(58, 59) collected Rorschach records from 140 children annually from six to eleven (plus a group tested only at the beginning and end, to control the effects of test sophistication). Besides presenting statistics on the changing scores, she published "blind" interpretations of each record of eleven children, parallel with data concerning their lives and daily behaviour at each stage. Like other projective techniques, the Rorschach comes out well when evaluated in this qualitative clinical fashion, while generally disappointing quantitative validation through correlation with other measures.

Henry⁽⁶⁰⁾ shows how the Thematic Apperception Test, depending on the interpretation of ambiguous pictures, can illuminate the developing personalities of adolescent and older subjects. The junior form of this test (Bellak⁽⁶¹⁾) capitalizes on children's propensity for identifying with animals. Young children, however, often find it easier to express their fantasies through the actions of dolls or puppets. Levin and Wardwell⁽⁶²⁾ review the various uses that have been made of doll play in research. The writer and a colleague^(134, 135) have found it most revealing of children's fantasies about family life and the significance of events in their everyday lives. Rosenzweig⁽⁶³⁾ and Murphy⁽¹³⁶⁾ describe other diagnostic techniques found useful in studying early personality development.

The connections between the mechanisms at work in projective responses and those determining overt behaviour remain obscure, and it may be that attempts to validate the one directly against the other are resting on too naïve assumptions. (Kaplan⁽⁶⁴⁾ and Rosenwald⁽⁶⁵⁾ have recently contributed a stimulating debate to the substantial literature on this subject.) Since correspondence at a given point in time is difficult to establish, the best hope would seem to lie in the study of parallel changes. It would also be quite reasonable to expect dynamic tendencies at one age to issue in overt behaviour later on. The inclusion of techniques of personality appraisal in longitudinal programmes, occurring in many places now, will provide a

wealth of evidence which can scarcely fail to add to our understanding of these baffling questions.

Character, adjustment and delinquency are aspects of personality which, being partly dependent on the values of society, present the predictor with a still more complicated problem. Anderson,⁽⁶⁶⁾ in a large-scale follow-up survey in which a wide variety of predictive instruments were tried out, found no single measure adequate as a prognostic of later mental health, although a combination of teachers' ratings, tests of intelligence and personality, socioeconomic status and home background assessments predicted well.

The prediction of delinquent tendencies has long occupied the Gluecks^(67, 68) whose scales, based on character structure (judged from the Rorschach), temperament (as seen in a psychiatric interview) and parent-child relationships, are being validated by follow-up studies. Data from a British longitudinal survey have been used (Mulligan *et al.*,⁽⁶⁹⁾) to explore the suspected association between delinquency and maladjustment at various ages. One very interesting study, by Peck and Havighurst⁽⁴⁵⁾ illustrates what can be done by team research in the study of character development. On the basis of preliminary study of a complete age-group in a mid-western city, they selected thirty-four children representative of a wide range of moral character as judged by their teachers and peers, and carried out a seven-year study of these children through adolescence, using interviews, projective tests, self-ratings, sociometry, and the reports of parents, teachers and others who knew the subjects. From this mass of data, after case conferences, ratings were made of various personality traits and of the extent to which each child conformed to five character types. It was found that most of the subjects leaned to one or other type on the basis of their profile of ratings, and that the types could be graded on a rough scale of maturity of character. Although the *forms* of behaviour changed with age, and despite varying experience, the underlying degree of moral effectiveness was found to be remarkably consistent between the ages of ten and sixteen.

II. INFLUENCES ON DEVELOPMENT

A. The Scope and Limits of Environmental Influence

While the earlier formulations of the nature-nurture controversy now seem naïve (Frank⁽¹⁾), its basic issues remain crucial for theory and application. What characteristics of the individual are subject to environmental modification, to what extent, how permanently, and during what period of growth? The experimental method of co-twin control (Gesell⁽⁷⁰⁾; Luria and Youdovitch⁽³⁸⁾), in which one of a pair of "identical" twins is exposed to a specific training, is the most direct approach to this problem. Very occasionally identical twins are reared in different families; Newman *et al.*⁽¹⁵⁰⁾ conducted a classic study of nineteen such pairs, using retrospective histories to

supplement a battery of tests of their physical, intellectual and personal characteristics in adult life. By comparing their similarities and differences with those of identical and fraternal twins reared together, they were able to estimate the relative contributions of heredity and environment to these various characteristics, with the proviso that this ratio would vary, especially for personality traits, not only with the measure employed but also with the degree of difference of the environments compared.

Without experimentation or separation, the simple developmental study of monozygotic twins, as compared with dizygotic twins and singly born siblings, can be suggestive but scarcely definitive, since the more alike two individuals are the more alike they tend to be treated. Zazzo⁽⁷¹⁾ has recently explored the problems peculiar to twins of establishing separate identities in the face of public attitudes to them. On the other hand, intra-uterine environment often differs more radically for identical than for fraternal twins. Nevertheless, extensive comparative studies of the correlations between twins of the two types (Huntley⁽¹⁵⁴⁾), or of their within-pair differences and the persistence and changes in these differences over time (Vandenberg⁽⁷⁵⁾), will at any rate show up those areas in which a common genetic constitution leads to closer similarity than do the environmental consequences of twinship alone.

Adopted children offer another ready-made experiment for the estimation of relative influences. Skodak and Skeels⁽⁷²⁾ showed how the child's intelligence correlates significantly, and increasingly up to age 7, with the education of the *true* mother, but negligibly with that of the foster-mother. Honzik⁽⁷³⁾ found that the corresponding correlation for children reared by their own mothers was no higher than for Skodak's adopted group (Fig. 5). Comparisons for father's education are similar. While this certainly provides evidence for the hereditary component of ability, there is another side to the picture. The mean I.Q. of Skodak's adopted children at 13 years was 106; that of their true mothers, 86. This difference is about twice that expected from statistical regression, and strongly suggests that the group as a whole had benefited considerably from being reared in a favoured environment.

The discovery (Geber⁽⁷⁴⁾) that Baganda children traditionally reared are notably more advanced in development than European children throughout their first year but subsequently fall behind, whereas those raised by europeanized methods follow developmental patterns more similar to those of white children, raises the nature-nurture issue in another form. But attempts to sift ethnic from cultural differences have always been bedevilled by the near-impossibility of finding truly equivalent samples in contrasting environments or a truly equivalent environment for contrasting samples.

B. Cultural and Sociological Factors

The surprising extent of divergence between parental practices in several European cities, revealed by parallel longitudinal studies, is illustrated in

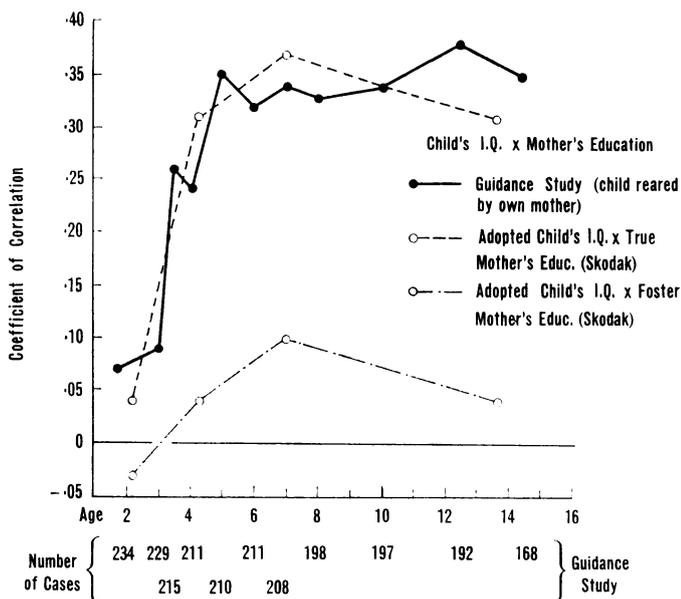


FIG. 5

median ages of weaning from breast ranging from 0·9 months for a Brussels sample to 4·5 months for one in Stockholm (Fig. 6); and median ages of starting regular toilet training ranging from 4·6 months in London to 12·4 months in Stockholm (Hindley *et al.* (76)).

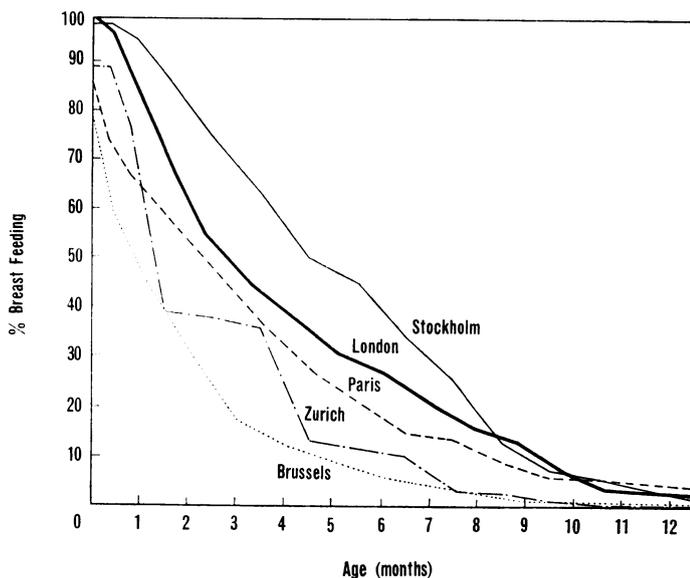


FIG. 6

The cultural tradition in which a child is brought up varies widely not only as between societies but as between sections of the same society. Comparisons of the child-rearing practices and attitudes of parents of different social classes have been related to comparisons of the behaviour, intelligence and scholastic performance of the children of these social classes at various ages. Bronfenbrenner,⁽⁷⁷⁾ for example, has demonstrated differences even between adjacent social strata in the patterns of parental dominance, and the balances of authority and affection, associated with maximal responsibility in adolescent boys and girls. In the sphere of abilities, Hindley⁽⁷⁸⁾ has shown that British children of different social classes tend to diverge progressively in their quotients over the first five years (Fig. 7). Most probably genetic and environmental factors reinforce each other to perpetuate such differences, while still permitting of frequent outcrops of high intelligence in children from under-privileged families and indifferent ability among the more fortunate. It appears from recent work (Bernstein⁽⁷⁹⁾) that language functions differently in the different classes, determining in important respects the ways in which individuals relate to their environment long before they reach school. But Douglas⁽⁸¹⁾ has shown how the child born into a less privileged environment is progressively penalized at every step in his physical, mental and social development.

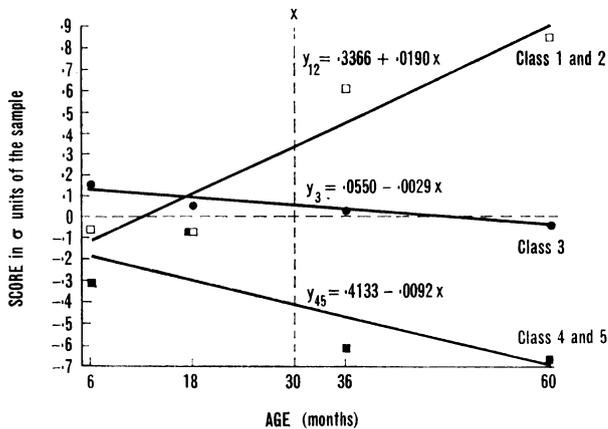


FIG. 7

Size of family and position in it are also known to affect the child's mental development and behaviour, presumably through the treatment he receives and his perception of his role in relation to others (Koch⁽⁸⁰⁾). For a discussion of these and other sociological variables the reader is referred to Clausen and Williams.⁽⁸²⁾ In Sweden, Klackenberglarsson and Stenson⁽¹³³⁾ find deceleration of ability in the first three years among children of young, ill-educated mothers, children conceived out of wedlock and those

receiving frequent corporal punishment; both they and Hindley⁽⁷⁸⁾ find it also among children with younger siblings. Peck and Havighurst⁽⁴⁵⁾ report an interesting attempt to estimate the influence of siblings, peers, school and church on the moral values of the children they studied, in comparison with the influence of parents.

C. Parental Influences

There is a vast literature dealing with the impact of parents on their children. In a common design of investigation (e.g. Sears, Maccoby and Levin⁽⁸³⁾) the mother is interviewed intensively concerning her methods of handling the child, and his responses, with reference to the whole of his life to date. This retrospective method, though respectably derived from the child guidance case history, has obvious flaws where scientific accuracy is required, especially over a period of years and where a mother has had several children. The tendency to wishful thinking about one's own actions can only be aggravated by the passage of time; but an interesting step towards correcting it was taken by Becker⁽⁴²⁾ who asked parents to describe both their actual and their ideal relationship with the child, and found that the ideal correlated better with the behaviour of the child (as rated independently by the other parent) than did the report of what was actually done. Altman⁽⁸⁴⁾ also found that judgments of an experienced social worker concerning the mother's attitudes were more closely associated with a child's behaviour than were the mother's own statements about her practices.

Even when objectively ascertained, specific items of parental behaviour are rarely found to predict consequences in the child; such variables as age and method of weaning or toilet training seem far less important than the broader underlying attitudes. To establish these, parents may be asked to express agreement or disagreement with a number of statements of child-rearing policy, from which their attitudes may be scored with respect to variables considered by competent judges to be indicated by the statements in question. A scale of this kind has been developed by Schaefer and Bell.⁽⁸⁵⁾

Alternatively, where actual behaviour is in question, parents may be interviewed on several occasions concerning what took place during the previous twenty-four hours, and the interviews supplemented by observation where possible. These complex data are generally structured by means of a series of ratings which may then be submitted to a factor analysis or similar statistical technique to establish the dimensions in terms of which the observed behaviour can most simply be described. By applying a process known as "circumplex ordering" to ratings made at Berkeley in infancy and preadolescence, Schaefer and Bayley⁽⁸⁶⁾ have been able to demonstrate provisional associations between maternal and child behaviour across time. They find, for example, that maternal love shown to infant boys is moderately predictive of a positive attitude to work in the same boys at twelve; there are other long-term correlations for boys, but not for girls.

It is interesting to compare the corresponding findings of another longitudinal study. Kagan and Moss,⁽¹⁸⁾ at the Fels Institute, found a very high correlation (0.76) between maternal protection of infant sons and their intellectual achievements between ten and fourteen. Maternal hostility in infancy was correlated negatively with intellectual but positively with athletic achievement. For girls the correlations were negligible. When the subjects were interviewed as young adults, however, it was the girls who had been rejected as babies who had developed intellectual mastery ($r = 0.59$) while those who had been over-protected tended to under-achievement ($r = -0.50$): for men the direction of the correlations was reversed. Apart from the contrasting effects of similar treatment for boys and girls, this is an interesting example of what the authors term "the sleeper effect": some types of adolescent and adult behaviour are predicted better from treatment in infancy than from treatment in middle childhood. The writer has also found that ratings of both the intellectual and the emotional quality of the home, made at 2½ years, showed increasing correlations with subsequent measures of intelligence and language up to 8 years; some of these remained significant when the influence of social class was partialled out (Moore, in preparation).

All these findings underline the importance of knowing the home atmosphere in the child's earliest years. Since attitudes to the same child can change considerably over time (Coleman *et al.*⁽¹⁴²⁾) we must be chary of retrospective assessments. The sources and changing course of parental attitudes are themselves an important subject for longitudinal study. Faulty relationships can arise where parents' views of a child are ambivalently coloured by the circumstances of conception, pregnancy or birth (Sontag⁽¹⁶⁾) or by identification of it with rejected elements in spouse, parent or self; but such irrational attitudes can often be modified by psychotherapy (Dalton⁽⁸⁷⁾).

It is equally important to understand how children and adolescents perceive their parents. Andry's⁽⁸⁸⁾ investigations and Stott's⁽⁴¹⁾ case studies illustrate well how jaundiced views of parent figures, colouring the outlook toward authority and society in general, can lead to delinquent behaviour. At Berkeley it has been possible to record the transmission of authority patterns by direct observation of two successive generations, together with the children's perceptions of their fathers (Bronson *et al.*^(89, 90)).

The inter-relationships between parental attitudes and child behaviour were the subject of a conference whose published proceedings present a diversity of provocative views (Glidewell⁽⁹¹⁾).

D. Deviations from Ordinary Family Life

One way of estimating the significance of normal family life for the developing child is to observe what happens when it is lacking or interrupted.

The study of deprived children thus becomes not only of practical but of great theoretical importance.

Bowlby's monograph⁽⁹²⁾ on maternal deprivation has provoked a tremendous amount of controversy; further investigation and theoretical reformulation which is still going on. In a recent W.H.O. publication on the subject⁽⁹³⁾ six authors give their disparate views and Ainsworth⁽⁹⁴⁾ sums up the research findings in a comprehensive essay. Yarrow⁽⁹⁵⁾ and Casler⁽⁹⁶⁾ have also reviewed the field, from contrasting theoretical standpoints. Further progress depends on unravelling the effects of the many variables which so often interact with formidable complexity. In this process, concurrent study plays an indispensable part. Thus, Yarrow⁽⁹⁷⁾ is investigating the adjustment of infants placed with foster-parents in relation to age at placement and type of mothering given; and Rheingold⁽⁹⁸⁾ and other investigators are seeking experimentally to determine the precise ingredients of maternal care (and other forms of stimulation), the lack of which accounts for deprivation effects in institution children. The effects of *temporary* separation have been shown to depend on age (Schaffer and Callender⁽⁹⁹⁾, have noted a sharp change in pattern at 7 months), duration, frequency of visits (Robertson⁽¹⁰⁰⁾), degree of individual care (Burlingham and Freud⁽¹⁰¹⁾; David and Appell⁽¹⁰²⁾), and the emotional atmosphere of the institution, which has even been shown to affect children's physical growth (Widdowson⁽¹⁰³⁾). Equally important, no doubt, are the prior structure of the personality, especially those aspects depending on interpersonal relationships, and the parents' attitudes to the situation and their ways of handling it before the event and especially during the readjustment phase afterwards; but understanding of the processes at work here requires more observational studies like that of Robertson and Bowlby⁽¹⁰⁴⁾ with follow-up at intervals.

The consequences of *daily* separations in early childhood—for example, where the mother goes out to work—though not always unfavourable, appear to depend on many of the same factors (Stolz⁽¹⁰⁵⁾; Siegel^(106, 107, 108)) as well as on the stability of the substitute care. The writer (Moore⁽¹⁰⁹⁾) has attempted to trace the effects on children's behaviour and personality of two alternatives: being left with a daily substitute mother, which faces the child with a dual allegiance; or attending a day nursery, or nursery school, with no one in a truly maternal role in the mother's absence. Comparisons with societies in which multiple mothering is the norm (Mead⁽¹¹⁰⁾), including the special case of the Israeli kibbutzim (Rapaport⁽¹¹¹⁾), should yield additional insight here, but have to be made with caution because of the vastly different contexts.

The part played by the father in a child's development is notoriously neglected in research, chiefly owing to working hours. Of the studies that have surmounted this hurdle, one of the most telling concerns the process of mutual adjustment of father and child after the former's protracted absence on war service (Stolz⁽¹¹²⁾).

In spite of general agreement concerning the ill effects of broken homes and fatherless families, there is an astonishing dearth of studies of children who are in process of being brought up at home without a father. Clinical and projective studies have suggested that such children, especially boys, lack important elements of character formation, and retrospective studies of broken homes (Wardle⁽¹¹³⁾) and of orphans (Brown⁽¹¹⁴⁾) confirm the permanence of impairment in many cases, but again hardly anything is known of the operative conditions, or the circumstances in which persons outside the home may become effective father-substitutes.

E. Other Critical Experiences

Many events besides separation from parents can apparently affect development, but since evidence generally concerns those individuals who have sustained damage, it is usually impossible to say how many have survived comparable experiences without permanent harm. Thus, a diversity of symptoms—sleeping and feeding problems, hyperkinesis, behaviour and learning difficulties—have been reported in children with a history of neonatal anoxia, though findings (reviewed by Graham *et al.*⁽¹³⁸⁾) are inconsistent. A systematic longitudinal follow-up of a sample of anoxic infants with a carefully matched control group (Ucko⁽¹⁵¹⁾) has clarified the situation, revealing a persistent underlying sensitivity in most of the anoxic group which manifests itself in different symptoms at different ages and in a chronic tendency to over-react to change of any kind. There is need of a similar approach to elucidate the effects of the pregnancy stresses found by Stott⁽¹⁵⁾ to be common antecedents of mental defect, personal unforthcomingness and susceptibility to non-infective illness in childhood.

Longitudinal studies have shown that a major illness or temporary malnutrition in childhood causes a temporary slowing of physical growth, normally followed by a recovery spurt which rapidly restores the individual to the course of his former growth curve, or very near it (Tanner⁽⁹⁾). Little is known about the frequency and extent of recovery of mental or behavioural functions disordered by illnesses involving the nervous system.

Experiences that can have a profound influence, traumatic or otherwise, on the developing personalities of children include temporary disturbances in the family (Robertson⁽¹⁵²⁾), the birth of a baby sibling (Greenbaum⁽¹⁵³⁾), death of any loved person (Anthony⁽¹¹⁶⁾), illness (Anna Freud⁽¹³⁹⁾), surgery (Lipton⁽¹⁴⁰⁾; Robertson⁽¹¹⁷⁾) and removal of home (Stubblefield⁽¹¹⁸⁾). Each of these presents a rich field for study of the range of possible consequences, for good or ill, in relation to age, circumstances, preparation of the child and handling of his reactions. Therapeutic intervention at times of crisis, as proposed by Caplan,⁽¹¹⁹⁾ would provide unparalleled opportunities of gathering observations of children undergoing these experiences, who could later be followed up with great profit.

III. INTERACTION BETWEEN THE CHILD AND HIS ENVIRONMENT

So far we have considered, first, aspects of the growing child—physique, abilities, propensities, personality structure—and then some of the influences, permanent and episodic, that impinge upon him, as though organism and environment were distinct and separate entities. Such analysis, necessary as it is at certain stages of science, should not cause us to forget that every person is an integral part of his environment, produced by it and constantly modifying it, from birth onwards. We have somehow to understand, not only how a child is cradled in his culture, reared by his parents and affected by his experiences, but also how he selects his experiences, changes those about him and builds his own life out of the manifold possibilities offered him. How can we do this?

The process of interaction between organism and environment is being investigated at various levels. Fries,⁽¹²⁰⁾ Brody⁽¹²¹⁾ and other analysts have been interested for many years in studying how the characteristics of a particular baby, especially its congenital activity type, call out responses in the mother which may be well or ill adapted to its needs, depending on her own personality; and Sontag⁽¹⁶⁾ approaches the same problem from a different point of view. That adaptation is a continuous two-way process is evident wherever observers have recorded the behaviour of adults and children in interaction (Caldwell and Hersher⁽¹²²⁾; Ainsworth⁽¹⁴¹⁾; Coleman *et al.*⁽¹⁴²⁾). Dalton⁽⁸⁷⁾ offers several detailed studies showing how the members of a family, both adults and children, mutually influence one another's development.

It seems quite probable that some maladjustment is due to nothing more than temperamental incompatibility between parent and child—a lethargic mother with a lively infant, or vice versa, tending constantly to frustrate each other. But many frustrations can be avoided where adults realize that their own behaviour is modifiable, and that their responsibility is not to mould the child to a preconceived ideal, but to let it be a distinct person in its own right. The point made by Thomas's team,⁽⁵⁴⁾ that the "primary reaction patterns" (adaptability, rhythmicity, distractability, intensity, threshold, persistence and the like) which characterize the individual baby's responses from the beginning, determine the type of treatment best suited to him, and should therefore be taken into account by parents and those who advise them, is an attempt to structure the field of operation of parental adaptability, the importance of which Winnicott⁽¹³²⁾ has always urged against those who claim the superiority in all cases of any standard method of child rearing.

Not only do children evoke different handling; they also meet the challenges of life in individual ways from the beginning. In her "Coping Project" Lois Murphy⁽¹²³⁾ and her team observed the behaviour of preschool children to a variety of novel situations; her descriptions, vivid as a well-shot

film, provide the data for a discussion of early ego-structuring patterns, which are to be followed up as the children mature.

A very detailed case study of the complicated manoeuvres of one child of two in the course of adjusting to a short bi-weekly separation from her mother (Janis⁽¹²⁴⁾) illustrates how the process of coping with a problem can modify the whole repertoire of behaviour, and thus shape the course of development to a significant extent. Haan⁽¹⁴³⁾ has recently proposed a classification of healthy coping methods, distinguishing each one from its neurotic defensive counterpart; and has explored the relationships of both (assessed through ratings) to direction of I.Q. change between the ages of 12 and 37.

That fantasy plays an important part in the process of coming to terms with reality is clearly demonstrated by Griffiths,⁽¹²⁵⁾ who in a four-week longitudinal study showed the adaptive trends in the sequences of dreams and stories related to her by five-year-old children. The writer (Moore⁽¹²⁶⁾) has noted an oscillation between realistic and fantastic styles in play which seems to reveal this process in close-up.

Alschuler and Hattwick's⁽¹²⁷⁾ illustrated volumes beautifully disclose how nursery school children use painting and other creative outlets to work through their problems of development and adjustment to events. This need for creative expression and experimentation is one of the foundations for belief in free activity in the early school years, which Gardner's^(128, 129) comparative studies have proved to foster inventiveness, independence of mind and social co-operation.

But if children are to have internal as well as external freedom to make the most of their potentialities, prophylaxis must start at the beginning, with the education of prospective parents before the child is born, and continue in the form of help and guidance available to parent and child whenever required. This was a belief shared by Kris and Senn, who harnessed psychoanalysis, paediatrics and other therapeutic disciplines to an intensive study of a few families in a search for clues to the early diagnosis, and if possible prevention, of personality disturbances (Ritvo *et al.*⁽¹³⁰⁾).

The indivisibility of persons is gradually undermining the artificial barriers men have erected between their fields of interest. Clinician and theorist, physician and psychologist, anthropologist and educator are being brought together by the logic of their common concern with human beings; and their discussions—such as those held at Geneva on the psychobiological development of children (Tanner and Inhelder⁽¹³¹⁾)—sometimes give an exciting glimpse of future possibilities.

Each individual, each unique biological structure with its unique life history, presents the investigator with a single developing identity in a shifting and partly self-determined environment. The human scientist, from a partial knowledge of many such unique systems, has somehow to infer truths of general validity. The techniques at his command and the concepts with which he works are alike rudimentary. Yet even in thirty years he has

made sufficient progress to recognize the crudity of his earlier efforts. Many of the elementary faults of the first longitudinal studies can now be avoided; some of their pioneering zeal may be recaptured as old concepts are outgrown and fresh ventures launched in the light of new discoveries and outlooks. For the development of individuals, which Frank sees as exemplifying the creative process of evolution, is an inexhaustible and perennially fascinating field of study.

ACKNOWLEDGMENT

Thanks are due to the authors and publishers for permission to reproduce the figures in this chapter.

REFERENCES

1. FRANK, L. K. Human development: an emerging scientific discipline. In: Solnit and Provence (1a), 1963.
- 1a. SOLNIT, A. J., and PROVENCE, S. A. *Modern perspectives in child development*. New York: Internat. Univ. Press, 1963.
2. FALKNER, F. (Ed.) *Child development—an international method of study*. Vol. V, Modern problems in pediatrics; Basel: Karger, 1960.
3. JONES, H. E. Problems of method in longitudinal research. *Vita Humana* 1, 93–99, 1958.
4. KESSEN, W. Research design in the study of developmental problems. In: MUSSEN, P. H. (5), 1960.
5. MUSSEN, P. H. *Handbook of research methods in child development*. New York: Wiley, 1960.
6. AMBROSE, J. A. The development of the smiling response in early infancy. In: Foss (6a), 1961.
- 6a. FOSS, B. M. (Ed.) *Determinants of infant behaviour*. London: Methuen, 1961.
7. STONE, A. A., and ONQUÉ, G. C. *Longitudinal studies of child personality*. Cambridge, Mass.: Harvard University Press, 1959.
8. LEWIS, M. *Infant speech*. London: Routledge & Kegan Paul, 2nd. ed., 1959.
9. TANNER, J. M. *Growth at adolescence*. Oxford: Blackwell, 2nd. ed., 1962.
10. TANNER, J. M., WHITEHOUSE, R. H. and TAKAISHI, M. *Standards from birth to maturity for height, weight, height velocity and weight velocity: British children*. *Arch. Diseases of children*, 41, 1966.
11. JONES, H. E. Consistency and change in early maturity. *Vita Humana* 1, 43–51, 1958.
12. STOTT, L. H. *The longitudinal study of individual development*. The Merrill-Palmer School, Detroit, 1955.
13. SHELDON, W. H., and STEVENS, S. S. *The varieties of temperament*. New York: Harper, 1942.
14. DAVIDSON, M. A., et al. The distribution of personality traits in seven-year-old children: a combined psychological, psychiatric and somatotype study. *Brit. J. Educ. Psychol.* 27, 48–61, 1957.
15. PRUGH, D. G. Toward an understanding of psychosomatic concepts in relation to illness in children. In: SOLNIT and PROVENCE (1a), 1963.
16. SONTAG, L. W. Psychosomatics and somatopsychics from birth to three years. In: MERMINOD (16a), 1962.
- 16a. MERMINOD, A. (ed.) *The growth of the normal child during the first three years of life*. Basel: Karger, 1962.

17. JONES, H. E. The longitudinal method in the study of personality. In: ISCOE and STEVENSON, (17a) 1960.
- 17a. ISCOE, I., and STEVENSON, H. W. *Personality development in children*. Univ. of Texas Press, 1960.
18. KAGAN, J., and MOSS, H. A. *Birth to Maturity*. New York: Wiley, 1962.
19. DEARBORN, W. F., and ROTHNEY, J. W. *Predicting the child's development*. Cambridge, Mass.: Sci-Art Publishers, 1941.
20. HONZIK, M. P., MACFARLANE, J. W., and ALLEN, L. The stability of mental test performance between two and eighteen years. *J. of Experiment. Educ.*, December 1948, 310-324, 1948.
21. PINNEAU, S. R., and JONES, H. E. Development of mental abilities. *Review of Educ. Resch.*, 28, 392-400, 1958.
22. BIRREN, J. E. (Ed.) *Handbook of aging and the individual*. Univ. of Chicago Press, 1959.
23. MAURER, K. M. *Intellectual status at maturity as a criterion for selecting items in preschool tests*. Minneapolis: Univ. of Minnesota Press, 1946.
24. GESELL, A., and AMATRUDA, C. S. *Developmental diagnosis—normal and abnormal child development*. London: P. B. Hoeber, Inc. (2nd ed.), 1949.
25. BRUNET, O., and LEZINE, I. *Le développement psychologique de la première enfance*. Paris: P.U.F, 1951.
26. GRIFFITHS, R. *The abilities of babies*. Univ. London Press, 1954.
27. ILLINGWORTH, R. S. The diagnosis of mental deficiency in the first weeks of life. In: *The growth of the normal child during the first three years of life* (16a), 1962.
28. BAYLEY, N. Mental growth during the first three years: a developmental study of 61 children by repeated tests. *Genet. Psychol. Monog.*, 14, 1-92, 1933.
29. BAYLEY, N. Consistency and variability in the growth of intelligence from birth to 18 years. *J. Genet. Psychol.*, 75, 165-196, 1949.
30. SONTAG, L. W., BAKER, C. T., and NELSON, V. L. Mental growth and personality development: a longitudinal study. *Society for Research in Child Development, Inc. Monog.*, 23, Ser. No. 68, 1958.
31. MACFARLANE, J. W., ALLEN, L., and HONZIK, M. P. *A developmental study of the behavior problems of normal children between twenty-one months and fourteen years*. Berkeley: Univ. of California Press, 1954.
32. SIGEL, I. E. How intelligence tests limit understanding of intelligence. *Merrill-Palmer Quarterly*, 9, No. 1, 1963.
33. FLAVELL, J. H. *The developmental psychology of Jean Piaget*. Princeton, N. J.: D. van Nostrand, 1963.
34. SHIRLEY, M. M. *The first two years*. Minneapolis: Univ. of Minnesota Press, 1933.
35. GESELL, A. *Biographies of child development*. London: H. Hamilton.
36. (a) GESELL, A. (ed.) *The first five years of life*. London, Methuen, 1954.
(b) GESELL, A. and ILG, F. L. *The child from five to ten*. London, Hamish Hamilton, 1946.
(c) GESELL, A. et al. *Youth: the years from ten to sixteen*. London, Hamish Hamilton, 1956.
37. ANDERSON, J. E. The prediction of terminal intelligence for infant and preschool tests. *39th Yrbk. Nat. Soc. for the Study of Edn.*, part I, 385-403, 1940.
38. LURIA, A. R., and YODOVITCH, F. J. *Speech and the development of mental processes in the child*. Engl. Transl.: Staples Press, London, 1959.
39. OLSON, W. C. *Child development*. Boston: Heath, 1959.
40. SIMON, M. D. Body configuration and school readiness. *Child Development*, 30, 493-512, 1959.
41. STOTT, D. H. *Delinquency and human nature*. Dunfermline, Fife: Carnegie U.K. Trust, 1950.

42. BECKER, W. C. The relationship of factors in parental ratings of self and each other to the behavior of kindergarten children as rated by mothers, fathers, and teachers. *J. of Consulting Psychology*, **24**, 507-527, 1960.
43. HINDLEY, C. B. The psychological investigations. In: FALKNER, F. (2), 1960.
44. MACFARLANE, J. W. Studies in child guidance. *Monogr. Soc. for Res. in Child Development*, **3**, No. 6, 1938.
45. PECK, R. F., and HAVIGHURST, R. J. *et al.* *The psychology of character development*. New York: Wiley, 1960.
46. SARASON, S. B. *et al.* *Anxiety in elementary school children*. New York: Wiley, 1960.
47. BUEHLER, C. *The child and his family*. London: Routledge and Kegan Paul, 1940.
48. DOLL, E. A. Growth studies in social competence. *Proceedings from the American Association on Mental Deficiency* **44**, 90-96, 1939.
49. BRIDGES, K. B. Social behaviour rating scales for elementary school children. *Brit. J. Educ. Psychol.* **10**, 223-226, 1940.
50. FREUD, A. The role of regression in mental development. In: SOLNIT and PROVENCE (1 a), 1963.
51. MOORE, T., and UCKO, L. E. Night waking in early infancy. *Arch. Dis. Childh.* **32**, 333-342, 1957.
52. NEILON, P. Shirley's babies after fifteen years; a personality study. *J. Genet. Psy.* **73**, 175-186, 1948.
53. ESCALONA, S., and HEIDER, G. M. *Prediction and outcome*. London: Imago, 1959.
54. THOMAS, A., *et al.* *Behavioural individuality in early childhood*. New York Univ. Press, 1963.
55. TUDDENHAM, R. D. The stability of personality ratings over two decades. *Univ. of California Techn. Report No. 3*, 1957.
56. BUIROS, O. K. (Ed.) *Sixth mental measurements year book*. Gryphon Press, New Jersey, 1964.
57. KLOPPER, B. *et al.* *Developments in the Rorschach technique*. (2 Vols.) London: Harrap, 1954-1956.
58. LEDWITH, N. H. *Rorschach responses of elementary school children: a normative study*. Univ. Pittsburgh Press, 1959.
59. LEDWITH, N. H. *A Rorschach study of child development*. Univ. Pittsburgh Press, 1960.
60. HENRY, W. *The analysis of fantasy*. New York: Wiley & Sons, Inc., 1956.
61. BELLAK, L., and BELLAK, S. S. *The CAT and TAT in clinical use*. New York: Grune & Stratton, 1950.
62. LEVIN, H., and WARDWELL, E. The research uses of doll play. *Psychol. Bulletin*, **59**, 27-56, 1962.
63. ROSENZWEIG, S. *Psychodiagnosis: an introduction to tests in the clinical practice of psychodynamics*. New York: Grune & Stratton, 1949.
64. KAPLAN, B. Projective techniques and the theory of action. *Merrill-Palmer Quarterly*, **9**, No. 1, 1963.
65. ROSENWALD, G. C. Projective techniques and the mediation of action: a comment to Kaplan. *Merrill-Palmer Quarterly*, **9**, No. 1, 1963.
66. ANDERSON, J. E. The prediction of adjustment over time. In: ISCOE and STEVENSON, (17a), 1960.
67. GLUECK, S., and GLUECK, E. *Unravelling juvenile delinquency*. New York: Commonwealth Fund, 1950.
68. GLUECK, S. *The problem of delinquency*. Boston: Houghton Mifflin, 1958.
69. MULLIGAN, G. *et al.* Delinquency and symptoms of maladjustment: the findings of a longitudinal study. *Proceedings of the Royal Society of Medicine* **56**, 1083-1086, 1963.
70. GESELL, A. The method of co-twin control. *Science* **95**, 446-448, 1942.
71. ZAZZO, R. *Les jumeaux: le couple et la personne*. Paris: Presses Univ. de France, 1960.

72. SKODAK, M., and SKEELS, H. M. A final follow-up study of one hundred adopted children. *J. Genet. Psychol.* **75**, 85-125, 1949.
73. HONZIK, M. P. Developmental studies of parent-child resemblance in intelligence. *Child Development* **28**, 215-228, 1957.
74. GEBER, M. Développement psycho-moteur des petits Baganda de la naissance à six ans. *Revue Suisse de Psychologie pure et appliquée* **20**, 345-357, 1961.
75. VANDENBERG, S. G. Contributions of twin research to psychology. *Psychol. Bull.*, July 1966 (in press).
76. HINDLEY, C. B. *et. al.* Some differences in infant feeding and elimination training in five European longitudinal samples. *J. Child Psychol. Psychiat.*, **6**, 179-202, 1965.
77. BRONFENBRENNER, U. Toward a theoretical model for the analysis of parent-child relationships in a social context. In: GLIDEWELL (91), 1960.
78. HINDLEY, C. B. Social class influences on the development of ability in the first five years. *Proceedings of the 14th International Congress of Applied Psychology*, Copenhagen: Munksgaard, 1961.
79. BERNSTEIN, B. Aspects of language and learning in the genesis of the social process. *J. Child Psychol. Psychiat.* **1**, 313-324, 1961.
80. KOCH, H. The relation of certain formal attitudes of siblings to attitudes held toward each other and toward their parents. *Mongr. Soc. Res. Ch. Developm.* **25**, 1-124, 1960.
81. DOUGLAS, J. W. B. *The home and the school*. London: MacGibbon & Kee, 1964.
82. CLAUSEN, J. A., and WILLIAMS, J. R. Sociological correlates of child behavior. In: H. W. STEVENSON (Ed.) *Child Psychology* (part I), Chicago, Univ. of Chicago Press, 1963.
83. SEARS, R. R., MACCOBY, E. E., and LEVIN, H. *Patterns of child rearing*. Evanston, Illinois: Row, Peterson & Co, 1957.
84. ALTMAN, C. H. Relationships between maternal attitudes and child personality structure. *Americ. J. of Orthopsychiatry* **28**, 160-169, 1958.
85. SCHAEFER, E., and BELL, R. Q. Development of a parental attitude research instrument. *Child Development* **29**, 339-361, 1958.
86. SCHAEFER, E., and BAYLEY, N. Maternal behavior, child behavior, and their inter-correlations from infancy through adolescence. *Monogr. Soc. for Res. in Child Developm.* **28**, Serial No. 87, 1963.
87. DALTON, R. H. *Personality and social interaction*. Boston: D. C. Heath, 1961.
88. ANDRY, R. G. *Delinquency and parental pathology*. London: Methuen, 1960.
89. BRONSON, W. C., KATTEN, E. S., and LIVSON, N. Patterns of authority and affection in two generations. *J. Abnorm. Soc. Psychol.* **58**, 2, 143-152, 1959.
90. BRONSON, W. C., and LIVSON, N. Changes in the perception of the father-figures over two generations. Unpublished MS.
91. GLIDEWELL, J. C. *Parental attitudes and child behavior*. Springfield, Illinois: Charles C. Thomas, 1960.
92. BOWLBY, J. *Maternal care and mental health*. (2nd. ed.) Geneva: World Health Orgzn, 1952.
93. WORLD HEALTH ORGANIZATION *Deprivation of maternal care: a reassessment of its effects*. Geneva: WHO Public Health Papers No. 14, 1962.
94. AINSWORTH, M. D. The effects of maternal deprivation: a review of findings and controversy in the context of research strategy. In: *WHO* (93), 1962.
95. YARROW, L. J. Maternal deprivation: toward an empirical and conceptual re-evaluation. *Psychol. Bulletin* **58**, 459-490, 1961.
96. CASLER, L. Maternal deprivation: a critical review of the literature. *Mongr. Soc. for Res. in Child Developm.* **26**, Ser. No. 80, 1961.
97. YARROW, L. J. Research in dimensions of early maternal care. *Merrill-Palmer Quarterly* **9**, 101-114, 1963.

98. RHEINGOLD, H. L. The effect of environmental stimulation upon social and exploratory behaviour in the human infant. In: Foss (6a), 1961.
99. SCHAFER, H. R., and CALLENDER, W. M. Psychologic effects of hospitalization in infancy. *Pediatrics* 24, No. 4, 1959.
100. ROBERTSON, J. *Hospitals and children: a parent's-eye view*. London: Gollancz, 1962.
101. BURLINGHAM, D., and FREUD, A. *Infants without families*. London: Allen & Unwin, 1944.
102. DAVID, M., and APPELL, G. A study of nursing care and nurse-infant interaction. In: Foss (6a), 1961.
103. WIDDOWSON, E. M. Mental contentment and physical growth. *Lancet* 1, 1316-1318, 1951.
104. ROBERTSON, J., and BOWLBY, J. Responses of young children to separation from their mothers. *Courrier* 2, 131-139, 1952.
105. STOLZ, L. M. Effects of maternal employment on children: evidence from research. *Child Development* 31, 749-782, 1960.
106. SIEGEL, A. E. *et al.* Dependence and independence in the children of working mothers. *Child Development* 30, 533-546, 1959.
107. SIEGEL, A. E., and STOLZ, L. M. Research issues related to the effects of maternal employment on children, *Symp. pres. at The Soc. for Res. in Child Development*; Pennsylvania: Social Science Research Center, 1961.
108. SIEGEL, A. E. The working mother: a review of research. *Child Development* 34, 513-542, 1963.
109. MOORE, T. Children of full-time and part-time mothers. *Int. J. Soc. Psychiat.* 1, 1964a.
110. MEAD, M. A cultural anthropologist's approach to maternal deprivation. In: *WHO* (93), 1962.
111. RAPAPORT, D. Behavior research in collective settlements in Israel: 7. the study of Kibbutz education and its bearing on the theory of development. *Am. J. of Orthopsychiat.* 28, 587-597, 1958.
112. STOLZ, L. M. *Father relations of war-born children*. Stanford Univ. Press, 1954.
113. WARDLE, C. J. Two generations of broken homes in the genesis of conduct and behaviour disorders in childhood. *Brit. Med. J.* 2, 349-354, 1961.
114. BROWN, F. Depression and childhood bereavement. *J. of Mental Science* 107, 754-777, 1961.
115. STOTT, D. H. Physical and mental handicaps following a disturbed pregnancy. *Lancet*, 1006-1012, 1957.
116. ANTHONY, S. *The child's discovery of death*. London: Kegan Paul, 1940.
117. ROBERTSON, J. A mother's observations on the tonsillectomy of her four-year-old daughter: with comments by Anna Freud. *Psycho. Anal. Stud. of the child* 11, 410-427, 1956.
118. STUBBLEFIELD, R. L. Children's emotional problems aggravated by family moves. *Am. J. of Orthopsychiat.* 25, 120-126, 1955.
119. CAPLAN, G. (Ed.) *Prevention of mental disorders in children*. London: Tavistock Publications, 1961.
120. FRIES, M. E. Some factors in the development and significance of early object relationships. *J. Am. Psychoanal. Assoc.* 9, 669-683, 1961.
121. BRODY, S. *Patterns of mothering*. New York: Internat. Univ. Press, 1956.
122. CALDWELL, B. M., and HERSHER, L. Mother-infant interaction during the first year of life. *Merrill Palmer Quarterly* 10, 119-128, 1964.
123. MURPHY, L. B. *The widening world of childhood*. New York: Basic Books, 1962.
124. JANIS, M. G. *A two-year-old goes to nursery school*. London: Tavistock, 1964.
125. GRIFFITHS, R. *Imagination in Early Childhood*, London: Kegan Paul, 1945.
126. MOORE, T. Realism and fantasy in children's play. *J. Child. Psychol. & Psychiat.* 5, 15-36, 1964.
127. ALSCHULER, R. H., and HATTWICK, L. A. *Painting and Personality*. Chicago Univ. Press, 1951.

128. GARDNER, D. E. M. *Testing results in the infant school*, London: Methuen, 1942.
129. GARDNER, D. E. M. *Long term results of infant school methods*. London: Methuen, 1950.
130. RITVO, S., *et al.* Some relations of constitution, environment, and personality as observed in a longitudinal study of child development: case report. In: SOLNIT and PROVENCE (1a), 1963.
131. TANNER, J. M., and INHELDER, B. (Eds.) *Discussions on child development*, Vols. 1-4. London: Tavistock, 1956-1960.
132. WINNICOTT, D. W. *The child, the family, and the outside world*. London: Penguin books Ltd. 1964.
133. KLACKENBERG-LARSSON, I., and STENSSON, J. The course of mental development in children from 3 months to 3 years in relation to social and other variables. (In preparation.)
134. MOORE, T., and UCKO, L. E. Four to six: constructiveness and conflict in meeting doll play problems. *J. Child Psychol. Psychiat.* 2, 21-47, 1961.
135. UCKO, L. E., and MOORE, T. Parental Roles as seen by young children in doll-play. *Vita Humana* 6, 213-242, 1963.
136. MURPHY, L. B. *Personality development in young children*. New York: Basic Books, Inc. 1956.
137. HONZIK, M. P. Prediction of behaviour from birth to maturity (a review of KAGAN and MOSS, 18). *Merrill Palmer Quarterly* 11, 77-88, 1965.
138. GRAHAM, F. K. *et al.* Development three years after perinatal anoxia. *Psychological Monographs* 76, No. 3, 1962.
139. FREUD, ANNA. The role of bodily illness in the mental life of children. *The Psychoanalytic Study of the Child* 7, 69-81, 1952.
140. LIPTON, S. The psychology of childhood tonsillectomy. *The Psychoanalytic Study of the Child* 17, 363-417, 1962.
141. AINSWORTH, M. The development of infant-mother interaction among the Ganda. In: FOSS, B. M. (ed.): *Determinants of Infant Behaviour II*. London: Methuen, 1963.
142. COLEMAN, R. W., KRIS, E. and PROVENCE, S. The study of variations in early parental attitudes. *Psychoanalytic Study of the Child* 8, 20-47, 1953.
143. HAAN, N. Proposed model of ego functioning: coping and defense mechanisms in relationship to I.Q. change. *Psycholog. Monogr.* 77, No. 8, 1963.
144. VERNON, P. E. *Personality assessment*, London: Methuen, 1964.
145. PIAGET, J. *The language and thought of the child*. New York: Harcourt Brace, 1926.
146. VYGOTSKI, L. S. *Thought and language*. New York: Wiley and Mass. Inst. Tech, 1962.
147. KAGAN, J. American longitudinal research on physiological development. *Child Development*. 35, 1-32, 1964.
148. JONES, H. E. The environment and mental development. In: CARMICHAEL (148a).
- 148a. CARMICHAEL, L. (Ed.) *Manual of child psychology*. New York: Wiley, 1954.
149. MOORE, T. Language and intelligence: a longitudinal study of the first eight years. Part I: Patterns of development in boys and girls. Part II: Environmental correlates of mental growth (in press).
150. NEWMAN, H. H., FREEMAN, F. N. and HOLZINGER, K. J. *Twins: a study of heredity and environment*. Univ. Chicago Press, 1937.
151. UCKO, L. E. A comparative study of asphyxiated and non-asphyxiated boys from birth to five years. *Devel. Med. Child Neurol.* 7, 643-657, 1965.
152. ROBERTSON, JOYCE. Mother-infant interaction from birth to twelve months: two case studies. In: FOSS (152a).
- 152a. FOSS, B. M. (Ed.) *Determinants of infant behaviour III*. London: Methuen, 1965.
153. GREENBAUM, M. The displaced child syndrome. *J. Child Psychol. Psychiat.* 3, 93-100, 1962.
154. HUNTLEY, R. M. C. Heritability of intelligence. In: MEADE and PARKES (154a).
- 154a. MEADE, J. E. and PARKES, A. F. *Genetic and environmental factors in human ability*. Edinburgh: Oliver and Boyd, 1966.

CHAPTER 9

The Comparative Approach to Early Child Development: The Data of Ethology

by ANTHONY AMBROSE†

THE purpose of this chapter is to examine the place of research on animal behaviour in the study of early child development and to review the contribution of recent work towards the solution of some of the basic problems of child psychology and psychiatry. These problems either relate to or arise out of the difficulties in obtaining scientific knowledge about early child development of kinds that are relevant to controversies in a number of important areas. These include the roles of environmental and genetic factors in personality development, the aetiology of mental disorders, and the formulation of policy regarding methods of child-rearing, with all their preventive implications. While the scarcity of knowledge is due in part to difficulties inherent in research on human infancy, it is attributable also to limitations of concept and approach that have impeded much past work. It is in overcoming these difficulties and limitations that the relevance of a comparative approach is here examined.

THE RELEVANCE OF A COMPARATIVE APPROACH

Scope

A comparative approach to the study of early child development is one that includes the study of one or both of two kinds of issue: first, the inferences to be made from similarities and differences in behaviour at other phylogenetic levels as revealed by use of the comparative method; second, the utility at the human level of the concepts and methods that have proved productive in investigation at those levels.

In considering the relevance for human infancy, not only of animal behaviour itself, but also of the ways in which it is studied and conceptualized, a factor to be taken into account is the range of phyletic levels to be included. Lorenz (1950), discussing this in relation to the comparative method, pro-

† This chapter was written while the author was in receipt of U. S. Public Health Service Research Grant No. HD 00363-02 from the National Institute of Child Health and Human Development.

posed that this term should not be applied loosely to all behaviour studies concerned with different forms of life but only to those concerned with closely related species. While such restriction of the scope of comparison is a *sine qua non* for taxonomic study, however, there are many other kinds of study, reviewed by Nissen (1951) and by Diamond and Chow (1962), for which wide ranging comparison is advantageous. For present purposes, while the behavioural research on primates has high priority in its comparative relevance, that on lower mammals and on other phyla such as birds is also found to raise important issues for the study of human child development. There are at least six respects in which a comparative approach can contribute.

Value for Human Developmental Study

1. Identification of Significant New Problems

The discovery, in a number of species, that the whole course of development of behaviour or capacity of a certain kind is influenced by a particular kind of factor or mechanism which, hitherto, had been regarded as either unlikely or theoretically uninteresting, raises the question as to whether anything at all comparable operates at the human level. Examples are the phenomena of imprinting (Hinde, 1961), the influence of stimulation from the young on the hormonal control of maternal behaviour (Rosenblatt and Lehrman, 1963), and the influence of the pregnant mother's emotional state upon her offspring (Ottinger *et al.*, 1963, 1964).

2. Clarification of Concepts

In attempts to explain the occurrence, development or modification of behaviour at both human and sub-human levels, various concepts have long been used whose definition has been either unduly simple or logically unsatisfactory. Any research which clarifies their use as applied to animal behaviour is bound to raise questions concerning their scope and usefulness at the human level. Examples are the concepts of instinct (Beach, 1955b), drive (Hinde, 1959a) and the distinction between innate and learned behaviour (Lehrman, 1953). While such concepts may have served useful purposes in earlier phases of research, it is now evident that their continued use in unmodified form will inevitably either cramp the scope of further research or maintain the existence of pseudo-problems.

3. Advantages of Animals for Empirical Investigation

The advantages of resorting to animals for investigation are not limited to those arising from the impossibility of carrying out certain kinds of study on human beings: for example, the effects of severe stimulus deprivation, noxious stimulation or dangerous drugs, or of surgical or electrical interference with vital structures. For some purposes animal investigation may be both more revealing and more economical. The life history prior

to experimentation can be fully controlled, and the rate of development through all phases to adulthood is usually much more rapid. Simpler organisms also show more clearly the nature of basic mechanisms which in man are obscured by the complexity both of his behaviour and of cultural influences (Broadhurst, 1963).

4. *Development of New Research Techniques*

Animals provide greater opportunity and flexibility for trying out new methods and techniques. It is always possible that any technique shown to be productive in the study of animals, if practicable with humans, could prove just as revealing at this his level. Examples are the use of varied dummy stimuli for discovering to which elements, within a total stimulus situation, an organism actually responds (Tinbergen, 1951; Ahrens, 1954); also use of the techniques of telemetry in the study of social behaviour and of associated physiologic changes (Tobach, 1963; Jensen and Mullins, 1963; Caceres, 1965).

5. *Highlighting Special Features in Child Development*

While the advantages of a comparative approach mentioned so far all stem from the similarities between human and animal, the striking nature of the many differences can also be highly revealing. Animals can enable us to see ourselves in perspective. To see the way child development proceeds, set against the different forms of development in other species, can throw features into relief, the significance of which had not been appreciated because of their familiarity. For example, comparisons by Hebb and Thompson (1954) suggest that, in spite of our advanced capacity for rational thought, both the role of emotionality in development, and also susceptibility to emotional disturbance, is probably greater at the human level than at any other. Phylogenetic contrasts are especially revealing for the biological functions of behaviour. To see behaviour of a kind similar to that in the human occurring in very different contexts at other phyletic levels can help us to understand more fully what humans do it for, for example, play (Lorenz, 1956). Also to see a particular effect, brought about in the human by one kind of behaviour, being achieved in other species by quite different sorts of behaviour can highlight the function of the behaviour in the human: for example, the smiling response in infants (Ambrose, 1960b, 1966).

6. *Establishment of the Scope of Generalizations*

A long-term aim in the study of child development is to achieve generalizations about human developmental processes which either link with or fall within the scope of generalizations made about other species. Only thus can they ultimately become part of a wider framework of scientific knowledge which enables a multitude of facts to be related in terms of a limited number of principles or laws governing ontogenetic development throughout

the animal kingdom. Because of evolutionary differentiation, however, the scope of any similarity, whether demonstrated or inferred, is always likely to be limited. The pitfalls of finding commonalities at whatever theoretical level, can only be avoided by adequate knowledge of species differences. Study of such similarities and differences is, furthermore, the only basis by which evolutionary relationships between behavioural phenomena at human and animal levels can be established.

Grounds for Scepticism

While a comparative approach has long been productive in the fields of anatomy and physiology, its fruitfulness in psychology and psychiatry continues to be open to question. Scepticism derives mainly from the many differences between man and animals. Since this varies greatly in its validity it is important that the different grounds for it be distinguished.

(i) Pitfalls of Comparison

Apart from criticisms based upon philosophical conceptions of the uniqueness of man, the most valid objections to a comparative approach concern failures to take account of the differences between man and animals.

Even between animals of quite closely related species striking differences in behaviour, or in its organization, are to be found. Because of this, any inference made from animal to human behaviour is no basis for a generalization that includes man until supportive evidence, direct or indirect, at the human level is forthcoming. Furthermore, if a similarity in behaviour or development can be demonstrated by comparison, it does not follow that the underlying mechanisms are the same. Neither does it follow that behaviour at the one level is homologous with the similar behaviour at the other; it may only be analogous. Unless the different species in which the similarities are found are closely related it may be difficult to rule out convergence. Without continual exercise of caution against such pitfalls, a comparative approach can be dangerously misleading.

(ii) Omission of Cognitive Factors

Because of the uniqueness in man of the capacity for using symbols in addition to signs, as well as the fact that much of his behaviour is influenced by the use of language, thought and phantasy, a comparative approach is sometimes held to be of little significance for human developmental study. In particular, it has been regarded as irrelevant either to psychoanalysis or to any other aspect of psychiatry concerned with the use of symbols. Scepticism of this kind derives from failure to appreciate both the relations between the different logical levels at which comparative and psycho-analytic approaches operate, as well as the common aspects of the aims of each.

Both are concerned with explaining similarities and differences in the organization and ontogeny of the behaviour of individual human beings. Psycho-analysis, however, is primarily designed to bring about change in

the behaviour characteristic of an individual by influencing his thoughts and feelings. Its theory, therefore, has to be at a metapsychological level and derives from comparison of one individual with another. A comparative approach, by contrast, seeks to throw light on the commonalities and differences in human behaviour by virtue of their similarity to and differences from those characteristic of other species. Because its frame of reference is the species and not the individual its direct theoretical implications have to be at a metabiological level. They concern, for example, the operation of organic factors subserving species-characteristic behaviour and its ontogeny, and their explanation in terms of phylogeny and biological function.

In spite of these differences it must be noted that, at the empirical plane, both approaches operate with the same kind of phenomena, namely, the behaviour of individuals in some kind of environmental setting. In addition, both attempt to explain relations between behaviour and environment in terms of "what goes on inside the individual". Although the respective explanations given are in terms of logically different kinds of concept, it does not follow that the comparative approach is irrelevant either to psychoanalysis in particular or to psychiatry in general. On the contrary, its potential contribution to these is of at least three kinds. First, insofar as any psychological theory has to make biological assumptions, the validity of these can be fundamentally affected by the results of comparative work. Second, since different kinds of theory tend to generate different kinds of prediction, it would be surprising if a comparative approach did not call attention to the significance of certain developmental variables which, from a psychological perspective, might have been missed or neglected. Third, not only is it likely that some psychiatric illness originates at a non-symbolic level, even symbolic malfunction itself is likely to be influenced by organismic factors. Comparative findings may be of direct relevance for understanding both.

(iii) *Past Record of Comparative Approach*

The human species, more than any other, is outstanding in the plasticity of its behaviour and in the relatively small endowment of "innate behaviour patterns", in the very long period of dependence upon parents, and in the pervasive operation of cultural factors. Both because environmental influences clearly play a major role in child development, and because some kinds of animal are particularly suited to study of the basic principles of learning, a comparative approach has long been regarded as potentially fruitful for the study of learning in man.

In assessing the implications for human development of the very extensive work in the field of animal learning there is a view, widespread among both psychiatrists and psychologists, that its earlier promise has not been fulfilled. Attempts to account for a large variety of human developmental phenomena in learning theory terms, including socialization and the genesis of neurosis, through failing to take account of important aspects of the total

human situation, have appeared to provide only partial or over-simplified explanations. Such an assessment has proved to be a further source of scepticism about the relevance of animal behaviour research for human developmental study.

Whatever one's viewpoint on learning research and theory, however, any evaluation of a comparative approach to early child development that is limited solely to that class of work would now be seriously out of date. Over the last two decades, the nature and scope of animal research has been undergoing far-reaching changes. New developments in approach, in theory, and in type of problem investigated have produced results that have led to major re-thinking in psychology about the organization of behaviour and development in animals.

The remainder of the present chapter consists of a description of the main theoretical and empirical trends characteristic of this recent work, followed by a survey of some of its implications for and effects upon the study of early child development.

CHANGING PERSPECTIVES IN ANIMAL BEHAVIOUR RESEARCH

Although learning psychology continues to be a highly productive approach to research on animal behaviour, the new developments with which this chapter is primarily concerned are those deriving from two other approaches, usually named ethology and biopsychology. The differences between all three approaches regarding the kinds of problem studied, methods of investigation, and explanatory concepts employed, stem basically from differing perspectives on the nature of instinct and its role in ontogeny. It is from this standpoint, therefore, that the main characteristics of each approach are here distinguished.

Learning Psychology

This approach emerged largely as a result of rejection of the concept of instinct. This concept, as developed and applied during the nineteenth and early twentieth centuries (Beach, 1955 b), came under attack for several reasons. First, its misuse led to the nominal fallacy by which the proper explanation of behaviour became tantamount to simply naming one or another instinct underlying it; second, it led all too easily to the use of teleological assumptions; third, its formulation, as for example in psycho-analysis, could not be subjected to experimental test.

A fundamental assumption consequently adopted in learning theory has been that all behaviour, with the exception of a few simple reflexes, is acquired. Research has, therefore, been directed predominantly to finding out, first, what conditions of stimulation are necessary both for the acquisition of behaviour and for change in its performance; and, second, what the modification process during learning consists of. Patterned on the original con-

ditioning studies of Pavlov (1927) and of Thorndyke (1914), work on these problems has attempted to achieve accurate measurement of change in performance, and also control over the nature and timing of the conditions of stimulation. Investigation has therefore always been confined to a laboratory setting. This in turn has resulted in the bulk of the work being limited to those animals that can be conveniently and cheaply studied in such a setting: mainly the dog, cat, guinea pig, and most of all, the white rat. The behaviour studied has been typically limited to some simple kind of movement or response, for example salivation, bar pressing, jumping or maze-running, selected so that control over its occurrence can be regulated accurately. Such control is exerted by the use of stimuli simple enough to be precisely defined, such as the sound of a bell or a simple visual pattern and by a drive, such as hunger, thirst or pain, the strength of which can be accurately controlled by appropriate deprivation, reward or punishment. Abnormal behaviour has been studied as a by-product of this work.

No clear solution to either of the two main problems of learning has emerged; theories differ as to whether the essential condition for learning to occur consists of reinforcement by reward or punishment, contiguity of stimulus and response, or both. They also differ as to whether the modification process consists in alteration in the strength of some hypothetical intervening variable, or in perceptual reorganization. Extensive discussion of these issues can be found in Spence (1951), Bugelski (1956), and Hilgard and Marquis (1961).

In spite of its inconclusiveness, learning psychology has done much to promote scientific thinking about animal behaviour. At the same time, however, the intensely atomistic and deductive outlook characteristic of it has resulted in research being guided primarily by theoretical problems and very little by the inductive study of how animals actually behave. Animal infancy, for example, has been studied only to the extent of demonstrating that conditioning can be brought about in that period. On this basis the assumption is usually made that all developmental changes in behaviour, irrespective of age, can be adequately explained on learning principles. Socialization in particular has been treated in this way with little or no study of parent-young interaction. An important consequence has been the widespread adoption of the assumption that the principal drive that enables the young to learn to form social relationships is the same as that commonly employed for achieving conditioning in the laboratory, namely, hunger. Such basic assumptions as these, however, have been seriously called into question by work deriving from the other two approaches.

Ethology

This approach to the study of animal behaviour crystallized around a concept of instinct that was first systematized by Lorenz and Tinbergen in the nineteen thirties and forties. It stems from earlier work by naturalists

and zoologists interested in the ways in which animals, mostly birds, fish and insects, live in the natural environment. Their investigations led to a number of conceptions that subsequently became basic features of the ethological approach. First, the attempt to understand behaviour by the analysis of single items of it will be of limited use unless guided by the results of systematic description of the animal's natural behaviour, in its natural environment, especially its social interactions. Second, behaviour is not always a reaction to a change in environment but can be spontaneous. Third, when animals react to their environment they in fact react to only a very limited number of perceptual cues within it. Fourth, much of the natural behaviour of animals can be divided into two kinds, one variable, the other stereotyped. Recognition both of the extensive part played by stereotyped movement patterns and of their species-specific nature had two important consequences. It showed first that these patterns, like organs or morphological characters, could be used for taxonomic purposes (Whitman, 1898; Heinroth, 1911). Second, it led to the distinction (Craig, 1918) between appetitive behaviour and consummatory act, which took account of the fact that stereotyped movements commonly occur following more variable behaviour of a searching kind; this ceases only when specific stimuli which release the stereotyped movement are perceived.

On the basis of these ideas Lorenz (1935, 1937, 1952), and Tinbergen (1942, 1950, 1951) put forward a conception of instinct that included both appetitive and consummatory behaviour. This had the merits not only of throwing entirely new light upon the complexities of natural animal behaviour, but also of providing a framework which, because it took account of both the fixed and the variable aspects of behaviour, enabled a rapprochement between conventional learning concepts and concepts to do with instinct. Furthermore, this conception of instinct got away from previous ones that were in disrepute (Lorenz, 1950). It was not teleological, because the goal of appetitive behaviour was seen, not as species-preservation, but simply as the performance of a consummatory act. Neither was the conception of the consummatory act as the core of an instinct pseudo-explanatory. Such acts, being absolutely fixed automatisms that occur as reactions only to highly specific sign stimuli, were regarded as being patterned and motivated by central nervous mechanisms that are entirely genically determined. This view was supported, partially by neuro-physiological work, but mainly by the taxonomic significance of these acts.

This perspective on animal behaviour opened up a whole new field of research (Thorpe, 1956b), with emphasis especially upon social behaviour. Descriptions and analyses covered all the main sectors; courtship and mating, care of young, maintenance of territory, attacking of prey and defence from predators. Because of the interest in phylogenetic relationships these studies spanned many different genera and species. While fixed action patterns were initially the central topic of investigation, increasingly both

their relation to variable behaviour and the role of learning in instinctive behaviour have become essential aspects of this work. Through it all the Lorenz-Tinbergen instinct theory has, in principle, been vindicated, though in detail many modifications have proved necessary.

In attempting to understand why an animal in a particular kind of situation does what it does, ethologists have viewed the question "why" in three different ways (Hinde, 1959b): "What makes it do it?", "What does it do it for?", and "How does it come to be able to do it?". These distinct issues, namely of causation, function and development, require quite different methods of investigation.

1. *Causation*

In the study of eliciting stimuli one of the main problems was to identify precisely which stimuli within the total stimulus situation are actually being responded to by an animal. This was done chiefly with the use of models or dummy stimuli (Tinbergen, 1951). For instance, in order to feed, herring gull chicks first beg for food and then peck at the tip of the parent's bill. From comparing responses given to cardboard dummies varying in many different ways, such as in colour and in composition, from the natural bill, it could be concluded that it is specifically the red patch on the underside of the bill that releases the chick's reaction. Tinbergen (1948) concentrated particularly on the study of such releasing stimuli, called *social releasers*, which emanate from the other animals with which an individual interacts. They can consist of any external attribute of an animal, whether of shape, relational property, colour, sound, smell and particularly movement pattern. Some of the main findings concerning sign stimuli include the following. The stimuli that release instinctive responses are usually very specific and nearly always simple, distinctive and improbable. The intensity of many fixed action patterns is related to the releasing stimulus according to a law of heterogeneous summation of the component properties of stimulation. Supernormal dummy stimuli, which exaggerate certain elements of the natural stimulus, are sometimes even more effective than the natural stimulus in eliciting a response. The stimuli that release a response are not always the same as those that direct its orientation.

Of the internal factors affecting response occurrence, most attention has been given to the theoretical construct of the central nervous mechanism that is held both to motivate and to co-ordinate an instinctive behaviour pattern. This has been investigated indirectly in three different ways (Tinbergen, 1951): by the determination, under constant conditions, of spontaneous changes in response-strength, of the minimum intensity of stimulation necessary to release the response, and of the minimum intensity of stimulation necessary to inhibit the response. An approach used particularly by Lorenz (1950) was the keeping of animals in captivity for the study of mis-

carrying behaviour patterns. Under such conditions behaviour patterns may not only occur at low stimulus thresholds, but non-adaptively either in the absence of stimuli normally occurring in the wild, or in the presence of unusual stimuli. Such findings led Lorenz (1950) to put forward a hydraulic theory of the motivation of instincts, but later work (e.g. Hinde, 1956, 1960) made it necessary to abandon this. Tinbergen's hierarchical theory of the organization of instincts (1950), on the other hand, has derived support from the results of such direct methods of investigation as the effects of hormones (Beach, 1948) and of electrical stimulation of specific parts of the brain (von Holst, 1935, 1963).

2. *Function*

The function, or functions, of a behaviour pattern have been described in terms of the part played by the behaviour not only in the life of the individual animal, but primarily in contributing to the existence of its species. In the first case a piece of behaviour may be found to serve some particular function, for example communication, threat, territory maintenance, or distraction of or defence against predators. The second case is essentially a matter of biological function: the manner in which the behaviour is adaptive in dealing with selection pressures and so in contributing to species-survival. On the Darwinian assumption that innate characteristics are explicable only as the outcome of natural selection operating on genetic variation, the functional analysis of an innate behaviour pattern requires the discovery of the particular selection pressures, such as disease, or attacks by predators, which the behaviour plays a part in surmounting.

This kind of analysis is concerned, not just with the immediate effects of the behaviour on the environment but with the subsequent consequences of these. For example, the effect of egg-shell removal by the black-headed gull is to clear the nest of stimuli which, from other experiments, are known to attract the attention of predators; the consequence is that the young have, on that account, a greater chance of survival than otherwise (Tinbergen, 1963).

3. *Development*

Behaviour patterns have been investigated from the standpoint of their mode of development either during phylogeny or during ontogeny.

Because fixed action patterns are regarded as endogenous, organically determined, attempts have been made to trace the course of their evolution and to locate their origin. The method used is that of comparing descriptively similar patterns in closely related species. Homologous movements in phyletically more primitive species have thus been traced, and, from the differences that go along with the similarities, inferences made about the kinds of adaptive change that led up to the pattern in question. This method has been particularly fertile in revealing the evolutionary origins of those

innate behaviour patterns, the form and function of which is specially adapted to releasing innate behaviour in other animals (Tinbergen, 1952; Hinde and Tinbergen, 1958).

Ontogenetic study is concerned not with conventional learning issues but with factors affecting the onset and development of instinctive activities. Studies have focused on the way particular behaviour patterns show differences in the extent or timing of their modifiability, the kinds of stimuli, often very limited, to which they can become linked through learning, the relations between early learning and the later performance of instinctive behaviour patterns, and phyletic differences in the nature and extent of learning during ontogeny. Much of this work has been connected with the study of imprinting and critical periods (Lorenz, 1935). Methods used have included the rearing of animals in isolation, in captivity, or under controlled conditions.

The bulk of ethological research is reported in the journals *Animal Behaviour* and *Behaviour*, and also in *Zeitschrift für Tierpsychologie*. Surveys and descriptions of selected aspects of it have been made by Hinde (1959), Hess (1962) and Tinbergen (1951). A glossary of the main technical terms used in such publications has been compiled by Verplanck (1957). Reviews of the most recent work are now included in the *Annual Review of Psychology* (e.g. Wood-Gush, 1963). In recent years not only has the variety of species investigated been greatly extended, studies have tended to become more detailed and sophisticated to match the increasingly acknowledged complexity of much of the subject matter. Specially notable features have been the growth of interest in relations between instinct and learning (e.g. Thorpe, 1950, 1956a; Hinde, 1954a, 1954b) developments in neurophysiology (e.g. von Holst and von St. Paul, 1963) and in behaviour genetics (e.g. Fuller and Thompson, 1960) and entry into the field of primate studies (e.g. Andrew, 1963; Chance, 1956; De Vore, 1965; Hinde and Rowell, 1962; van Hoof, 1962; Hall, 1962).

As a consequence of this recent work many of the original ethological concepts have undergone modification as repeated testing against hard data has revealed both their potentialities and their limitations (e.g. Thorpe, 1956; Hinde, 1953, 1956, 1960, 1965; Brown, 1964).

Biopsychology

This approach is distinguishable from ethology both by its scepticism of the concept of instinct and by its central interest in learning phenomena; yet it is distinguishable from learning psychology by being much more comparative, physiological and developmental in interest.

Because the orientation has been primarily to biological theory rather than to learning theory, the study of learning has been conducted in the context of a much wider interest in phyletic comparison of modes of adaptation

(e.g. Maier and Schneirla, 1935). It has also been concerned with the qualitative as well as quantitative differences to be found at different levels. This goes not just for learning but for all the factors that affect behaviour whether at anatomical, physiological or psychological levels. Special attention has been paid to the evolutionary differentiation and specialization of many kinds of factor affecting the behavioural functioning of animals (e.g. Schneirla, 1957). Investigations have included the following areas: sensory and cognitive functioning, types of drive or need and their organization in relation to emotion, the relative roles of structure and experience, the plasticity or fixity of behaviour, and the nature and extent of social organization. Studies have ranged from protozoa to mammals, and a feature of particular relevance to the present chapter is the amount of work done on primates (e.g. Yerkes and Yerkes, 1929; Yerkes and Tomilin, 1935; Harlow, 1961; Carpenter, 1964; De Vore, 1965; Schrier, Harlow and Stollnitz, 1965).

Ontogenetic studies, while being approached very much in a phylogenetic context, have not been concerned predominantly with the roles of either learning or instinct in the development of behaviour and perception. Rather have they attempted to elucidate developmental processes in terms of the continued interaction of organismic and environmental factors (e.g. Schneirla, 1956). The behaviour of an animal at any given point of development has been seen essentially as the outcome of many different kinds of variable, whether structural, physiological or external, continuously acting upon each other in varying constellations over preceding stages (e.g. Schneirla and Rosenblatt, 1961). Much work has been done on the effects of early experience on later development (Beach and Jaynes, 1954; Beach, 1955a; Denenberg, 1963), and on critical periods on socialization (e.g. Scott, Fredericson and Fuller, 1951; Jaynes, 1956-58). Increasing attention has been paid to the role of particular variables operating within the mother-young relationship: for example, contact and other forms of stimulation by the mother (Levine, 1960; Harlow and Zimmerman, 1959; Denenberg, 1965), and factors affecting maternal behaviour such as hormones (e.g. Lehrman, 1965) and endocrine stimulation from the young (e.g. Rosenblatt and Lehrman, 1963). Much of the biopsychological work has been published in the *Journal of Comparative and Physiological Psychology*, and numerous studies have been brought together by McGill (1965).

The reciprocal influences between biopsychological and ethological thinking have been considerable, especially as a result of such joint meetings as the Macy Conferences on "Group Processes" (Schaffner, 1955-59), the Paris Conference on "Instinct in Animals and Man" (Masson, 1956), and the Nebraska Symposia on "Current Theory and Research in Motivation" (Jones, 1953 and annually thereafter).

The principal criticism of ethology concerns what is regarded as a false dichotomy between "innate" and "learned". Lehrman (1953), points out that by "innate" Lorenz and Tinbergen mean "not learned" and "genically

determined". They use four main criteria for the innateness of behaviour:

- (a) it be stereotyped and fixed in form;
- (b) it be characteristic of the species;
- (c) it appear in animals raised in isolation from others;
- (d) it develop fully in animals prevented from practising it.

Lehrman mentions, however, that there are many instances of behaviour patterns which, though meeting these criteria, nevertheless appear to depend for their development upon environmental influences; for example in pecking in the chick (Kuo, 1932). Similarly Hebb (1953) lists many instances in mammals where behaviour is not learned yet is fully dependent on learning: for example, fear of strangers in the chimpanzee, which does not have to be practised but does not occur until the animal has learned to recognize his usual caretakers. Hebb argues that, just as the area of a field is fully dependent on both its length and its breadth, so the behaviour of an animal is fully dependent both on heredity and on environment. A distinction between the influence of heredity and of environment is intelligible only in considering *differences* between individuals or between species: a difference in behaviour may be due to a difference in heredity and/or in environment.

While ethologists in general now agree with this view, they do not accept what they believe to be a basic assumption of biopsychologists (e.g. Birch, 1961), namely, that the central nervous system has no inherited structures in it. Lorenz's view (1958, 1960, 1961, 1966) is that biopsychologists under-rate the extent to which inborn structures, whether fixed action patterns, or neural centres such as IRMs, are highly adapted to the environmental situation of the organism. Also in many instances of complex innate behaviour, they overrate the amount of learning that could possibly take place. For example, a swift when hatched and reared in a dark narrow cavity could neither open its wings nor see anything in focus. Yet, when released at normal flying age, it not only flew but was able to interpret binocular disparities and to make an accurate landing. It seems out of the question that such a performance could have been made without the operation of inborn mechanisms. This is not to exclude the operation of learning and, indeed, he claims that innate behaviour patterns nearly always occur interlaced with learned components of behaviour. He believes that learning mechanisms are just as important as other kinds of mechanism that control behaviour and that, like these, they are selected in phylogeny and are manifested in a species-specific manner.

The response of biopsychologists to this position is an epigenetic one (Moltz, 1965). Although genetic factors of course affect behaviour, behaviour is not just an interlaced fabric of endogenous and learned elements. All response systems are synthesized during ontogeny and this synthesis is conditional upon the integrative influence of both endogenous processes and extrinsic stimulative conditions. They regard it as misleading to concep-

tualize maturational elements as functioning isomorphically in behavioral development.

RESEARCH ON INFANCY IN ANIMALS†

The Significance of Early Experience

It is now beyond all reasonable doubt that, in animals ranging from insects to primates, certain events and environmental conditions occurring in infancy have effects that (a) range widely over whole sectors of the animal's later behaviour, social, emotional and intellectual, and (b) are difficult to reverse. Furthermore, the period of maximum vulnerability in infancy is not equated to the whole period during which the animal is dependent upon the mother for survival, and may be limited to that phase when environmental influence has been commonly regarded as entirely subordinate to the role of maturation. This is the period before the animal is even able to recognize its own mother individually.

1. *Imprinting*

Lorenz (1935) observed that the young of several bird species, soon after hatching, begin to follow the first relatively large moving object they see, whether this be the natural mother, some other kind of animal, or Lorenz himself. During subsequent development, not only do they continue to show a marked preference for the kind of object first followed, even if this is different from members of their own species, but their sexual behaviour may also become limited to it. This phenomenon, already noted by naturalists earlier, was named by him "imprinting". Something similar has also been observed in insects (Thorpe, 1944), in fish (Baerends and Baerends van Roon, 1950), and in mammals such as sheep (Scott, 1945), deer (Darling, 1938), zebra and buffalo (Hediger, 1938) and dogs (Scott, 1958).

Lorenz believed imprinting to be a special form of learning, different from ordinary conditioning, and distinguishable by four characteristics:

- (a) it is limited to a very brief period, fixed soon after birth,
- (b) it is irreversible,
- (c) it is completed long before some of the kinds of behaviour which it later affects (e.g. sexual) have developed, and
- (d) it is supra-individual learning, a learning to distinguish and prefer a class of object, rather than a specific individual which is normally learned subsequently.

† Space limitations prevent mention of many specialized animal research topics of interest to psychiatrists concerned with early behaviour development. References that give useful leads into such topics are as follows: behaviour genetics (Vandenberg, 1965), drug effects (Young, 1964), fear (Hebb and Riesen, 1943), phenylketonuria (Waisman and Harlow, 1961), play (Beach, 1945), population density (Calhoun, 1962), sleep (Roffwarg *et al.*, 1966).

The spate of experimental studies into the details of this phenomenon, mostly employing either nidifugous birds or dogs, while modifying these conclusions, have not detracted from the importance of Lorenz's observations. While there are additional respects in which imprinting appears to differ from associative learning (Hess, 1959), notably the development of following in the absence of conventional reward such as feeding or warmth from the object followed, Hinde (1962a) has shown that the view that it is a special form of learning cannot be substantiated. It may only be an extreme case of what is now recognized to be characteristic of learning of all kinds, that they occur more efficiently at one age than at another. Moltz (1960) has shown that many instances of the young bird keeping near the moving object can be explained in terms of anxiety reduction. There are also studies, reviewed by Moltz (1960), which show that it may not be as irreversible as was first supposed, and that the timing of the critical period is not absolutely fixed. Furthermore the determination of the later sexual object may be due, not to this early learning, but to learning occurring at a later phase, though the kind of object then learned is likely to be the same as the earlier one (Fabricius, 1962).

As Lorenz (1935) emphasized, however, the concept of central importance is that of the critical period, during which the nature of the object to which the young is only briefly exposed has such extensive and enduring effects for good or ill on the animal's social behaviour. The biological necessity for such a period, which may last for only a few hours, is understandable in the context of the serious survival problem of most animals in the wild. As Thorpe (1956) points out, it is very urgent that the animal learns as early and as quickly as possible to distinguish its own species from others, many of which are predators, and to associate only with its own. Investigators have therefore given much attention both to the factors that affect the timing of the critical period, and also to the effects of different kinds of stimuli to which the animal is exposed during it.

The timing of the critical period during which following becomes limited to a particular class of object is usually shortly after birth, and its duration may be anything from a few hours in birds, to several weeks in dogs. In mallard ducklings Hess (1959) found that, on varying the age and duration of first exposure to a test-object, maximum imprintability occurs between 13 and 16 hours after hatching, though some individuals will start to follow earlier or later. In dogs the equivalent period, according to Freedman *et al.* (1961), is between 3 and about 10 weeks of age, with maximum imprintability at 7 weeks.

The onset of the period, usually after the neonatal phase, is contingent upon the emergence of the capacity to follow. This refers not just to the maturation of locomotor capacity; it also requires perceptual capacity to see and/or hear the object. In the termination of the period, one of the most significant factors appears to be the development of a fear response.

If the animal is first exposed to the test-object at or after the age at which this has emerged, it will withdraw from it instead of following. If, on the other hand, the animal is able to become familiar with the object before that age, fear will not subsequently be elicited by it but only by strange objects.

Lorenz (1935) pointed out that there are marked differences among avian species in the extent to which imprinting occurs. It is also apparent that there are species differences in the kinds of object which a bird will learn to follow. For example, coots and moorhens will follow inanimate objects of widely varied size and shape, including a large canvas hide, as long as they have the property of motion (Hinde, Thorpe and Vince, 1956). At the other extreme, curlews and godwits will only follow the parent bird. Such species differences are explained in terms of differences in innate perceptual mechanisms, some limiting response to highly specific patterns of stimuli, others being less rigid. The less rigid this mechanism, the greater is the necessity for rapid early learning, but also the greater is the vulnerability to learning the wrong kind of object if the parent-figure is not available. As regards the stimulus properties of the object that elicit following, size, shape and motion are not the only ones; Ramsey (1951), for example, found that the sounds made by the parent-bird, as well as its colouring, play a part; Hess (1959) also found that stimuli varying in either colour or shape differed significantly in the degree to which they elicited following.

Further emphasis on the perceptual aspect of imprinting is given in those studies that call in question whether it is even necessary that following should occur. For example, in contrast to Hess's (1959) finding that in mallard ducklings imprinting occurs in proportion to the amount of following allowed during the critical period, James (1959) found that mere exposure to a flickering light, without following taking place, will result in imprinting to it, and consequent following of it after the critical period. Thorpe (1956) has suggested that imprinting is a fundamental property of the perceptual aspect of instinctive behaviour in general. Song-learning in the chaffinch, for example, has been shown by him to occur during a critical period, different from that of the following response, with equally permanent effects.

More detailed recent reviews of the work on imprinting have been made by Scott (1962), Moltz (1960, 1963), Hinde (1962a), and Sluckin (1964).

2. *Stimulation*

Because of the crucial importance of the parent-figure, not only for feeding the young, keeping it clean and warm, and protecting it from predators, but also in setting the pattern for normal social development, it is still commonly believed that all other aspects of the infant's experience pale into insignificance. Recent work has shown, however, that this is quite

untrue. The infant does not just vegetate between feeds while maturation proceeds apace. As it engages, first in random movements of the eyes and limbs, and later in active exploration by locomotion and by using all its senses, it is, under normal conditions, being exposed to stimulation of varied kinds that is vital for normal development. There is a great deal of learning going on, the effects of which may not be apparent until much later. This is shown by the difference between the behaviour of subjects reared with and without exposure to one or another part of the stimulation present in the natural environment. Research on these lines has been of three kinds.

(a) *Deprivation in One Sensory Mode*

Riesen (1951) reared chimpanzees in the dark up to the age of 16 months and then compared them with normal ones. The normal chimpanzee at that age learns quickly to make appropriate responses to new visual stimuli, and if it gets an electric shock once or twice from a new object it will subsequently effectively avoid it. It welcomes the approach of its caretaker and shows intense fear of strangers. By contrast the dark-reared animal can be shocked repeatedly, day after day, before learning to avoid the object producing it. It will only begin to discriminate visually between friend and stranger after many weeks of living in a lighted environment. This result was not wholly attributable either to deterioration of the visual apparatus, or to absence of sensory stimulation *per se*. A major factor was the absence of varied *patterns* of visual stimulation, as shown by the fact that an animal in an unbroken field of light, with its head in a translucent plastic dome, showed equally great incapacity. Such stimulation is normally obtained in the young infant as it moves its eyes about in an apparently aimless fashion.

Similar dependence on early learning has also been shown for the normal development of somesthetic perception. Nissen, Chow and Semmes (1951) reared a chimpanzee normally in all respects except that use of the hands and feet for exploration of the environment or for stimulation of the body was prevented by enclosing them in cylinders. When tested at 2½ years of age, by comparison with a normal animal, it showed very marked inferiority in the use of these parts, whether in touching a given point, or in learning; and pin-tricks were treated indifferently.

Wolf (1943), working with rats, found that adult animals, temporarily deprived in infancy of either sight or hearing, performed less well than controls in a competitive situation where the use of that sense was required. Other work of this kind has been reviewed by Beach and Jaynes (1954).

(b) *Severe Isolation and Restriction*

Thompson and Melzack (1956) reared dogs from weaning until 8–10 months old in small closed cages. Not only was their movement highly restricted but they never saw human beings or other dogs. At the end of

that time, after being let out and given the same handling and daily exercise as a control group of litter-mates reared in homes, the two groups were observed and tested.

Although the restricted dogs were physically mature they showed, by comparison with the controls, striking differences in behaviour. In exploring a maze they were over-active and took much longer to satisfy their curiosity. In response to strange objects, while the controls ran away without much excitement, they became highly agitated, jumped back and forth near the object, whirled around it and generally displayed much excitement and diffuse activity but little purposeful activity. When followed by a toy car which produced an electric shock on contact, while the normal dogs quickly learned to avoid being hit, they behaved wildly and aimlessly, often ran into the car; it took an average of twenty-five shocks each to learn to avoid it. In this and other tests of response to painful stimuli they behaved as if they were unaware that the source of the pain was in the environment. In problem-solving tests they showed remarkably unintelligent behaviour and, on a series of maze problems, showed about fifty per cent more errors than the controls. In competition for a bone with a normal dog, the restricted ones were completely dominated. In response to the sight of other dogs in pens, instead of approaching, wagging the tail and barking like the normals, they ignored them and seemed a great deal more interested in the inanimate physical surroundings. Even after the dogs had been several years out of restriction they continued to show serious intellectual, emotional and social retardation. Thus, continued normal handling subsequently did little to alter the effects of deprivation of varied sensory stimulation in infancy.

Mason (1963) raised a group of rhesus monkeys, until $2\frac{1}{2}$ years of age, in individual laboratory cages which permitted each to see and hear the others but prevented physical contact. He then compared their social behaviour with that of another group of about the same age which had been captured in the wild and, from about 20 months of age, kept in the laboratory with physical contact permitted. The monkeys in the restricted group showed much lower frequency and duration of sexual behaviour, and the males showed poor integration of the mating pattern. When the restricted males were placed with socially sophisticated females, the latter frequently failed to assume appropriate receptive postures as they did in response to socially sophisticated males. While the wild-born monkeys groomed frequently and for long periods, the restricted ones did so very much less and used no specific postures to invite grooming. A number of tests showed that the restricted monkeys were not attracted to other members of their group, either remaining indifferent to them or actively avoiding contact. Fighting among them was much more frequent and of greater duration and severity than among the wild-borns. Dominance relations among the restricted monkeys were fluctuating and unstable; among the wild-borns

it appeared that the more stable and firmly established social relations tended to forestall all but minor quarrels.

These results were interpreted as highlighting the extent to which the full development of those affective states and sensori-motor co-ordinations that are necessary for normal social relations are heavily dependent upon early learning. Although the social interactions of the rhesus monkey are subserved by many stereotyped postures, gestures and vocalizations that are unlearned (Altmann, 1962), their adaptive use requires the stimulation and direction of social forces in infancy. Consistent with this is Harlow's (1962) experience that laboratory-reared infant monkeys, when adult, would hardly breed at all despite plenty of opportunity. Whether such results were due primarily to early stimulus and social deprivation, however, is not clear, especially in view of a relation, suggested by Nissen (1951) between the monkey's sexual deviations and extensive early exposure to humans.

Other work, mostly with rodents, reviewed by Denenberg (1962b) amply supports the hypothesis, originally put forward by Hebb (1949), that a perceptually complex environment in infancy is essential for the normal development of perceptual, intellectual and social capacities.

(c) *Brief Stimulation*

In contrast to the studies referred to so far, which focus on the effects of prolonged stimulus deprivation, mostly after weaning, there is a whole series concerned with the effects of brief exposure to stimulation between birth and weaning. These have been carried out on laboratory-reared rats and show the contrasts between animals that are left permanently in the constant conditions of their nests and those that are taken out, for only a few minutes daily, and exposed to additional stimulation.

Levine, Chevalier and Korchin (1956) compared the adult behaviour of three groups of rats that had been treated daily in infancy either by brief electric shock, placing in the shock-cage without shock, or being just left in the nest. All the behaviour peculiarities occurred in the group that had not been handled at all. Furthermore, the behaviour of the shocked rats could not be distinguished from those that had received the same handling but no shock. In many studies thereafter (Levine, 1956, 1957b, 1962) in which degree of stress and handling has been varied, invariably it is the nonmanipulated "controls" that show behaviour deviations. These deviations are primarily in the animal's response to stress. In standard behaviour tests, whether the rat is placed in an unfamiliar but neutral box, or in an "open field" area, in contrast to manipulated animals which explore freely, the non-manipulated ones cower in a corner or creep timidly about and defaecate and urinate frequently. In other tests (Levine, 1957a), employing physiological measures, the non-manipulated animals not only are hyperactive to stress, such as toxic injection of glucose, but also show a delayed and a more sustained reaction to it. Not only is this biologically disadvan-

tageous by comparison with the normal rapid and short-lived mobilization of resources at the time of stress, but it can have severely damaging consequences such as stomach ulcers, increased susceptibility to infection and eventually death due to adrenal exhaustion.

The work of Denenberg (1962a, 1962b, 1962c) and associates supports other findings of Levine, namely, that rats handled or shocked between birth and weaning show as adults reduced emotionality, better avoidance learning and enhanced interest in novel stimuli. In a review of these studies Denenberg (1965) concludes that amount of stimulation is also a factor; efficiency of later avoidance learning, for example, is related to number of days handling, or to intensity of shock, by an inverted "U" function.

Handling of rats after weaning, in contrast to before, has been shown by Levine (1956) not to affect emotionality, ability to withstand stress, or avoidance learning. Tapp and Markowitz (1963) found not only that rats handled in infancy differed from controls in brain chemistry, but that pre- and post-weaning experiences have different effects on brain weight and brain cholinesterase. They conclude that, for the rat, pre-weaning handling affects the subcortex whereas post-weaning handling affects the neocortex. Consistent with this is the finding of Denenberg and Morton (1962) that no relationship exists between pre-weaning handling and later problem-solving. Thompson (1958) has put forward a hypothesis that is entirely congruent with such results: that stimulation in the first phase has the function of supplying the necessary arousal to maintain efficiency, whereas that in the second phase supplies the cues necessary for the direction and organization of behaviour.

Interpretation

Although some of the studies outlined have methodological shortcomings, there is a now much increased awareness of the requirements for conclusive work on the significance of very early experience (King, 1958; Fuller and Waller, 1962). The results compel not only complete revision of the long-standing conception of the relative immunity of the very young to environmental influences, but also recognition of the widespread and long-lasting consequences of these. In addition, they negate the long-held assumption in psychological theory that, given normal birth, maturation of the structures that mediate behaviour is as inevitable thereafter as it is presumed to be before. Just as, *in utero*, the normal growth of any organism is absolutely conditional upon its relation to the surrounding nidus, so also the normal development and usage of behaviour that has genically determined patterning, is closely dependent upon environmental conditions.

That the impact of one or another influence can be limited to a critical or sensitive period which, in relation to the life-span, is remarkably brief, is strikingly clear. In a review of the whole problem of critical periods in behavioural development, Scott (1962) distinguishes three different kinds

which may or may not coincide or overlap: periods critical for the effects of infantile stimulation, for the formation of basic social relationships, and for the development of learning capacity. Without implying that later influences cannot have modifying effects, nearly all the research that bears upon critical periods indicates that they usually occur very early in life. That an animal is affected differently by environmental stimulation at differing phases in infancy is understandable since the animal itself does not remain the same. At any given phase, as Thompson (1960) points out, the precise nature of the effect is likely to be a function not only of the kind, amount and timing of the stimulation, but also of the genotype of the animal.

INFANT DEVELOPMENT

In addition to studies of the long-term consequences of early experience there is an increasing amount of animal research which shows the immediate or short-term effects on development of particular kinds of environmental influence.

Pre-natal Factors

In spite of the relative constancy of the intra-uterine environment the mammalian foetus is by no means immune from the effects of the outside environment upon the mother. Pre-natal influences are not limited to those major physiologic changes which, when induced in the mother, result in dramatic morphological defects in the young (e.g. Fraser, 1955). Changes in the behaviour of otherwise normal young can be brought about by varying the stimulation to which the pregnant female is subjected.

Thompson (1957) subjected pregnant rats to stimulation by a buzzer to which, prior to pregnancy, they had been conditioned to react with anxiety. Following birth the young were cross-fostered to control-mothers so that post-natal effects would not confound the results. Young rats whose mothers had been made anxious in pregnancy were found to be more emotional than those born from control-mothers. Ader and Conklin (1963), on the other hand, found that the emotionality of young was significantly reduced by intermittent handling of the pregnant female. Thompson (1960) believes that the particular kind of stressor to which a mother is subjected during pregnancy is not a critical factor. For example, conditioned anxiety, shock and adrenalin injection all produced heightened emotionality in the young. The direction of the effect appears also to be independent of the kind of stressor used, since the same three stressors administered under different conditions to other mothers all produced lowered emotionality in the young. He concludes that the direction of change is determined by at least three variables: amount of stress, the time during pregnancy at which it is given, and the genotype of the animal.

Stimulation During Infancy

That stimulation of young in the period following birth can have major effects on the maturation of function is clear from Levine's (1960) work on rats. Infant rats reared as in the studies cited earlier, with intermittent manipulation, by comparison with controls, showed a more rapid rate of development. Opening of the eyes and achievement of motor co-ordination both occur earlier. Body hair grows faster and there is higher weight at weaning. The vigorous growth continues even after the course of stimulation is terminated at three weeks of age. This appears to be related, not to food intake, but to better utilization of food consumed and also to higher output of the growth hormone from the pituitary. Other differences found at the physiological level (Levine, 1962a) include earlier depletion of adrenal ascorbic acid, higher brain cholesterol, and earlier myelination of the central nervous system.

A different approach was used by Harlow (1958, 1959, 1961, 1962, 1963) in his now famous experiments on the relative significance of feeding and of a number of contact-variables for the development of affectional responses in the rhesus monkey. He not only compared monkeys subjected to different treatments but also studied their preferences in a two-possibility choice situation, together with changes in preference with age.

The initial experiments were designed to evaluate the role of feeding in the development of affection. Baby monkeys were separated from their mothers at birth and placed in cages with two different cubicles attached, one containing a cloth mother-surrogate and the other a wire mother-surrogate, each possessing a nipple. One group of four baby monkeys fed exclusively from cloth surrogates and another group of four fed exclusively from wire surrogates. The measure of affection was contact time on the mothers, recorded automatically and continuously. Whether the babies fed from the cloth surrogate or the wire surrogate, they came to spend 15-17 hours per day on the cloth one. Conversely, whether or not the babies fed from the wire surrogate, they did not spend more than 1-2 hours per day on that one. Such striking results completely contradicted the learning theory expectation that the appearance of the mother's face and body would become associated with the satisfactions obtained from feeding, leading to the formation of the infant's affection towards the feeding surrogate.

During the early weeks, however, feeding does have some effect in contributing to the affectional preference. A group of babies was raised with two cloth surrogates, one with a green cover and one with a brown one. Half the group fed on the green surrogate and half on the brown one. There were no colour preferences, but a significant preference for the lactating surrogate developed early. This disappeared by three months of age.

In addition to the contact variable, rocking and clinging were also investigated. Infants raised with two cloth surrogates, one rocking and the

other stationary, showed that rocking, or kinaesthetic and vestibular stimulation, contributes to the affectional preference over the first five to six months but not thereafter. Infants raised with a cylindrical cloth surrogate and a cloth plane showed, over the first six months, a preference for the plane (which provides a better sleeping and resting surface), but thereafter a preference for the cylindrical cloth surrogate (which enables tight clinging and clasping).

That a cloth surrogate mother is preferred to a feeding wire mother for reasons other than that it acts either as a sleeping platform or as a source of warmth was shown in two ways. First, during the first two weeks of life, three out of four infants fed by the cloth mother, and one out of four fed by the wire mother, left a gauze-covered heating pad on the floor of their cages to spend up to eighteen hours per day on the cloth mother. Second were the studies of infants under conditions of distress or fear, in which they attempt to get to some haven of safety. For example, infants in their home cages were presented with various fear-producing stimuli, such as a moving toy bear. These immediately made them run in terror to a surrogate mother. Whether fed on a cloth or on a wire surrogate, however, the cloth one was much preferred. Contact with this had the remarkable effect of reducing fear so that, within a minute or two, most infants were visually exploring the previously feared object, and some even let go of the mother to approach it.

These and many other experiments demonstrate, in the rhesus monkey, the overwhelming importance of the variable of soft body contact, and the wholly subordinate role of feeding, both for the development of affectional responses and as a source of security in early infancy. In a further series of experiments Harlow has shown that this importance extends to the future maintenance of affectional responses. The monkeys raised with either cloth or wire mothers were separated from their surrogates at about 6 months of age and tested for affectional retention, first during the following nine days, then at one month intervals during the following year. In the first few days after the mother was withdrawn, whereas infants raised with a wire mother lost all the slight responsiveness that had previously developed, those raised with a cloth mother either continued to respond to her at the previous high level or became even more responsive. After a full year's separation the results remained strikingly similar. Preferential responses still favoured the cloth as compared with the wire mother by as much as ninety per cent, indicating that once an affectional bond is formed it is maintained for a long period of time even with little reinforcement of the contact-comfort variable.

Such results must not, however, be interpreted as indicating that this variable, together with nourishment, is a sufficient basis for normal development. At three to five years of age monkeys raised on cloth mothers showed impaired ability to form effective relations with other monkeys as

well as failure to enter into sexual relations. As Harlow points out, the surrogate mother did not cradle the baby or communicate monkey sounds and gestures, did not punish for misbehaviour, and did not attempt to break the infant's bodily attachment before it became a fixation.

The difference between infants raised with real monkey mothers and those raised with cloth mothers becomes apparent early in the development of infant-infant relations. Four infants with monkey mothers, when allowed to be together even for a short period every day, entered into more lively and consistent relations with one another than did four infants raised on cloth mothers. Harlow attributed this contrast to two factors. First, from early in life the infant monkey shows a strong tendency to imitate its mother. Second, the mother normally begins occasionally to reject her young from the third or fourth month; this propels the infant into closer relations with its peers. The importance of this factor was shown by the fact that monkeys raised in the prolonged exclusive company of their real mothers up to seven months of age, when subsequently put together regularly in a play situation, showed no disposition to play together, only an occasional exchange of tentative threats. Also, monkeys raised without any kind of mother, but together with another infant monkey, clung to each other so persistently that they never engaged in any play whatever.

PARENT-YOUNG RELATIONS

In birds and mammals development and experience in infancy occur predominantly within the context of parent-young relations. It is one of the outstanding contributions of recent animal work to have shown that the function of this kind of relation is not limited to the provision of such immediate survival requirements of the infant as food and warmth, excreta removal, and protection from predators. It also includes provision of specific patterns and qualities of stimulation that are essential for optimal emotional and social development. A further major contribution has been to show that this relation is no simple one-way system which, through instinct, just automatically changes into gear following birth and thereafter is bound to operate efficiently in all its aspects. On the contrary, it is a relationship that develops and is continually undergoing change, and its efficiency is conditional upon complex interaction between many different factors in both mother and infant.

Running through the many differences in the way parent-young relations are organized at different phyletic levels (described by Tinbergen, 1953; Burton, 1956; Rheingold, 1963), there are a number of major features that appear to be, in varying degree, common to all. These comprise the use of social releasers, the suppression of tendencies that interfere with adaptive parent-young interaction, the ordering of phases in the development of the mother-infant relation, and the factors that determine the effective operation of maternal behaviour.

According to the Lorenz-Tinbergen theory of instinct all social relations within species of insects, fishes and birds are organized on the basis of genically determined social releasers, that is, sign stimuli in one individual that release instinctive responses in another. As regards many of the co-ordinated interactions between parent and young, Tinbergen (1963) gives numerous examples showing that they are organized in this way. The instinctive behaviour patterns used and the instinctively selective perceptions by which they are controlled, often determined only in critical periods, provide a remarkably adaptive, though rigid, performance of function. For example, feeding in the Nestling Thrush only takes place when the young provide the necessary sign stimulus to the parent, namely gaping, in response to which the parent deposits food in the open mouth. In the absence of this gaping the parent usually swallows the food. In the Redstart, however, if the young are pushed over or on to the rim of the nest by a young cuckoo, the parent does not retrieve them or feed them where they are. They are left to die of cold and starvation while the parent, in response to the intense gaping of the cuckoo, feeds that. Protection of young in the Blackbird is served by the parent's alarm call which suppresses begging in the young and releases crouching in the nest.

How far these principles apply in the mammalian class, especially in the primate order, has not yet been adequately determined by empirical research. All studies to date, however, many of them naturalistic, suggest that they do apply, though with increasing modifiability by learning as the evolutionary scale is ascended. There is no doubt that, from birds to primates, distress calling in the infant, whether elicited by hunger, cold, or predator-attack, immediately releases appropriate action on the part of the parent. In addition to such a specially occurring sign stimulus, there appear to be a number of enduring stimulus properties of the young which serve to release maternal behaviour. In the langur monkey, for example, these are small size, coat colour, quality of movement and of vocalization (Jay, 1963). Lorenz (1943) has suggested that, from birds to primates, parental behaviour is released by the following sign stimuli: a short face in relation to a large forehead, protruding cheeks, and maladjusted limb movements. The relational property of a smaller version of something larger has also been plausibly suggested. In many mammals the smell of the young clearly plays a role. The relative importance of any one, or a combination, of such releasing stimuli remains to be experimentally determined. It is apparent that, as in birds, in mammals the nature of some of them is partially determined by learning, probably more so. The existence of critical periods for learning the releasers of maternal responses has been demonstrated in goats (Blauvelt, 1955) and in rats (Rosenblatt and Lehrman, 1963).

A second general feature of parent-young relations is the mutual suppression of inappropriate responses. In many species the young exhibit stimuli that are capable of releasing attack, eating or even mating by a

parent. Furthermore, the stimuli for parental responses exist not only in the parents' offspring but in the young of other members of the species and even of closely related species; if feeding, for example, were released and directed to these the parents' offspring would die. Even given appropriate parental behaviour, the parents also possess stimuli capable of eliciting a fear response or fleeing in the young.

The problem of suppressing the response that conflicts with the adaptive one is resolved in a number of ways. The probability that the young will release parental and not some other behaviour is high, not just because the young possess the necessary releasing stimuli, but also because the mother has heightened responsiveness to these following physiological changes due to hormonal secretion from pregnancy onward. Heightened maternal responsiveness does not, however, prevent mothers of most species from resisting any approaches from young that are not her own, whether attacking them or just not feeding them. This is because, soon after birth, learning of individual recognition of her own young usually takes place. It is commonly only during the critical period for such learning that adoption of other young can be achieved, by substituting them for or adding them to the natural offspring. As the young grow older and become more like adults the increased likelihood of attack from the parents, on approaching them for feeding for instance, may be dealt with by use of an appeasement posture, such as the submissive posture in young Herring Gulls. Similarly, in cases where the approach of a parent can elicit defensive behaviour in the young, this is suppressed by an appeasement posture shown specially by the parent, as in the Night Heron on arrival at the nest. Other instances are described by Tinbergen (1953).

Adaptive functioning of the mother-young relation requires not only that appropriate responses be made but also that these be appropriately timed according to the stage of development of the infant. For example, although the older infant may require less attention from the mother, it may show reluctance in becoming more independent, and it may be necessary at times for the mother, instead of feeding it or allowing it to follow or to cling closely, to drive it away. In the mother-young relation, both in birds and mammals, but especially in the latter, a number of principal phases can be distinguished in terms of the differing ways in which mothers and young relate to each other. The precise number differs according to the investigator and to the species studied.

Considering the infant first, in the first stage there is urgent need for warmth, protection, food and closeness to the mother. Behavioural capacity is more or less undeveloped and is limited to a number of reflexes and behaviour patterns, the operation of which is, however, vital if the infant is to take full advantage of the mother's frequent and close proximity. Most of these responses can at first be elicited by a wide range of objects, but because of the mother's presence they are released by and reinforced by her. During

this stage first the species, then the individual, characteristics of the mother are gradually learned. Following this, in the second stage, the infant's responses, developing in strength and in number, are either directed specifically to the mother to which it is now actively attached, or carried out only in her close proximity. In the third stage, which may or may not coincide with weaning, there is increasing exploration away from the mother, generally greater independence, and exercise of the rapidly increasing behaviour repertoire, often in play with age-grade companions. When anxiety is aroused, however, there is a ready disposition to return to the security of closeness to the mother. At the fourth stage complete independence from the mother is achieved, and species-characteristic adult patterns of activity are adopted, including sexual relations. These or similar stages have been described in the rat (Rosenblatt and Lehrman, 1963), the dog (Freedman *et al.*, 1961), the rhesus monkey (Harlow, 1962) and the langur monkey (Jay, 1963).

The behaviour of the mother is normally closely synchronized with the changing needs of her young and a number of phases can be similarly distinguished. In the rhesus monkey Harlow (1963) has described three principal ones. The stage of attachment and protection is characterized by maternal responses that are nearly always positive, including cradling, nursing, grooming, restraining when the infant attempts to leave, and retrieving when it does escape. The stage of ambivalence includes both positive and negative responses which gradually become equal in frequency. The negative ones include mouthing or biting, cuffing or slapping, pulling of fur, and rejecting the infant's attempts to get or maintain physical contact. At the stage of separation all physical contact between mother and young ceases. A similar sequence of stages, with variations only in detail, have been described in the cat (Schneirla *et al.*, 1963), the dog (Rheingold, 1963), sheep and goats (Hersher *et al.*, 1963), elk and moose (Altmann, 1963).

The appropriateness of a mother's changing responsiveness to her infant has long been attributed to "maternal instinct", with the assumption that the structure and physiology of the mother automatically and fully equip her for the performance of her functions. Recent work has shown clearly, however, that this is not so. It is certainly true that much maternal function in animals is mediated by instinctive responses in the ethological sense. They are not only released by special stimulus properties of the infant, but are also patterned and motivated by central nervous and hormonal factors. Even at the level of the birds pre-parturitive physiological changes give the mother a "preparedness in advance" (Tinbergen, 1953) to respond to the stimuli from young. Investigations in mammals, however, indicate that the post-parturitive endocrinological basis of maternal behaviour is itself crucially influenced by stimulation from the young. Furthermore, not only does this behaviour continue to be greatly affected by ontogenetic changes in the behaviour of the young, it is also much influenced by past experience.

The importance of distinguishing between the young as a source of stimulation inducing physiological changes in the mother's maternal condition, and the young as a source of stimulation for eliciting maternal responses, has been stressed by Rosenblatt and Lehrman (1963). By removing litter rats from mothers for varying periods after parturition and testing maternal responsiveness against standard stimuli, they showed that, if the young do not stimulate the mother just after parturition, her readiness to perform maternal responses declines rapidly and completely. Subsequently the litter normally continues to contribute to maintenance of the maternal condition, and while decline in maternal responsiveness follows their removal, recovery readily follows their reintroduction. Furthermore, the normal decline of maternal responsiveness with the growth of the young appears to be due not just to their failure to provide stimulation but also to their active opposition to maintenance of the maternal condition.

Maternal responses in the rat comprise nest-building, licking and retrieving. That efficiency in these activities is also dependent upon previous experience is suggested by a number of studies. Riess (1950), for instance, found that rats, reared without opportunity to manipulate or carry solid objects, failed to build normal nests before parturition, and afterwards were poor at retrieving young.

The emotionality of mother rats has also been shown to depend on a number of environmental factors: degree of emotionality of the offspring (Denenberg, 1963), litter size (Seitz, 1958) and experiences received by the mother in her own infancy (Denenberg and Whimbey, 1963).

A critical period in the development of maternal responsiveness, apparent in the rat, has also been shown to occur in the goat (Blauvelt, 1955). If the kid is separated from the mother for only two hours immediately following birth, upon return the mother fails to carry out maternal functions and butts it away as she would normally do only to a strange kid. During this time the mother ordinarily maintains continuous contact with the kid, smelling, tasting, seeing, feeling and hearing it as she licks the amniotic fluids and responds to its bleating. While such a critical period has been confirmed by Hersher *et al.* (1963), they have also shown that formation of the mother-young bond can be brought about at a later time; but it then takes much longer to achieve and involves both enforced contact between them and prevention of the mother butting away the young.

In the rhesus monkey Harlow's (1963) observations indicate that endocrinological factors affecting maternal behaviour include not only pre- and postparturitive ones but also those associated with resumption of the normal ovulatory cycle. As regards the stimulus value of the young, neither being sucked nor sight or sound of the infant are essential for eliciting maternal responsiveness, though they undoubtedly have important incentive effects. The primary factor is ventral-ventral contact clinging by the infant; this was shown by its effect in non-nursing mothers, by providing a normal

mother with an infant that failed to cling, and by its role in the re-establishment of the mother-young relation following separation. The role of the mother's own early experience was shown by the failure of maternal functioning in monkeys which had never known a real monkey mother of their own, and which had been denied normal association with other monkeys. In spite of normal cues from their infants they not only failed in feeding; some showed total indifference, while others became violently abusive. As regards primiparous and multiparous mothers, no significant differences in efficiency were found.

Extended reviews of the roles of sensory and of endocrinological factors in mother-young relations are given by Beach (1948) and by Lehrman (1961).

As a summary of the general nature of the developing mother-young relation, in mammals and to some extent in birds too, a statement by Schneirla (1965) cannot be bettered. "In addition to the specific physiological factors of obvious survival value, there is an encompassing set of interrelationships developing progressively from its beginning in the normal parturitive situation. This is the process depending upon stimulative interchange between mother and young, which rather soon . . . expands and elaborates into what we may call a psychological bond. The later form of attachment between mother and young is a perceptual one, but it has its basis in the physiological processes centering around early stimulative interchange which holds the pair together."

IMPLICATIONS FOR RESEARCH ON EARLY HUMAN DEVELOPMENT

A New Approach to Empirical Investigation

The animal research that has been described has already made major contributions to the solution of developmental problems in child psychiatry and psychology. These contributions amount to no less than a fresh approach to unravelling and investigating the complex multitude of factors that control the organization of behaviour in early childhood, and which determine the course of its development in directions characteristic either of mental health or of mental illness. The kinds of question that are now being asked, in respect both of concepts to be explored and of variables and relations to be investigated, represent a fundamental shift in outlook from those stemming from either psycho-analysis or from learning theory.

This shift, far from detracting from the major contributions of either of those kinds of theory, shows signs not only of clarifying their biological bases, but also of filling the vacuum between them which has had such a suffocating effect upon developmental research. On the one hand the appeal of psycho-analytic genetic hypotheses, stemming from their clinical relevance, has been restricted by an imprecision and a lack of operational

definition that have rendered them experimentally untestable. On the other hand the experimentally sophisticated hypotheses of learning theory have seemed oversimplified, and at times remote from central issues in human development. The new approach, by contrast, is giving rise to conceptualization that appears to be at once both relevant and, in the main, stimulating to empirical research. This approach is anything but uniform, but it can be distinguished by a constellation of modes of thought and investigation, now to be outlined, some of which feature more prominently than others in the work of different investigators.

1. Breakdown of Dichotomy Between Instinct and Learning

Perhaps the most general and far-reaching theoretical advance is the recognition that the development of all behaviour is fully dependent upon both organismic and environmental factors. Maturation of the anatomical and neurophysiological substrates of behaviour, though determined by genes, can only occur in a suitable environment, whether chemical, intra-uterine or social, and its progress and outcome are inevitably influenced by the environment. Similarly, as behaviour is modified by learning, the environmental influences are acting upon organismic characteristics which both channel and limit the scope of their influence. This way of regarding behaviour gets away from the far too simple classification of a given kind of behaviour as either learned or innate. It also negates the consequent assumption that, in man, because the only obviously built-in behaviour comprises a few reflexes, all the rest of his behaviour must be learned. By recognizing that behaviour patterns may differ considerably in the extent to which they can be determined or modified by learning, it makes greater allowance for the possible role of endogenous factors, whether peripheral or central, in the patterning and motivation of human behaviour and perception.

2. The Age Factor and Ontogenetic Study

With ontogenetic changes in perceptual and motor capacities, and in motivation, even a stable environment will be perceived and acted upon differently at one age from another. Because organismic and environmental factors are interdependent in their influence upon behaviour, a particular feature of the environment may at one phase be totally irrelevant, yet at another be of the highest significance. To extrapolate conclusions from empirical findings about one phase by applying them to another is, therefore, unjustifiable and misleading. Age is a variable of crucial importance, though of course it can never be taken for granted that two individuals of the same age are at precisely the same phase in development. In order

to understand how behaviour that is characteristic at any given age is organized, and particularly the nature and extent of its control by environmental or endogenous factors, thoroughgoing ontogenetic study through the preceding phases is essential.

3. *Distinction Between Causation and Function in Understanding Behaviour*

Whatever the fixity or plasticity of the behaviour characteristic of a species, the organismic factors that determine the repertoire, making it more or less different from that of other species, are the result of genic variation and natural selection. Most, if not all, species-specific behaviour, therefore, has potential adaptive value in the environment normally inhabited by the species, in enabling individual members to fulfil the conditions necessary for species-survival. Not only does any given kind of behaviour play a more or less specialized part in serving biological function, its mode of organization is normally also similarly adapted. While investigation of its causation and modifiability is obviously a major objective for understanding why and how it occurs, that is not the same as investigating its biological function. This kind of study is aimed at finding out "what the behaviour is for". It seeks to identify not only the kinds of effect usually brought about by it, but also the consequences of these in the life of the individual. Only by so doing can it show the part played by the behaviour in contributing to the survival of both the social group and the species of which the individual is a member, and thereby establish the biological rationale of the behaviour.

4. *Description of Behaviour in Environmental Context*

Investigation of the causation, functions, or ontogeny of a particular kind of behaviour requires detailed analyses of relations between a number of variables abstracted from the total situation. Success in all such experimental work requires the selection of variables that are relevant to understanding the real life situation, the advancing of fruitful hypotheses concerning the relations to be tested, and the employment of experimental controls that are appropriate. In order to do these effectively essential prerequisites include both knowledge of the behaviour repertoire of the species, extending at least over the phases of the life-cycle under examination, and also some idea as to the main characteristics of the occurrence of the behaviour in question. These include the conditions under which it does and does not occur, the kinds of change undergone by it with repeated occurrence, its characteristic effects on the environment and the kinds of adaptation achieved by it. In the gaining of such preliminary knowledge naturalistic observation is indispensable. A proper empirical basis for attempts to classify and analyse behaviour can only be laid by the description of what actually happens as individuals of the species and age in question go about their life, whether in a natural or an unnatural environment.

5. The Prime Significance of Social Interaction

Of all the kinds of environmental factors that affect the occurrence, development and adaptiveness of behaviour the ones that count most, especially over early phases of ontogeny, are those that mediate social interaction. One reason for this is obvious: the infant is so dependent upon the parents both for the maintenance of optimal physical conditions such as shelter, protection, warmth and cleanliness, and for the meeting of basic homeostatic needs such as hunger and thirst. The frequent closeness of infant and mother, at first usually ensured by the mother, but soon actively sought and maintained by the infant, contains far more, however, than ministrations to the infant's immediate survival needs, important as these are. Not only does the infant provide stimulation to the mother of kinds that contribute to the development and maintenance of efficient maternal functioning, the mother provides stimulation to the infant of kinds that are fundamental for the subsequent normal development of behaviour and psychological functioning. For example, physical contact by the mother affects neurophysiological factors controlling, not only the stability of bodily functioning but also the maturation and arousal of behaviour. It also has anxiety reducing effects that enable adaptive behaviours to appear and operate efficiently without undue interference from conflicting behaviour. As the distance receptors become active, the appearance and sounds of the mother exert increasing influence in both eliciting behaviour and patterning perceptions. In both eliciting and reinforcing the infant's attachment behaviour, and thereby also affecting cognitive functioning, the mother's behaviour in relation to the infant determines the form and extent of the behaviour that actually develops within the range of species-characteristic limits. Others in the early environment, such as parental substitutes and siblings, also contribute to and modify these effects. According to critical period theory, the consequences of these early social interactions for later social, sexual and cognitive functioning are likely to be stable and far-reaching.

6. Multiplicity of Modes of Action of Environmental Factors

Within the total environmental situation of an infant the stimulation that is exerting an influence at any given time is usually only a small proportion of the whole. Such stimulation may be anything from a simple, momentary, stimulus to a complex constellation of stimulus components, sometimes operating through more than one sensory mode. In attempting to identify the stimulus situation that is actually affecting an infant, factors to be taken into account include the following: the general type of perceptual capacity characteristic of species and age; the selectivity of perception due to the pattern of filtering by peripheral and central nervous factors, whether determined endogenously and/or through learning; and the state of the infant at the time, that is, the kind and strength of motivation (internal stimuli), which also have a highly selective effect upon perception.

The effects of stimulation upon behaviour may be either indirect, acting upon neurophysiological conditions only, or direct, affecting particular responses or behaviour sequences. Stimulus control of specific behaviour is not limited to eliciting or releasing it. Eliciting stimuli may themselves act to increase motivation. Furthermore, in the course of a behaviour sequence, the same or other stimuli can act in guiding or orienting behaviour. Finally, a sequence may be brought to an end, or "switched off", by other kinds of stimuli, perception of which results in a sudden fall in motivation. These consummatory stimuli often have a reinforcing effect, acting to increase the probability or the strength of occurrence of the behaviour in that situation on future occasions.

In any given stimulus situation the strength of the characteristic behaviour elicited commonly varies from one occasion to another and may even be zero. While factors resulting in such variation include change in motivation, the frequency of previous responding and the extent of the reinforcement that followed it, the strength of the current stimulus situation must also be taken into account. This can be a matter not only of stimulus intensity but also of the degree of "completeness" of the component stimuli. In general the higher the level of motivation the lower is the strength of stimulation necessary to elicit the behaviour.

The consummatory stimuli sought by appetitive behaviour can be of various kinds: some related to physiological need satisfaction, others of a more general kind to do with levels of complexity and intensity of sensory input needed to maintain optimal functioning. Behaviour is by no means always directed to reducing stimulation. Much of it is concerned with either raising it to or maintaining it at an optimal level.

7. The Components of Complex Behaviour

As development in infancy proceeds, the increasing range and complexity of behaviour in the natural environment sometimes raises problems in deciding what the behaviour under observation is about, that is, in identifying and labelling the kind of behaviour it is. Some simple reactions to environmental change, whether brief or repeated, may be readily classifiable as, for example, a well-known reflex, an orientation movement, or some learned response with obvious adaptive value. Others, however, may be difficult to recognize for a number of reasons: it may seem unrelated to any eliciting stimulus, the motor pattern may be peculiar, or it may seem devoid of adaptive value. Most natural behaviour, furthermore, is more complicated than the type of single response to an isolated stimulus that has for so long been studied in the laboratory. As the infant interacts with, rather than just reacts to, its environment, behaviour usually occurs in sequences of different responses. Many such sequences may, again, be readily classifiable, for example, as appetitive or consummatory behaviour of one kind or another, curiosity behaviour, imitative behaviour, or play.

Others, however, may be difficult to recognize because either the sequence, or one or more responses within it, are perplexing for any of the reasons given above. Investigation of behaviour in animals has shown how revealing can be the analysis of such behaviour into its component parts. It has also given leads as to the variety of ways, adaptive and non-adaptive, in which motor patterns can be constituted.

Analyses of appetitive and consummatory behaviour sequences have shown that three features may help in identifying what the behaviour is "about". First is the behaviour itself: the nature and intensities of the motor patterns that constitute the successive responses. These may be movements, postures or facial expressions. In some cases the motor pattern may vary considerably with changes in response-strength. Second is the orientation of the behaviour, the aspect(s) of the environment to which the motor patterns are directed. Third are the aspects of the environment to which the infant is particularly responsive while showing the behaviour. These are the stimuli which may terminate one kind of response and perhaps elicit others, until the behaviour sequence, having brought the individual into an adaptive relation with the environment, is finally completed.

Fully adaptive behaviour is not always possible, however, as during conflict or thwarting. Conflicting tendencies are frequently activated, not only because the individual may be strongly motivated in two or more ways simultaneously, but because the natural environment usually contains causal factors for more than one kind of behaviour. A variety of possibilities may ensue: redirection of one type of behaviour on to a new object, total inhibition of one or other kind of behaviour, or partial appearance of both in the form of ambivalent movements. In these, elements of each type of behaviour may appear either together or alternately. The elements shown are sometimes limited to preparatory or intention movements, or, if certain elements are common to each conflicting type of behaviour, are limited to these alone.

Thwarting occurs, for example, when the environment does not contain the stimuli necessary either to release or to consummate the appropriate behaviour. Under such conditions the thwarted behaviour may occur in the absence of the appropriate stimuli. Originally called vacuum activities, and later overflow activities, it is probable that these are reactions to sub-optimal stimuli. Both conflict and thwarting can also lead to the appearance of behaviour that would be relevant only in a different context, such as displacement activity, regressive activity, and even immobility. Displacement activities are movements that are probably elicited by stimuli similar to those that elicit them in their appropriate context, but which now become effective because of the inhibition of the behaviour that would have had priority. In restricted or monotonous environments stereotyped movements commonly occur. These often consist of intention movements of inhibited behaviour. Their rigidity and persistence in different contexts may be due

to such factors as the increased sensory input that results, or, if it is an avoidance response, to resistance to extinction.

THE INFLUENCE OF ANIMAL BEHAVIOUR RESEARCH ON RECENT WORK IN CHILD DEVELOPMENT

Because the influence of ethological and biopsychological thought and research on the study of early human development is both rapidly accelerating and highly controversial it is only possible, in the space available, to indicate the broad directions such influence and controversy have been taking. The general trends are of two kinds: theoretical re-examination of the nature and role of endogenous factors in child development, and a major revival of empirical investigation in the period of infancy.

Theoretical Studies

The recent transfer of ideas from animal to human psychology has been undertaken by investigators of three different kinds, each having different reasons for drawing attention to similarities between phenomena at each level: ethologists and biopsychologists because of their phylogenetic perspective, psycho-analysts because of their concern to clarify the concept "instinctive" that is of such central importance in their metapsychology, and child development investigators who have found that their results cannot be explained adequately in terms of either psychoanalytic or learning theory.

1. The Role of Instinct in Man

Because of the parallels between many kinds of human reaction and features of instinctive behaviour in animals, outlined below, Lorenz (1935, 1937) refutes the long-standing assumption that, in human behaviour, the innate recedes far behind the acquired, and Tinbergen (1953) asserts that it is a misconception to believe that the causes of man's behaviour are qualitatively different from the causes of animal behaviour. Notwithstanding the unique extent of rational thinking in man, they remind us that, in both feeding and sexual relations, there is an interlocking of learned and endogenous behaviour, and that intense instinctive motivation, due for example to starvation or to the combined influence of sex hormones and external sexual stimuli, may severely conflict with the force of reasoning. Indeed Fletcher (1957) has shown that there is a long list of human activities, commonly thought of as "instinctive," which conform in detail to the ethological scheme of instinctive behaviour in terms of physiological source, appetitive behaviour, sign stimuli and consummatory behaviour.

Regarding infant behaviour in particular, the phylogenetic antecedents of many responses of the human fetus newborn and infant have been reviewed by Carmichael (1954), Cruikshank (1954), Pratt (1954) and Peiper (1963).

Freedman (1961) has argued that the infant's fear of strangers is the homologue of the flight response found at many phyletic levels. He has also emphasized (1965, 1966) the great need for research designed to clarify the genetic basis of much infant behaviour.

It has always been a basic assumption of psychoanalysis that instinctive motivation plays a fundamental part in human development, and some psycho-analysts have claimed support for this position by drawing attention to similarities between psycho-analytic theory and the findings of ethologists, Bowlby (1953, 1954, 1956, 1960a) has pointed to the similar conceptions of the source, aim and object of an instinct, of the selection of a love object, and of the role of conflict and ambivalence in social relations. Others have attempted to show the relevance of the concepts "innate behaviour pattern" (Schur, 1960) and "displacement activity" (Ostow, 1957) for understanding the origin of human psychological structure. The most detailed attempt to explore the complex problem of the relations between symbolic processes and instinct in man has been made by Kubie (1956). The value of such work has been rejected by biopsychologically oriented human investigators (e.g. Birch, 1961; Bridger, 1962). Their criticisms, however, fail to take account of the recognition in recent ethology of the role of learning in instinctive activity, and they reflect the opposition of a long entrenched tradition of research (Held, 1956). The extensive influence of animal behaviour research on current psycho-analytic thinking is indicated in papers by Ostow (1960), Tidd (1960), Bowlby (1960b), Kaufman (1960), and Rollman-Branch (1960).

Such influence has sometimes led to excessive speculation (e.g. Szekely, 1954) and a cautionary note has been struck by Spitz (1955).

2. Instinctive Communication

Lorenz (1943) and Tinbergen (1953) suggest a number of human parallels to the operation of sign stimuli in animals. For example, the releasing of parental feelings and behaviour by such simple components of a baby as its large forehead, short nose, and unco-ordinated movements; the signalling effect of behaviour under intense fear, anger or fatigue when it immediately spreads from one person to others nearby; the way in which human greeting ceremonies suppress aggression and so allow further contact. Following Darwin (1872) the basic role of innate facial expressions in human communication has been emphasized by Tomkins (1962) and Ambrose (1965). Ahrens (1954) interpreted his own and Spitz's (1946) findings that infant smiling is, up to the sixth month, elicited by nothing more than the human face configuration, as release by a sign stimulus. Likewise Ambrose (1960a) has shown that the infant's smile, in having its characteristic effect of making the mother smile back, talk to or cuddle him, meets all the ethological criteria of a social releaser, and (1966) serves an important function as a greeting response.

3. *Displacement and Conflict Behaviour*

As apparently irrelevant activities carried out under stress, Tinbergen (1953) classifies yawning, fidgetting, thumb-sucking and stroking of skin or hair as displacement activities. Barnett (1955) has shown that the causation of both neurotic and psychosomatic reactions appears to be very similar to that of displacement behaviour. Hinde (1962b) gives numerous examples which show how much abnormal human behaviour resembles the various forms taken by instinctive behaviour in animals under conditions of conflict and thwarting; further resemblances are apparent to responses of animals kept in a restricted environment (Morris, 1964). Ambrose (1963a) has shown that infant laughing shows all the characteristics of an ambivalent movement as defined by ethologists (e.g. Bastock, Morris and Moynihan, 1954).

4. *Establishment of the Infant-Mother Attachment*

Hinde (1961) points out many resemblances between the development of the human mother-child relation and that in nidifugous birds. These include the close proximity of infant to mother, gradual learning of the individual characteristics of the mother, the fact that many responses appropriate to the mother can at first be elicited by quite a wide range of objects, the functional equivalence of crying and distress-calling, the ambivalent nature of the child's behaviour towards its mother, and, in the establishment of the relation between them, the importance of social factors such as contact and vocalization in addition to the meeting of primary physical needs.

Harlow (1964a, 1964b) has taken this last point much further by explicitly rejecting the learning theory explanation of the establishment of the human infant's relation to its mother. Because of his results with the rhesus monkey on the major role both of contact and other forms of external stimulation, and of the infant's spontaneous curiosity and exploratory behaviour, he disclaims the idea that the basic motive underlying the infant's affection for its mother is hunger. As a result of his findings (1959, 1962) both on the nature of learning and on the ontogeny of learning ability, he regards the idea that learning is essentially dependent upon drive reduction as false.

The only coherent theory of the mother-child relation that is based, not on learning theory but on ethological instinct theory, has been advanced by Bowlby (1958). After weighing the comparative evidence he concludes that the human infant's attachment behaviour consists of five primary instinctive responses: crying, sucking, smiling, clinging and following. Organized independently, each with its own characteristic causation, ontogeny, and function, these become directed specifically to the mother-figure. Although this process depends partly upon learning, it is not based upon learning to want the mother because she is the source of food. Although this theory is in need of further refinement, the only significant criticisms of it have come from

conventional psycho-analytic (Murphy, 1964) and learning theory (Gewirtz, 1961) viewpoints. Foss (1964) has warned against concluding, from the similarities in the attachments that both humans and animals develop, that the mechanisms leading to attachment are the same at different phyletic levels.

5. Critical Periods

Both Lorenz (1935) and Bowlby (1953) have pointed to the similarities between imprinting and the very lasting object-fixations of human beings, including fetishes, which are both dependent upon early childhood impressions and largely irreversible. Some of the general principles of socialization in higher vertebrates that seem to be applicable to man have been described by Collias (1962) and by Scott (1963), with emphasis on the existence of critical periods. Bronson (1962, 1965) and Brody and Axelrad (1966) have shown grounds for expecting that critical learning periods will be found in early human development. The possibility that one period critical for the development of human social responsiveness occurs within the first six months of life has been explored by Gray (1958), Caldwell (1962) and Ambrose (1963b) with special reference to the ontogeny of the smiling response, although Walters and Parke (1965) have argued against it. The phylogenetic status of the smiling response has been explored by Schneirla (1959) and Ambrose (1960b). A theoretical rationale for the critical significance of experience in the first few months has been provided by Bruner (1959) in terms of the programming effect of very early stimulation.

6. Infant Stimulation

The immense importance for human development of the animal research on stimulation and perceptual experience in infancy has been shown in some detail by Thompson (1955, 1958, 1962), who emphasizes both the arousing and the organizing functions served by these. Levine (1962a, 1962b) in discussing the possible bearing of his work on human infancy has revealed the falsity of a basic assumption underlying the work of Gesell (e.g. 1954), namely that the maturation of behaviour proceeds in an environmental vacuum. Schneirla (1965) holds that, in humans as in all vertebrates, the primary agencies in the early functional development of the "approach-processes" basic to social capacity are not only maturational factors but also low intensity stimuli without which approach responses cannot be elicited and reinforced.

Empirical Studies

Apart from the long continued work of Piaget, the revival of empirical research on human infancy is, at least in Europe largely a consequence of the recent theoretical developments associated with animal behaviour research. These developments have not only drawn attention to the developmental

significance of this early period, but also enabled the formulation of eminently practicable research problems. They have also led to a different emphasis in investigation. The pre-war studies of the Viennese, Iowa and Gesellian child investigators were focused primarily upon infant behaviour conceived *sui generis*, with explanation of developmental change referring merely to learning or maturation. By contrast, recent work has conceived infant behaviour as part of an interactive system composed of infant and mother, and developmental research as concerned to identify the particular kinds of factor, maternal and organismic, which affect the organization of behaviour (Ambrose, 1964). The following are a few examples of recent or current studies of early human behaviour that stem, directly or indirectly, from a comparative approach.

(a) *Descriptive Studies*

Wolff (1959) has made direct observations of newborn infant behaviour and interactions in the natural environment continuously over twenty-four hour periods, and (1963) of the family environment of newborn infants during frequent visits over several months. Blake (1957) studied the development of interaction between several pairs of infants and mothers in the home-setting on the basis of regular weekly direct observations. Some of the problems of observing and recording continuous human behaviour in the natural environment have been examined by Barker (1963). The value of employing a variable "free-field" situation for the observation of exploratory and other kinds of behaviour has been shown by Hutt, Hutt and Ounsted (1963, 1965). Some animal ethologists are undertaking descriptive studies of children in various environments, for example, Blurton-Jones in a nursery setting, and Eibl-Eibesfeldt in studying forms of emotional expression in a variety of cultures.

(b) *Development of Attachment Behaviour*

Bowlby's (1958) theory has given rise to three studies of the development of the infant's relation to his mother. Ainsworth (1963) made a longitudinal study of twenty-eight Ganda families with infants within the age range of birth to 2 years, relating the various patterns of attachment behaviour observed to differences in maternal personality and care. She is now making a similar study in an American culture. Schaffer and Emerson (1964) made a longitudinal study, based upon regular reporting by sixty mothers in interview, of how their infants reacted to brief separations; they traced the onset, direction and changes in intensity of the attachment behaviour. Caldwell (1962) has investigated the development, over the early months, of the infant's visual following of the mother. In addition Rheingold and Keene (1965) have made a study of the ways in which human and sub-human infants are carried by their mothers.

(c) *Critical Periods and Early Learning*

As yet there have been no direct attempts to identify critical periods in early human development, although Gunther (1955) claims that her findings on sucking in the newborn justify the conclusion that the first 5 days after birth constitute a critical period in the development of this behaviour. There are still many unknowns about the general nature and course of learning in human infancy. Tidd and Beckwith are trying to clarify the issues through the study of imprinting in animals. Salk (1962) has examined the imprinting effects of the sound of the mother's heartbeat, and Freedman (1966) has begun to examine the effects of kinaesthetic stimulation on premature newborns. Lipsitt (1963, 1966) has reviewed the work done so far on the nature and extent of human learning over the first year, and is himself experimentally studying conditioning over this period. Caldwell is investigating the course of learning over the first 3 years.

(d) *Fixed Action Patterns, Stereotypes and Reflexes*

Following earlier work reviewed by Pratt (1954) and Peiper (1963), Prechtl (1964, 1965) and others have investigated the nature, causation and significance of the total repertoire of reflexes in the newborn. He has also made a detailed analysis of the rooting response (1958). Blauvelt (1961) has studied the orientation of the newborn in interaction with the mother. Ethological investigations are being carried out on the causation and function of stereotyped behaviour in children, both normal and abnormal, by Hutt and Hutt (1965), Francis and Blurton-Jones (1966). The extensive work on the causation of the smiling response has been reviewed by Ambrose (1960b), who has also studied the course of its development (1961) and its biological function (1960b). Increasing attention is also being given to study of crying (e.g. Wasz-Hockert, Prechtl and Lind, Ambrose). Furthermore, just as the study of **autonomic responses in animals** has been shown (Morris, 1956) to assist interpretation of the significance of behaviour, so the physiologic responses of infants, such as changes in heart-rate, respiration-rate and muscle tension, are coming under investigation (e.g. Richmond and Lipton, 1959, Lipton and Steinschneider, 1964).

REFERENCES

- ADER, R. and CONKLIN, P. M. (1963) Handling of pregnant rats: effects on emotionality of their offspring, *Science* 142, 411-412.
- AHRENS, R. (1954) Beitrag zur Entwicklung des Physiognomie und Mimikerkennens, *Zeit. f. Experimentelle und Angewandte Psychol.*, II, 3, 412-454; II, 4, 599-633.
- AINSWORTH, M. (1963) The development of infant-mother interaction among the Ganda. In: Foss, B. M. (Ed.), *Determinants of Infant Behaviour* II. London: Methuen.
- ALTMANN, M. (1963) Naturalistic studies of maternal care in moose and elk. In: Rheingold, H. I. (Ed.), *Maternal Behaviour in Mammals*, New York: Wiley.
- ALTMANN, S. A. (1962) Social behavior of anthropoid primates: analysis of recent concepts. In: Bliss, E. L. (Ed.), *Roots of Behaviour*, New York: Harper.

- AMBROSE, J. A. (1960a) Factors affecting the development of the smiling response as a social releaser in human infancy. Unpublished paper read to the Association for the Study of Animal Behaviour, London.
- AMBROSE, J. A. (1960b) The smiling and related responses in early human infancy: an experimental and theoretical study of their course and significance. Unpublished Ph. D. thesis, Univ. London.
- AMBROSE, J. A. (1961) The development of the smiling response in early infancy. In: FOSS, B. M. (Ed.), *Determinants of Infant Behaviour* I. London: Methuen.
- AMBROSE, J. A. (1963a) The age of onset of ambivalence in early infancy: indications from the study of laughing, *J. Child. Psychol. Psychiat.* 4, 167-181.
- AMBROSE, J. A. (1963b) The concept of a critical period for the development of social responsiveness in early human development. In: FOSS, B. M. (Ed.), *Determinants of Infant Behaviour* II. London: Methuen.
- AMBROSE, J. A. (1964) Personality: the first five years. *New Society* 4, 110, 5th November.
- AMBROSE, J. A. (1965) The study of human social organization: a review of current concepts and approaches, *Symp. zool. Soc. Lond.* 14, 301-314.
- AMBROSE, J. A. (1966) Ritualization in the human infant-mother bond. In: Huxley, J. S. (Ed.), *Phil. Trans. roy. Soc. B.* In press.
- ANDREW, R. J. (1963) The origin and evolution of the calls and facial expressions of the primates, *Behav.* 20, 1-2, 1-110.
- BAERENDS, G. P., and BAERENDS VAN ROON, J. M. (1950) An introduction to the study of ethology of cichlid fishes. *Behaviour Suppl.* 1, 1-243.
- BARKER, R. G. (1963) (Ed.), *The Stream of Behavior; Explorations of its Structure and Content*, New York: Appleton-Century-Crofts.
- BARNETT, S. A. (1955) "Displacement" behaviour and "psychosomatic" disorder. *The Lancet*, Dec. 10, 1203-1208.
- BASTOCK, M., MORRIS, D., and MOYNIHAN, M. (1954) Some comments on conflict and thwarting in animals, *Behaviour* 6, 66-84.
- BEACH, F. A. (1945) Current concepts of play in animals, *Am. Naturalist* 79, 785, 523-541.
- BEACH, F. A. (1948) *Hormones and Behavior*, New York: Hoeber.
- BEACH, F. A. (1950) The snark was a boojum. In: McGill, T. E. (Ed.), (1965), *Readings in Animal Behavior*, New York: Holt, Rinehart and Winston.
- BEACH, F. A. (1955a) Ontogeny and living systems. In: Schaffner, B. (Ed.), *Group Processes*, New York: Josiah Macy Jr. Foundation.
- BEACH, F. A. (1955b) The descent of instinct, *Psych. Rev.* 62, 6, 401-410.
- BEACH, F. A., and JAYNES, J. (1954) The effects of early experience upon the behavior of animals. *Psychol. Bull.* 51, 3, 239-263.
- BIRCH, H. G. (1961) The pertinence of animal investigation for a science of human behavior, *Am. J. Orthopsych.* 31, 267-275.
- BLAKE, Y. (1957) Infantile development with special reference to the mother-child relationship. Unpublished Ph.D. thesis. Univer. of Witwatersrand, Johannesburg.
- BLAUVELT, H. (1955) Dynamics of the mother-newborn relationship in goats. In: Schaffner, B. (Ed.), *Group Processes*, New York: Josiah Macy Jr. Foundation.
- BLAUVELT, H., and MCKENNA, J. (1961) Mother-neonate interaction: capacity of the human newborn for orientation. In: Foss, B. M. (Ed.), *Determinants of Infant Behaviour* I, London: Methuen.
- BLURTON-JONES, N. (1966) An ethological study of some aspects of social behaviour in nursery schools. In: Morris, D. (Ed.), *Primate Ethology*, London: Weidenfeld and Nicholson.
- BOWLBY, J. (1953) Critical phases in the development of social responses in man and other animals. In: Tanner, J. M. (Ed.), *Prospects in Psychiatric Research*, Oxford: Blackwell.

- BOWLBY, J. (1954) The biological background of human behaviour. Unpublished paper read to Royal Medico-Psychological Association, London.
- BOWLBY, J. (1956) In: Tanner, J. M. and Inhelder, B. (Eds.), *Discussions on Child Development*, London: Tavistock.
- BOWLBY, J. (1958) The nature of the child's tie to his mother. *Int. J. Psychoanal.* **39**, 1-24.
- BOWLBY, J. (1960a) In: Tanner, J. M. and Inhelder, B. (Eds.), *Discussions on Child Development*, London: Tavistock.
- BOWLBY, J. (1960b) Symposium on psychoanalysis and ethology II, *Int. J. Psychoanal.* **41**, 313-317.
- BRIDGER, W. H. (1962) Ethological concepts and human development. In: *Recent Advances in Biological Psychiatry*, 4. New York: Plenum Press.
- BROADHURST, P. L. (1963) *The Science of Animal Behaviour*, London: Penguin.
- BRODY, S., and AXELRAD, S. (1966) *Anxiety, Socialization, and Ego Formation in Infancy*. In press.
- BRONSON, G. (1962) Critical periods in human development, *Brit. J. med. Psychol.* **35**, 127-133.
- BRONSON, G. (1965) The hierarchical organization of the central nervous system: implications for learning processes and critical periods in early development, *Behavioral Sci.* **10**, 1, 7-25.
- BROWN, J. L. (1964) Goals and terminology in ethological motivation research, *Anim. Behav.* **12**, 4, 538-541.
- BRUNER, J. S. (1959) The cognitive consequences of early sensory deprivation (special article). *Psychosom. Med.* **21**, 2, 89-95.
- BUGELSKI, B. R. (1956) *The Psychology of Learning*. New York: Holt.
- BURTON, M. (1956) *Infancy in Animals*. London: Hutchinson.
- CACERES, C. A. (1965) *Biomedical Telemetry*, New York: Academic Press.
- CALDWELL, B. M. (1962) The usefulness of the critical period hypothesis in the study of filiative behaviour, *Merrill-Palmer Q., Behav. and Development* **8**, 4, 229-242.
- CALDWELL, B. M., and HONIG, A. S. (1967) Visual following, attachment and alerting. In: Foss, B. M. (Ed.), *Determinants of Infant Behaviour IV*, London: Methuen. In press.
- CALHOUN, J. B. (1962) Population density and social pathology. *Sci. Amer.* **206**, 139-148.
- CARMICHAEL, L. (1954) The onset and early development of behaviour. In: Carmichael, L. (Ed.), *Manual of Child Psychology*, New York: Wiley.
- CARPENTER, C. R. (1964) *Naturalistic Behavior of Nonhuman Primates*, Pennsylvania Univer. Press.
- CHANCE, M. R. A. (1956) Social structure of a colony of *Macaca mulatta*, *Brit. J. Anim. Behav.* **4**, 1, 1-13.
- COLLIAS, N. E. (1962) Social development in birds and mammals. In: Bliss, E. L. (Ed.), *Roots of Behavior*, New York: Harper.
- CRAIG, W. (1918) Appetites and aversions as constituents of instincts, *Biol. Bull.* **34**, 91-107.
- CRUIKSHANK, R. M. (1954) Animal infancy. In: Carmichael, L. (Ed.), *Manual of Child Psychology*, New York: Wiley.
- DARLING, F. F. (1938) *Wild Country*, London: Cambridge Univer. Press.
- DARWIN, C. (1872) *The Expression of the Emotions in Man and Animals*, New York: Philosophical Library.
- DENENBERG, V. H. (1962a) An attempt to isolate critical periods of development in the rat, *J. comp. physiol. Psychol.* **55**, 813-815.
- DENENBERG, V. H. (1962b) The effects of early experience. In: Hafez, E. S. E. (Ed.), *The Behaviour of Domestic Animals*, London: Bailliere, Tindall & Cox.
- DENENBERG, V. H. (1963) Early experience and emotional development, *Sc. Amer.* **208**, 138-146.

- DENENBERG, V. H. (1965) Stimulation before birth, stimulation between birth and weaning, In press: O. J. Harvey (Ed.).
- DENENBERG, V. H., and MORTON, J. R. C. (1962) Effects of preweaning and postweaning manipulations upon problem solving behavior, *J. comp. physiol. Psychol.* **16**, 72-76.
- DENENBERG, V. H. and WHIMBEY, A. E. (1963) Behavior of adult rats is modified by the experiences their mothers had as infants, *Science* **142**, 1192-1193.
- DE VORE, I. (1965) *Primate Behavior: Field Studies of Monkeys and Apes*, New York: Holt, Rinehart and Winston.
- DIAMOND, I. T., and CHOW, K. L. (1962) Biological Psychology. In: Koch, S.: *Psychology: A Study of a Science*, Vol. 4, *Biologically Oriented Fields*. New York: McGraw-Hill.
- FABRICIUS, E. (1962) Some aspects of imprinting in birds. In: *Imprinting and Early Learning, Symp. Zool. Soc. Lond.*, **8**, 139-148.
- FLETCHER, R. (1957) *Instinct in Man*. London: Allen & Unwin.
- FOSS, B. M. (1964) The comparative study of affection. Paper read to the British Association for the Advancement of Science. Unpublished.
- FRASER, F. C. (1955) Thoughts on the aetiology of clefts of the palate and the lip, *Acta Genet., Stat. Med.* **5**, 358-369.
- FREEDMAN, D. G. (1961) The infant's fear of strangers and the flight response, *J. child Psychol. Psychiat.* **2**, **4**, 242-248.
- FREEDMAN, D. G., KING, J. A., and ELLIOTT, E. (1961) Critical period in the social development of dogs, *Science* **133**, 1016-1017.
- FREEDMAN, D. G. (1965) An ethological approach to the genetical study of human behaviour. In: Vandenberg, S. (Ed.), *Methods and Goals in Human Behavior Genetics*.
- FREEDMAN, D. G. (1966) An evolutionary framework for behavioral research. Paper read at 2nd Conf. on Human Behavior Genetics, Louisville.
- FREEDMAN, D. G., BOVERMAN, H., and FREEDMAN, N. (1966) Effects of kinaesthetic stimulation on weight-gain and on simling in premature infants. Paper read to American Orthopsychiatric Association, San Francisco, Unpublished.
- FULLER, J. L., and THOMPSON, W. R. (1960) *Behavior Genetics*, New York: Wiley.
- FULLER, J. L., and WALLER, M. B. (1962) Is early experience different? In: Bliss, E. L. (Ed.), *Roots of Behavior*, New York: Harper.
- GESELL, A. (1954) The ontogenesis of infant behavior. In: Carmichael, L. (Ed.), *Manual of Child Psychology*, 2nd ed. New York: Wiley.
- GEWIRTZ, J. L. (1961) A learning analysis of the effects of normal stimulation, privation and deprivation on the acquisition of social motivation and attachment. In: Foss, B. M. (Ed.), *Determinants of Infant Behaviour*, London: Methuen.
- GRAY, P. H. (1958) Theory and evidence of imprinting in human infants, *J. Psychol.* **46**, 155-156.
- GUNTHER, M. (1955) Instinct in the nursing couple, *Lancet*, Mar. 19, 575-578.
- HALL, K. R. L. (1962) The sexual, agonistic and derived social behaviour patterns of the wild Chacma Baboon, *Proc. Zool. Soc. Lond.* **139**, **2**, 283-327.
- HARLOW, H. F. (1958) The nature of love, *Amer. Psychol.* **13**, **12**, 673-685.
- HARLOW, H. F. (1959) The development of learning in the rhesus monkey, *Amer. Scientist*, **47**, **4**, 459-479.
- HARLOW, H. F. (1961) The development of affectional patterns in infant monkeys. In: Foss, B. N. (Ed.), *Determinants of Infant Behaviour*, London: Methuen.
- HARLOW, H. F. (1962) Development of affection in primates. In: Bliss, E. L. (Ed.), *Roots of Behavior*, New York: Harper.
- HARLOW, H. F. (1963) The maternal affectional system. In: Foss, B. M. (Ed.), *Determinants of Infant Behaviour*, London: Methuen.

- HARLOW, H. F. (1964a) Motivation in monkeys—and men. In: Russell, R. W. (Ed.), *Frontiers in Psychology*. Chicago: Scott-Foresman.
- HARLOW, H. F. (1964b) Mice, monkeys, men and motives. In: Russell, R. W. (Ed.), *Frontiers in Psychology*. Chicago: Scott-Foresman.
- HARLOW, H. F., and ZIMMERMAN, R. R. (1959) Affectional responses in the infant monkey, *Science* **130**, 3373, 421–432.
- HARLOW, H. F., and HARLOW, M. K. (1962) Social deprivation in monkeys, *Sc. Amer.* **207**, 5, 136.
- HEBB, D. O. (1949) *The Organization of Behavior*, New York: Wiley.
- HEBB, D. O. (1953) Heredity and environment in mammalian behaviour, *Brit. J. Anim. Behav.* **1**, 43–47.
- HEBB, D. O., and RIESEN, A. H. (1943) The genesis of irrational fears. *Bull. Canad. Psychol. Assoc.* **3**, 4, 49–50.
- HEBB, D. O. and THOMPSON, W. R. (1954) The social significance of animal studies. In: Lindzey, G. (Ed.). *Handbook of Social Psychology*, Cambridge, Mass. Addison-Wesley.
- HEDIGER, H. (1938) *Wild Animals in Captivity*, London: Butterworth.
- HEINROTH, O. (1911) Beiträge zur Biologie, namentlich Ethologie und Psychologie der Anatiden, *Verh. V. Int. Ornithol. Kongr.*, 589–702.
- HELD, R. (1956) *Group Processes: Transactions of the First Conference*, Schaffner, B. (Ed.). New York: Macey.
- HERSHER, L., RICHMOND, J. B., and MOORE, A. U. (1963) Maternal behaviour in sheep and goats. In: Rheingold, H. L. (Ed.), *Maternal Behavior in Mammals*, New York: Wiley.
- HESS, E. H. (1959) Imprinting, *Science* **130**, 3368, 133–141.
- HESS, E. H. (1962) Ethology: an approach toward the complete analysis of behavior. In: *New Directions in Psychology*, New York: Holt, Rinehart & Winston.
- HILGARD, E. R., and MARQUIS, D. G. (1961) *Conditioning and Learning*, London: Methuen.
- HINDE, R. A. (1953) Appetitive behaviour, consummatory act, and the hierarchical organisation of behaviour, *Behaviour* **5**, 191–224.
- HINDE, R. A. (1954a) Factors governing the changes in strength of a partially inborn response, I, The nature of the response, and an examination of its course. II. The waning of the response, *Proc. roy. Soc. B.* **142B**, 306–331, 331–358.
- HINDE, R. A. (1954b) Changes in responsiveness to a constant stimulus, *Brit. J. Anim. Behav.* **1954**, **2**, 41–55.
- HINDE, R. A. (1956) Ethological models and the concept of drive, *Brit. J. Philos. Sci.* **24**, 321–331.
- HINDE, R. A. (1959a) Unitary drives, *Anim. Behav.* **7**, 130–141.
- HINDE, R. A. (1959b) Some recent trends in ethology. In: Koch, S. (Ed.), *Psychology: A Study of a Science, Vol. 2, General Systematic Formulations, Learning and Special Processes*, New York: McGraw-Hill.
- HINDE, R. A. (1960) Energy models of motivation, *Symp. Soc. Exp. Biol.* **14**, 199–213.
- HINDE, R. A. (1961) The establishment of the parent-offspring relation in birds, with some mammalian analogies. In: Thorpe, W. H. and Zangwill, O. L.: *Current Problems in Animal Behaviour*, Cambridge Univer. Press.
- HINDE, R. A. (1962a) Some aspects of the imprinting problem. In: Imprinting and Early Learning, *Symp. Zool. Soc. Lond.* **8**, 129–138.
- HINDE, R. A. (1962b) The relevance of animal studies to human neurotic disorders. In: Richter, D., Tanner, J. M., Taylor, S. and Zangwill, O. L. (Eds.), *Aspects of Psychiatric Research*, London: Oxford Univer. Press.
- HINDE, R. A. (1965) *Ethology and Comparative Psychology*. In Press, New York: McGraw-Hill.

- HINDE, R. A., THORPE, W. M., and VINCE, M. A. (1956) The following response of young moorhens and coots, *Behaviour* 9, 214-242.
- HINDE, R. A., and TINBERGEN, N. (1958) The comparative study of species-characteristic behaviour. In: Roe, A., and Simpson, G. G. (Eds.), *Evolution and Behaviour*, New Haven, Conn.: Yale Univer. Press.
- HINDE, R. A., and ROWELL, T. E. (1962) Communication by postures and facial expressions in the Rhesus Monkey, *Proc. Zool. Soc. Lond.* 138, 1, 1-21.
- HOLST, E. VON (1935) Über den Prozeß der zentralnervösen Koordination, *Pflüg. Arch. ges. Physiol.* 236, 149-158.
- HOLST, E. VON, and SAINT PAUL, U. VON (1963) On the functional organisation of drives, *Anim. Behav.* 11, 1, 1-20.
- HOOF, J. A. R. A. M. VAN (1962) Facial expressions in higher primates. In: Evolutionary Aspects of Animal Communication, *Symp. Zool. Soc. Lond.*, 97-125.
- HUTT, C., and HUTT, S. J. (1965) Effects of environmental complexity upon stereotyped behaviour on children. *Anim. Behav.* 13, 1.
- HUTT, C., HUTT, S. J., and OUNSTED, C. (1963) A method for the study of children's behaviour. *Devel. Med. Child Neurol.* 5, 233.
- HUTT, C., HUTT, S. J., and OUNSTED, C. (1965) The behaviour of children with and without upper CNS lesions. *Behaviour* 24, 246.
- JAMES, H. (1959) Flicker: an unconditioned stimulus for imprinting, *Canad. J. Psychol.* 13, 59-67.
- JAY, P. (1963) Mother-infant relations in Langurs. In: Rheingold, H. L. (Ed.), *Maternal Behavior in Mammals*. New York: Wiley.
- JAYNES, J. (1956, 1957, 1958) Imprinting: the interaction of learned and innate behavior. I. Development and generalization. II. The critical period. III. Practice effects on performance, retention and fear. *J. comp. physiol. Psychol.*, 49, 210-206; 50, 6-10; 51, 234-242.
- JENSEN, G. D., and MULLINS, G. L. (1963) A telemetry approach to mother-infant interaction in monkeys. In: Slater, L. (Ed.), *Biotelemetry*, London: Pergamon.
- JONES, M. R. (1953 and annually thereafter) *Current Theory and Research on Motivation*, Nebraska Univer. Press.
- KAUFMANN, I. C. (1960) Symposium on psychoanalysis III. *Int. J. Psychoanal.* 41, 318-326.
- KING, J. A. (1958) Parameters relevant to determining the effects of early experience upon the adult behavior of animals. *Psychol. Bull.* 55, 46-58.
- KUBIE, L. S. (1956) Influence of symbolic processes on the role of instincts in human behavior (special article), *Psychosom. Med.* 18, 3, 189-208.
- KUO, Z. Y. (1932) Ontogeny of embryonic behavior in Aves, I-IV, *J. exp. zool.* 61, 395-430; 62, 453-489. *J. comp. Psychol.* 13, 245-272; 14, 109-122.
- LEHRMAN, D. S. (1953) A critique of Konrad Lorenz's theory of instinctive behaviour, *Quart. Rev. Biol.* 28, 337-363.
- LEHRMAN, D. S. (1956) On the organization of maternal behavior and the problem of instinct. In: *L'Instinct dans le Comportement des Animaux et de L'Homme*. Paris: Masson.
- LEHRMAN, D. S. (1961) Hormonal regulation of parental behavior in birds and infra-human mammals. In: Young, W. C. (Ed.), *Sex and Internal Secretions*, 3rd ed., Baltimore: Williams and Wilkins.
- LEVINE, S. (1956) A further study of infantile handling and adult avoidance learning, *J. Pers.* 25, 70-80.
- LEVINE, S. (1957a) Infantile experience and consummatory behavior in adulthood, *J. comp. physiol. Psychol.* 50, 609-612.

- LEVINE, S. (1957b) Infantile experience and resistance to physiological stress, *Science* **126**, 405.
- LEVINE, S. (1960) Stimulation in infancy, *Sci. Amer.*, **202**, 5, 81–86.
- LEVINE, S. (1962a) Psychophysiological effects of infantile stimulation. In: Bliss, E. L. (Ed.), *Roots of Behaviour*, New York: Harper.
- LEVINE, S. (1962b) Some effects of stimulation in infancy. In: Barnett, S. A. (Ed.), *Lessons from Animal Behaviour for the Clinician*, London: Heinemann.
- LEVINE, S., CHEVALIER, J. A., and KORCHIN, S. J. (1956) The effects of early shock and handling on later avoidance learning, *J. Pers.* **24**, 475–493.
- LIPSITT, L. P. (1963) Learning in the first year of life. In: *Advances in Child Development and Behavior*, Vol. I. New York: Academic Press.
- LIPSITT, L. P. (1966) Learning processes of human newborns, *Merrill-Palmer Quart.* **12**, 45–71.
- LIPTON, E. L., and STEINSCHNEIDER, A. (1964) Studies on the psychophysiology of infancy, *Merrill-Palmer Quart.* **10**, 103–117.
- LORENZ, K. (1935) Companionship in bird life. In: Schiller, C. H. (Ed.), *Instinctive Behavior: The Development of a Modern Concept*. London: Methuen.
- LORENZ, K. (1937) The nature of instinct. In: Schiller, C. H. (Ed.), *Instinctive Behavior: The Development of a Modern Concept*, London: Methuen.
- LORENZ, K. (1943) Die angeborenen Formen möglicher Erfahrung, *Z. Tierpsychol.* **5**, 235–409.
- LORENZ, K. (1950) The comparative method in studying innate behaviour patterns, *Sympos. Soc. exp. Biol.* **4**, 221–268.
- LORENZ, K. (1952) The past twelve years in the comparative study of behavior. In: Schiller, C. H. (Ed.), *Instinctive Behavior: The Development of a Modern Concept*, London: Methuen.
- LORENZ, K. (1956) Play and vacuum activities. In: *L'Instinct dans le Comportement des Animaux et de L'Homme*. Paris: Masson.
- LORENZ, K. (1958) The deprivation experiment: its limitations and its value as a means to separate learned and unlearned elements of behavior. Unpublished paper.
- LORENZ, K. (1960) Prinzipien der vergleichenden Verhaltensforschung, *Fortschr. Zool.* **12**, 265–294.
- LORENZ, K. (1961) Phylogenetische Anpassung und adaptive Modifikation des Verkaltens, *Zeit. f. Tierpsychol.* **18**, 139–187.
- LORENZ, K. (1966) *Evolution and Modification of Behaviour*, London: Methuen.
- MCGILL, T. E. (1965) (Ed.), *Readings in Animal Behavior*, New York: Holt, Rinehart and Winston.
- MAIER, N. R. F., and SCHNEIRLA, T. C. (1935) *Principles of Animal Psychology*, New York: McGraw-Hill.
- MASON, W. A. (1963) The effects of environmental restriction on the social development of rhesus monkeys. In: Southwick, C. H. (Ed.), *Primate Social Behavior*. New Jersey: Van Nostrand.
- MASSON, I. (publisher) (1956) *L'Instinct dans le Comportement des Animaux et de L'Homme*. Paris: Masson.
- MOLTZ, H. (1960) Imprinting: empirical basis and theoretical significance, *Psychol. Bull.* **57**, 291–314.
- MOLTZ, H. (1963) Imprinting: an epigenetic approach, *Psychol. Rev.* **70**, 2, 123–138.
- MOLTZ, H. (1965) Contemporary instinct theory and the fixed action pattern, *Psychol. Rev.* **72**, 1, 27–47.
- MORRIS, D. (1956) The feather postures of birds and the problem of the origin of social signals. *Behaviour* **9**, 75–113.
- MORRIS, D. (1964) The response of animals to a restricted environment, *Symp. Zool. Soc. Lond.* **13**, 99–118.

- MURPHY, L. B. (1964) Some aspects of the first relationship. *Int. J. Psychoanal.* **45**, 31-43.
- NISSEN, H. W. (1951) Phylogenetic comparison. In: Stevens, S. S. *Handbook of Experimental Psychology*. New York: Wiley.
- NISSEN, H. W., CHOW, K. L., and SEMMES, J. (1951) Effects of restricted opportunity for tactual, kinesthetic, and manipulative experience on the behaviour of a chimpanzee, *Amer. J. Psychol.* **64**, 485-507.
- OSTOW, M. (1957) The erotic instincts—a contribution to the study of instincts, *Int. J. Psychoanal.* **38**, 305-324.
- OSTOW, M. (1960) Psychoanalysis and ethology, *J. Amer. Psychoanal. Assoc.* **8**, 526-534.
- OTTINGER, D. R., DENENBERG, V. H., and STEPHENS, M. W. (1963) Maternal emotionality, multiple mothering, and emotionality in maturity, *J. comp. physiol. Psychol.* **56**, 313-317.
- OTTINGER, D. R., and SIMMONS, J. E. (1964) Behavior of human neonates and prenatal maternal anxiety, *Psychol. Reports* **14**, 391-394.
- PAVLOV, I. P. (1927) *Conditioned Reflexes*. (Transl. by Anrep, G. V.). London: Oxford Univer. Press.
- PEIPER, A. (1963) *Cerebral Function in Infancy and Childhood*. (Transl. by Nagler, B. and Nagler, H.). New York: Consultants Bureau.
- PRATT, K. C. (1954) The neonate. In: Carmichael, L. (Ed.), *Manual of Child Psychology*, 2nd ed., New York: Wiley.
- PRECHTL, H. (1958) The directed head turning response and allied movements of the human baby, *Behaviour* **13**, 3-4, 212-242.
- PRECHTL, H. (1965) Behavioral studies in the newborn infant. In: Lehrman, D. S., Hinde, R. A., and Shaw, E. (Eds.), *Advances in the Study of Development*, New York: Academic Press.
- PRECHTL, H., and BEINTEMA, D. (1964) The Neurological Examination of the Full-term Newborn Infant.
- RAMSEY, A. O. (1951) Familial recognition in domestic birds, *Auk* **68**, 1-16.
- RHEINGOLD, H. L. (1963) Maternal behavior in the dog. In: Rheingold, H. L. (Ed.), *Maternal Behavior in Mammals*, New York: Wiley.
- RHEINGOLD, H. L., and KEENE, G. C. (1965) Transport of the human young. In: Foss, B. M. (Ed.), *Determinants of Infant Behaviour III*, London: Methuen.
- RICHMOND, J. B., and LIPTON, E. L. (1959) Some aspects of the neurophysiology of the newborn and their implications for child development. In: Jessner, L. and Pavenstedt, E., *Dynamic Psychopathology in Childhood*, New York: Grune & Stratton.
- RIESEN, A. H. (1951) Post-partum development of behavior. *Chicago Med. Sch. Quart.* **13**, 17-24.
- RIESS, B. F. (1950) The isolation of factors of learning and native behavior in field and laboratory studies, *Ann. N.Y. Acad. Sci.* **51**, 1093-1102.
- ROFFWARG, H. P., MUZIO, J. N., and DEMENT, W. C. (1966) Ontogenetic development of the human sleep-dream cycle, *Science* **152**, 604-619.
- ROLLMAN-BRANCH, H. S. (1960) On the question of primary object need, *J. Amer. Psychoanal. Assoc.* **8**, 686-702.
- ROSENBLATT, J. S., and LEHRMAN, D. S. (1963) Maternal behaviour of the laboratory rat. In: Rheingold, H. L. (Ed.), *Maternal Behavior in Mammals*, New York: Wiley.
- SALK, L. (1962) Mothers' heartbeat as an imprinting stimulus, *Trans. N.Y. Acad. Sci.* **24**, 7, 753-763.
- SCHAFFER, H. R., and EMERSON, P. E. (1964) The development of social attachments in infancy, *Monogr. Soc. Res. Child Devel.* **29**, 3, 1-77.

- SCHAFFNER, B. (1955-59) *Group Processes*, New York: Josiah Macy Jr. Foundation.
- SCHNEIRLA, T. C. (1955) Discussion in *Group Processes*, Schaffner, B. (Ed.), New York: Josiah Macy Jr. Foundation.
- SCHNEIRLA, T. C. (1956) Interrelationships of the "innate" and the "acquired" in instinctive behavior. In: *L'Instinct dans le Comportement des Animaux et de L'Homme*, Paris: Masson.
- SCHNEIRLA, T. C. (1957) The concept of development in comparative psychology. In: Harris, D. (Ed.), *The Concept of Development*, Minneapolis: Minnesota Univer. Press.
- SCHNEIRLA, T. C. (1959) An evolutionary and developmental theory of biphasic processes underlying approach and withdrawal. In: *Nebraska Symposium on Motivation*, Nebraska Univer. Press.
- SCHNEIRLA, T. C. (1965) Aspects of stimulation and organization in approach/withdrawal processes underlying vertebrate behavioral development. In: Lehrman, D.S., Hinde, R. A., and Shaw, E. (Eds.), *Advances in the Study of Development*, New York: Academic Press.
- SCHNEIRLA, T. C., and ROSENBLATT, J. S. (1961) Behavioral organization and genesis of the social bond in insects and mammals, *Am. J. Orthopsych.* 31, 223-253.
- SCHNEIRLA, T. C., ROSENBLATT, J. S., and TOBACH, E. (1963) Maternal behavior in the cat. In: Rheingold, H. L. (Ed.), *Maternal Behavior in Mammals*, New York: Wiley.
- SCHRIER, A. M., HARLOW, H. F., and STOLLNITZ, F. (1965) *Behavior of Nonhuman Primates*, New York: Academic Press.
- SCHUR, M. (1960) Phylogenesis and ontogenesis of affect- and structure-formation and the phenomenon of repetition compulsion, *Int. J. Psychoanal.* 41, 275-287.
- SCOTT, J. P. (1945) Social behavior, organization and leadership in a small flock of domestic sheep, *Comp. Psychol. Monogr.* 18, 4, 1-29.
- SCOTT, J. P. (1958) Critical periods in the development of social behaviour in puppies, *Psychosom. Med.* 20, 1, 42-54.
- SCOTT, J. P. (1962) Critical periods in behavioral development, *Science* 138, 3544, 949-958.
- SCOTT, J. P. (1963) The process of primary socialization in canine and human infants, *Monogr. Soc. Res. Child Devel.* 28, 1, 3-47.
- SCOTT, J. P., FREDERICSON, E., and FULLER, J. L. (1951) Experimental exploration of the critical period hypothesis, *Personality* 1, 162-183.
- SEITZ, P. F. D. (1958) The maternal instinct in animal subjects I, *Psychosom. Med.* 20, 215-226.
- SLUCKIN, W. (1964) *Imprinting and Early Learning*, London: Methuen.
- SPENCE, K. W. (1951) Theoretical interpretations of learning. In: Stevens, S. S. (Ed.), *Handbook of Experimental Psychology*, New York: Wiley.
- SPITZ, R. A. (1955) A note on the extrapolation of ethological findings, *Int. J. Psychoanal.* 36, 3, 162-165.
- SPITZ, R. A., and WOLF, K. M. (1946) The smiling response: a contribution to the ontogenesis of social relations, *Genet. Psychol. Monogr.* 34, 57-125.
- SZEKELY, L. (1954) Biological remarks on fears originating in early childhood, *Int. J. Psychoanal.* 35, 1.
- TAPP, J. J., and MARKOWITZ, H. (1963) Infant handling: effects on avoidance learning brain weight, and cholinesterase activity, *Science* 140, 486-487.
- TOBACH, E. (1963) The potential for telemetry in studies of animal social behavior. In: Slater, L. (Ed.), *Biotelemetry*, London: Pergamon.
- THOMPSON, W. R. (1955) Early environment—its importance for later behavior. In: Hoch, P. H. and Zubin, J. (Eds.), *Psychopathology of Childhood*, New York: Grune & Stratton.

- THOMPSON, W. R. (1957) Influence of prenatal maternal anxiety on emotionality in young rats. *Science*, **125**, 698-699.
- THOMPSON, W. R. (1958) Motivational factors in development, *Austral. J. Psychol.* **10**, 2, 127-143.
- THOMPSON, W. R. (1960) Early environmental influences on behavioral development, *Am. J. Orthopsych.* **30**, 306-314.
- THOMPSON, W. R. (1962) The effects of prenatal and early postnatal experience. In: Barnett, S. A. (Ed.), *Lessons from Animal Behaviour for the Clinician*, London: Heinemann.
- THOMPSON, W. R., and MELZACK, R. (1956) Early environment, *Sc. Amer.* **114**, 38-42.
- THORNDYKE, (1914) *Psychology of Learning*.
- THORPE, W. H. (1944) Types of learning in insects and other arthropods, *Brit. J. Psychol.* **33**, 220-234; **34**, 20-31, 66-76.
- THORPE, W. H. (1950) The concepts of learning and their relation to those of instinct, *Symp. Soc. exp. Biol.* **4**, 387-408.
- THORPE, W. H. (1956a) *Learning and Instinct in Animals*, London: Methuen.
- THORPE, W. H. (1956b) Ethology as a new branch of biology. In: McGill, T. E. (Ed.), (1965) *Readings in Animal Behavior*, New York: Holt, Rinehart and Winston.
- THORPE, W. H. (1961) Sensitive periods in the learning of animals and men. In: Thorpe, W. H. and Zangwill, O. L. (Eds.), *Current Problems in Animal Behaviour*, London: Cambridge Univer. Press.
- TIDD, C. W. (1960) Symposium on psychoanalysis I, *Int. J. Psychoanal.* **41**, 308-312.
- TINBERGEN, N. (1942) An objectivistic study of the innate behaviour of animals, *Biblioth. biother.*, **1**, 39-98.
- TINBERGEN, N. (1948) Social releasers and the experimental method required for their study, *Wilson Bull.* **60**, 6-52.
- TINBERGEN, N. (1950) The hierarchical organization of the nervous mechanisms underlying instinctive behaviour, *Symp. Soc. exp. Biol.* **4**, 305-312.
- TINBERGEN, N. (1951) *The Study of Instinct*, London: Oxford Univer. Press.
- TINBERGEN, N. (1952) Derived activities: their causation, biological significance, origin and emancipation during evolution, *Quart. Rev. Biol.* **27**, 1-32.
- TINBERGEN, N. (1953) *Social Behaviour in Animals*, London: Methuen.
- TINBERGEN, N., BROEKHUYSEN, G. J., FEEKES, F., HOUGHTON, J. C. W., KRUIK, H., and SZULC, E. (1962) Egg-shell removal by the black-headed gull. *Larus ridibundus*, L.; a behaviour component of camouflage, *Behaviour* **19**, 1-2, 74-117.
- TOMKINS, S. S. (1962) *Affect, Imagery and Consciousness*, vol. 1, New York: Springer.
- VANDEBERG, S. (Ed.) (1965) *Methods and Goals in Human Behavior Genetics*, New York: Academic Press.
- VERPLANCK, W. S. (1957) A glossary of some terms used in the objective science of behavior, *Psychol. Rev. Supp.* **64**, 6, 2, 1-42.
- WAIMAN, H. A., and HARLOW, H. F. (1961) The biochemical induction of phenylketonuria in monkeys and rats, *Proc. 2nd Int. Congr. ment. Retard.* Vienna, pt. 1, 54-61.
- WALTERS, R. H., and PARKE, R. D. (1965) The role of the distance receptors in the development of social responsiveness. In: Lipsitt, L. P. and Spiker, C. C. (Eds.), *Advances in Child Development and Behavior*, vol. 2, New York: Academic Press.
- WHITMAN, C. O. (1898) Animal Behaviour. Biol. Lectures of the Marine Biological Laboratory, Woods Hole, Mass.
- WOLF, A. (1943) The dynamics of the selective inhibition of specific functions. In: neurosis: a preliminary report, *Psychosom. Med.* **5**, 27-38.
- WOLFF, P. (1959) Observations on newborn infants, *Psychosom. Med.* **21**, 110-118.
- WOLFF, P. (1963) The natural history of a family. In: Foss, B. M. (Ed.), *Determinants of Infant Behaviour II*. London: Methuen.

- WOOD-GUSH, D. G. M. (1963) Comparative psychology and ethology. In: Farnsworth, P. R., McNEMAR, O., and McNEMAR, Q., (Eds.), *Annual Review of Psychology*, vol. 14. Palo Alto: Annual Reviews.
- YERKES, R. M., and YERKES, A. W. (1929) *The Great Apes*. New Haven: Yale Univer. Press.
- YERKES, R. M., and TOMILIN, M. I. (1935) Mother-infant relations in chimpanzee, *Comp. Psychol.* 20, 3, 321-348.
- YOUNG, R. D. (1964) Drug administration to neonatal rats: effects on later emotionality and learning, *Science* 143, 1055-1057.

CHAPTER 10

What Sort of Ego has an Infant? A Methodological Approach

by J. O. WISDOM

THERE are several reasons for raising this question. Apart from its general interest and theoretical appeal, certain answers, as I hope to show, have very material consequences. Many actions people take depend upon the answer they implicitly give to it. Whether a doctor holds an overt opinion about it or not, he certainly holds one even if it is unarticulated and it will deeply affect his dealings with infants. In particular, when a paediatrician is faced with the welter of contemporary theories, both psychological and physiological or physical, and has neither the time nor the incentive to sift them out, he is confronted with a very great practical problem when an infant is in fact brought into his consulting room with a (?) psychosomatic complaint. He has to act in accordance with some view and some theory, perhaps one that he slightly distrusts, perhaps one that is fashionable, perhaps one that is insufficiently tested. But it so happens that he may put himself into a better position *vis-à-vis* the welter of conflicting outlooks if he faces the question that I have raised and gives himself his own answer to it.

1 THE THEORY THAT NO THEORY IS POSSIBLE

To obtain a scientific answer to it, methodological aid is of value. Let us first consider a rather important view which is sometimes to be found, though possibly one cannot specify it in the literature. It is that with infants it is quite impossible to tell what sort of ego they have or what is going on in their minds if any. There is, however, a very simple answer to this. If one relies on the out-of-date methology that science is a purely inductive procedure, that is to say, that one is supposed to sit back, making observations passively and waiting for truth somehow to emerge from them, then it is certainly true that one will never find out what is going on in the mind of an infant. But if, on the other hand, one follows the practice adopted by scientists rather than the remarks they have made about their practice, one

will make hypotheses (or conjectures), seek to derive practical consequences from these, and then test whether these consequences are so or not (Popper, 1959). And in principle and in practice it does not matter very greatly how remote these consequences are, so long as they are carefully derived. I hope to be able to show that there are consequences of various ideas about the sort of ego an infant has. We may make, for example, three different kinds of conjectures about the nature egos, and if these have markedly different outcomes and we can check up on these outcomes, we are in a position to have a reasonable view of what their egos are like.

Many readers who have not grown up in the milieu of theoretical physics will have been trained to expect an opening definition of the "ego". Such a procedure is unknown in theoretical physics. There are many reasons why this should be so (Popper, 1962), but the simplest is that a definition with any solid content is reached (if at all) only at the end of an enquiry, though it may to some extent be given by the opening hypotheses that are tried out. If some very rough specification of scope or content is required, say to prevent confusion with another somewhat similar concept, that can be met; "*car les définitions ne sont faites que pour désigner les choses que l'on nomme, et non pas pour en montrer la nature*" † (Pascal, 1955). Thus some readers may reasonably wish to know whether the ego of an infant is being regarded as having intelligence, memory, and the like, or as a centre of sensations. It so happens that the issue to be discussed below concerns a personality feature, and it would be premature to try to lay down a framework about other properties of an ego until their relevance is brought out by our particular enquiry. I will therefore say only that the ego of an infant has the function of making contact with its environment, whether cognitive or emotional.

2 BIO-ADJUSTMENT: THE CABBAGE THEORY OF THE INFANT

The most universally held theory about the nature of the infant mind is one that is held by nearly all doctors, nearly all nurses, nearly all educationists, nearly all psychologists, and nearly all fathers. I do not think it has ever been written down but it is all the more powerful for having been unarticulated. It is as follows. (a) The infant is governed by some principle of pleasure and pain. It ("it" is the proper word) has pleasures or pains in connection with food, warmth, wind, wetness, and after a few months freedom of movement and teeth. Its sole concern is to have pleasure and avoid pain. (b) Further, something that is not very different, it is concerned solely with itself, an attitude that might be described as auto-erotic. (c) But to these have to be added certain auxiliaries, that in the course of time, through a conditioning process, it associates pleasures and pains with its mother, and eventually, at a time unspecified, by a remarkable transition becomes

† This striking quotation was brought to my attention by the Editor, Dr. E. Miller.

aware of other people, develops unselfish practices, and some modicum of considerateness towards others. It is not very easy to assign a date for this feat but those who hold this view would probably put it fairly late, at any rate hardly in the first two years of life.†

Here, then, we have a conception of an ego which is hardly an ego at all but merely a centre of a bundle of sensations, auto-erotically oriented. I have called it by the rather crude expression "cabbage theory" simply to draw attention sharply to the fact that in such a phase an infant has no rudimentary personality, no personality resembling that of an adult at all, so that there is a complete discontinuity between the infant and an adult.

At this point there is quite a difficult question to be raised, how such a transition can possibly be effected. We might suppose that the very possibility of a transition presupposed awareness of a person to be learnt about. This objection, however, is not decisive because presumably it could conceivably be that as a result of cortical development there arises in the infant's consciousness an emergent property of awareness of others and considerateness towards them. However miraculous this may seem, it cannot be regarded as impossible. Still, it would be preferable for a theory not to presuppose such an apparently untestable development.

Now it may seem that the cabbage theory is untestable, and my immediate task is to show that this is not so. So let us enquire into consequences.

Supposing you are a doctor consulted about an infant that is not sleeping well, will not go to sleep or wakes up in the night and will not go back to sleep, or refuses food or wants to eat every half-hour, or has sundry other problems like spots, apparent colic pains, or temperature with no ascertainable cause, and so on. What, on the assumption of the cabbage theory, will you do? First of all, you will consider diet, clothing, perhaps air and light, the possibility of sedatives, the spacing of feeds, and you will look into teething—all which, of course, is absolutely in order; the only question is whether you will look into this kind of thing solely or whether you will consider other things as well. Now, let me put the question: if you consider these things alone, are you operating on a hypothesis or not? And I would say that you are operating on the hypothesis that the cause is physical and that the remedy is physical.

There are practical signs that this is unsatisfactory. Paediatricians, as they used to ply their trade are finding themselves out of business now that many serious physical diseases of childhood have lost their importance. With insufficient to occupy them in physical medicine, they give their attention to stresses, psychological and social disorders, tensions in family relationships, and so on, as the important factors underlying the complaints they meet. This, however, though a pointer, is not proof.

† It is worth mentioning that it would be quite an interesting investigation to enquire into the incidence of acceptance of this theory, and find out what proportion of people of various types hold this view and at what age on the average they think the transition from the cabbage stage to a personal relation stage takes place.

Again it would be interesting to find out what proportion of mothers find physical medicine affords any help at all with psychosomatic complaints, what proportion just give it up in despair (doctors and clinics may not always know this if the mother does not return; they may even think the case has been satisfactorily disposed of); what proportion lump the situation, whether of, say, feeding trouble or sleep disorder, what proportion try to bolster up their feelings by trying one amateur remedy after another, and what proportion comfort themselves with the time-honoured adage that "they grow out of it". Here again we have a pointer but no proof.

Let us now consider this last belief, that a child with a disorder of the sort considered will grow out of it. The first point is that it is perfectly true. The question is what, if any, is the price that is to be paid. For example, in one case I have come across, a baby girl was a bad sleeper and could not be got to sleep and in the end the parents adopted the well-known procedure of leaving the child to cry it out. It is well known that this method is reasonably effective and that after about four nights the child sleeps, gives no more trouble. But in the case I am thinking of, it took 10 days before the desired result was achieved, and apparently that phase was not connected by the parents with what then happened—the child quite soon became a head-banger. This could be an example of what many physicians, following the Dutch (e.g. Groen, 1957), now call syndrome-shift. Children may grow out of a complaint but possibly at the price of a shift of syndrome.

So far it has not been possible to prove that what occurs is a shift of syndrome, that is to say a shift from one manifestation of a disease to another manifestation of the same disease, but I think here I can offer the possibility of carrying out a test. On the hypothesis that there is a shift of syndrome, then on clearing up a particular syndrome by some form of symptom therapy you should expect a further disorder later on, and if this sort of therapy is repeated, as it is likely to be, then there would be a whole succession of syndrome-shifts. It should therefore be more probable statistically that a second complaint will occur soon after the first complaint than that a first complaint will occur at that age. This may be otherwise put thus: whatever probability there is of a supposedly psychosomatic complaint occurring, the probability is much greater that it will be followed by another of a similar class. Now this can clearly be investigated statistically. To take a specific example, find a group of children of, say, eighteen months old, who have not had such a complaint and find the frequency of a first disorder in the next six months. Select another such group who have had such a complaint when eighteen months old and find the frequency of recurrence; then compare the two groups for a significant difference of frequency. It should be added that for the subject group the probability of a third complaint, a fourth, and so on, should have the same probability as the second complaint, but not as the first one.

Here, I think, we have a real possibility of testing for syndrome shift and at the same time of testing the cabbage theory, because on the cabbage theory as soon as the disorder is cleared up there is no reason to expect a further outbreak, whereas on the rival theory that some form of psychological intervention is at work there is reason to expect such a consequence.

Let us now consider another consequence. Suppose we take three very typical situations, leaving an infant hungry or crying or alone, and ask ourselves what view we would take of these on the cabbage theory. It is surely evident that on that theory the infant would biologically adjust. If left hungry it would grow up used to the phenomenon of being hungry and be therefore adaptable about meals and not unduly fussy if kept waiting ten minutes. If left to cry, after all it would go to sleep through exhaustion, and it would grow up able to take knocks; and then, if used to being left alone, it would grow up independent and not feeling lost unless at all times it had a clear lifeline attached to another person.

These consequences would seem to be testable, for it should at least in principle be possible to take two classes of infants, those who have been left hungry, crying, or alone and those who have not, and follow up their subsequent histories, say over a year or two to see in fact whether they did appear to be more adaptable, or able to take knocks, or appear to be more independent. Naturally the practical difficulties of such research are fairly great; apart from having to find some measure of being adaptable about meals, one would have to have some means of obtaining reliable histories, and reliability in this area is obviously difficult. Such considerations, however, are not decisive and it is not unreasonable to hope that they could be overcome. It is plain that the consequences discussed admit of testability in principle at least. †

With such tests, statistics are indispensable, as statistics so often are. Statistics, as is well known, is one of the most valuable tools of modern times. It is in fact so valuable that some researchers make the mistake of thinking that it is on all occasions indispensable. This is clearly not so. There are situations when one can find an alternative method: thus when a change in a situation comes about for any reason and especially when it can be deliberately brought about, then it is possible to establish a clear linkage between the change and certain consequences. For example, in one case a small boy in his second year began to have a slight sleeping complaint which was no more than waking up and needing quite a bit of comforting, but it was possible to get him back to sleep. All the same, there was a disorder. Now in this particular case the boy's mother had for some weeks been getting more and more irritated with him and had started to slap him on the slightest provocation, or perhaps even without real provocation. She was induced to drop this and at once the sleeping complaint disappeared, a

† Relevant evidence is to be found in the high death-rate of new-born babies in hospitals that kept them hygienically segregated from their mothers.

situation which held for a considerable number of weeks. The mother then relapsed and at once the sleeping complaint reappeared, and finally with a further adjustment of control by the mother the sleeping complaint again cleared up. This would seem to be almost a classic instance of Mill's (1881) "method of difference", which, slightly re-formulated, is a perfectly respectable scientific procedure, the only thing against it being that it has very few applications. However, here is one, and when it can be used, statistics are not needed.

Another interesting consequence may be considered. Entertain the following hypothesis, that the younger the infant the less severe is the effect of a trauma. To amplify this, if a child is ill and has to be sent to hospital away from its parents, or if a parent dies, or something severe like this that is obviously really traumatic, then everyone will agree that this is a very serious matter for a child of 5 years, perhaps 4 or 3, but a lot of people will think that a child of 8 months old will hardly realize the change—in short they hold, in line with the cabbage theory, that the younger the child the less severe would be the traumatic effects.

This hypothesis should be fairly easy to put to a test. It would be necessary to collect cases of children with traumata of the kind described, graph them according to age, and consequences over say a period of 6 or 12 months. It would be advantageous to graph the consequences for even longer, so that, for example, one could compare the consequences in various 4-year-olds, according to whether the trauma had occurred at the age of 6 months or a year or 18 months and so on.

A few general comments on the cabbage theory may now be made. Enough has been said to show that it is of great practical importance, whether one holds the cabbage theory or not. It is possible to use some of the tests I have proposed as a means of personal assessment to find out whether in fact one holds the cabbage theory or not, even though one had never actually thought of it. If, for example, you find yourself inclined to the view that you can safely leave an infant hungry, crying, or alone, and that it will, as we may put it, bio-adjust without damage, then you are an exponent of the cabbage theory. Again, if you find yourself taking it for granted that the younger the infant the less severe the trauma, again you are an upholder of the cabbage theory. And a consequence of holding it would be this, in the case of illness either, say, of a parent or of an infant, you will not consider it necessary to take particular pains to keep contact between the parent and the infant during the illness. And you will consider that if you clear up a symptom that your job is done and you will not fear an increased probability of a further disorder.

It is perhaps interesting to reflect that if you plant young trees it is most important to stake them very carefully to protect them from the wind until they have become established. Again, it is unwise to put very young children in the way of serious infectious diseases because their defences are not

so highly developed as in adults. These two points afford no proof that the same holds in the mental world, but it would be very strange if it were otherwise. In other words, the policy of an early and strong conditioning to social demands might well impose a strain on an infant's defences far beyond its capacity to bear at such an age. The customary idea would presume that severe strains of a mental character in the infant are hardly strains at all at that age, which is at least out of keeping with our experience of plant life and infant reaction to infectious diseases.

What is the methodological position of such a consideration? It is not in any way decisive. What alone is decisive is the testing, of the kinds I have proposed. If they bear out the psychosomatic hypothesis, the previous paragraph can be seen as a comment on a distorted outlook.

3 THE THEORY OF PRIMARY NARCISSISM

Let us now consider another theory of the infant ego characterized by a state known as primary narcissism. This resembles the cabbage theory in a certain respect, namely that there is no concern for anything but self, but it also differs from that theory, for it involves mentality on an altogether different plane. Mentality on the cabbage theory is no more than auto-erotism, which implies no more than a bundle of sensations.

Primary narcissism is a theory, due to Freud (1914), in which the infant's ego attains a certain level of development in which there is a libidinal worship of the ego by the infant's own instinctual libidinal urges. Awareness of the existence of another person depends upon overcoming the state of primary narcissism, that is, deflecting some of the libidinal worship of the infant's ego outwards and away from it to the other persons. This process takes a considerable time. Hence in the state of primary narcissism no awareness of the existence of an outside person is possible. Primary narcissism gives an image of an objectless infant steeped in an all-pervading flux of libido. The theory has been closely criticized by Balint (1937, 1960).

The position is complicated by the fact that the theory of primary narcissism is a part of Freud's libido theory. But we can simplify matters for present purposes by dividing primary narcissism into two parts, the nature of the state, and its source. Here we are not concerned with its source, namely libido flowing from the id; I have mentioned it partly because it helps to give a picture of the state, but this can be done separately. We may say that primary narcissism is a state of an ego (i) that is aware of no person outside itself, (ii) that has a high "feeling-tone", and (iii) that enjoys this. Another way of putting this would be that it feels itself to be a self-made ego and feels good. This is not to deny that there is a perceptual apparatus, which recognizes the existence of useful objects around, such as mothers and fathers, but these are not recognized as possessing any personal attributes.

As regards the time-lag in the development of object relations, no range of dates is available in the classical literature, but the indications would be that primary narcissism lasts from the earliest months until well into the second year at least. The precise dating, however, is not a matter of primary importance here.†

Despite my assertion that nearly all mankind holds the cabbage theory, it is possible that the theory of primary narcissism also reflects the general view. For often people do regard infants as being more than bundles of sensations and in fact as having an ego concerned only with its own feeling-tone. The belief in primary narcissism wanes, however, in certain situations, e.g. early traumata are underestimated, or when harsh treatment is thought desirable (to prevent narcissism from developing!). Thus both theories are widely held. The crucial difference between them is that on the cabbage theory a bundle of sensations lacks the superstructures of a feeling-tone essential to primary narcissism.

The consequences of the theory of primary narcissism are not the same as those of the cabbage theory. According to the latter, untoward events would bring no drastic repercussions in their train, but according to the theory of primary narcissism traumatic events would have very dire effects, producing a so-called "narcissistic wound". The terms primary narcissism and narcissistic wound refer to theoretical constructs and not to clinically ascertainable states; they can only be traced through whatever consequences they may have. We are not concerned here with the later psychopathological states attributed to them but to contemporary manifestations. These would involve a variety of responses to frustration from defiance to crumpling up, which would be different from what should be expected on the cabbage theory. Ordinary observation is enough to show no such traits. Thus ordinary acquaintance with infants, without special research, is enough to show that the actions of infants fit the cabbage theory much less satisfactorily than that of primary narcissism.

Perhaps the way you can tell whether or not you hold the theory of primary narcissism is to ask yourself whether you think that damage to one's self-esteem is the most important developmental factor in the life of every infant. Probably loss of self-esteem in some sense or other has some influence on all. But, if so, it can be explained not only by the theory of

† Let us briefly consider the possibility that there is no time lag, that is to say, that primary narcissism is an attachment to one's own ego but that at the same time part of one's instinctual attachments are deflected outside to others. Such a hypothesis might appear to do justice to the idea that awareness of others and their interests can hardly exist without some degree of good feeling-tone in oneself. But in fact it would account for awareness of others as a phenomenon occurring despite being steeped in libido rather than through a sense of well-being. In any case, the vital element in the issue in the present context is whether infants are locked up in themselves or have object-relations, and a theory of primary narcissism that permitted object-relations would have no impact on this.

primary narcissism but also by the Kleinian theory of bad objects or by Fairbairn's theory on similar lines. However, one would be unlikely to stress it above all other factors unless one held the theory of primary narcissism.

It is important to note that the experimental tests for the cabbage theory suggested earlier, even though successful against that theory, would not tell against the theory of primary narcissism. The question therefore arises whether some other test for it can be found.

To devise a test fundamentally presupposes that we are trying to discriminate between two possible alternatives. To test primary narcissism is to test it in comparison with another theory. And the decisive contrast lies with the theory of object-relationship. Let us consider this before going further into the problem of finding a test.

4 THE OBJECT-RELATIONSHIP THEORY

The last of our possibilities about the nature of the infantile ego is the view that an infant has an ego capable of relationships of some sort from early on or the very beginning of life. There are indications in some of Freud's writings that may suggest such a view, but these are, I think, open to a different construction, and certainly the general tenor of his work was against it. Melanie Klein (1932) was the first to use it in a big way,[†] and Fairbairn (1952) has developed it into something of a system. An important proviso has to be made about the meaning of the theory. It is not a theory of mature relations to other persons but of relations to either persons or parts of persons. I shall come back to this later. What it amounts to is that relations are the stuff of life; and that all else derives its importance from them; that one's failures originate in them. Thus a baby's bottle has no value for it apart from the relation between the mother, the bottle, and the infant.

I want now to draw attention to a few miscellaneous misunderstandings and also positive considerations, lack of knowledge of which leads people to overlook the force in the object-relations theory.

Thus it is widely said that children as soon as they can talk call all men "Daddy". This has the overtone that differences of persons and personality are not distinguished, and even that personality may not be recognized at all. A very simple consideration bears on this. Many men leave home early in the morning when the children are in the way and get home in the evening after the youngest are asleep, so infants simply do not know their daddies. It is hardly surprising therefore if anything in trousers seems much the same. But the counter-example is very easily come by in situations where the father is in fact known to the infants: calling all men "Daddy" simply does not occur; "Daddy" is used exclusively for the father just as "Mummy" is for the mother. I am not at all sure that this fact is widely appreciated.

[†] It seems that Balint (e.g. 1935) was the first to draw explicit attention to its importance.

Another consideration of theoretical and methodological interest but of limited scientific power at present is the sense that is obtainable of communication between a parent and infants of a month or less, communication taking place through the medium of noises. What happens is that the infant may make some kind of gurgling noise which looks like pleasure at the parent, then, if the parent remains passively inductivist and carefully observes, he will probably observe nothing special until perhaps the infant is disappointed in the situation and cries, but if the parent acts spontaneously and naturally, and, in line with a scientist's usual procedure, acts on the basis of a hypothesis and does something, then striking consequences occur: that is to say, if the parent responds by making similar little noises, one can see a build-up that looks like a positive feed-back, in which this interchange grows, to the evident satisfaction of both parties. Convincing as this may be to anyone who has ever observed it, it can hardly be the basis of a methodological proof because of the difficulty in countering the objection that the whole thing might be illusory. There is no clear way of showing in general that it is not. Nonetheless in lucky cases, however difficult to describe, decisive consequences may be found.†

There is the familiar phenomenon of children soon after six months giving things to their parents and actually wanting the parent to eat bits of food that they give. This should be fairly widely known, and it would put object-relationships at a fairly early age. The sceptic could, of course question the attitude ascribed to the child.

Likewise there exists, as some would claim, a communication between the eyes of an infant in the first months and his parent, just as there is between the eyes of adults. The claim may be developed beyond the sphere of make-believe more convincingly by an interesting contrast. Should it be supposed that a parent is simply fondly anthropomorphic, the force of this objection diminishes sharply if he describes *differences* he can observe in the eye and smile of infants: in one he may see a smile of gratification at being smiled at by him, a (secondary) narcissistic gratification, while in another he may see the smile of a person taking pleasure in another—the one receives gratification, the other smiles at someone. Such phenomenological differences may be as real to the eye that knows how to see them as are the objects seen under a microscope to those who have learnt to see them. The existence of neither is guaranteed by the presumptive skill of discernment; existence hinges on consequences. You can test what you claim to see under a microscope by using some of it to produce tangible biochemical effects. Can you do the same with what you claim to see in the eye? What you see will tell you in part what you can do in managing the infant, i.e. tells you something of what to expect in the months to come. And this is a test, though a loose one for "management" lacks that specificity that makes

† I hope to publish an example elsewhere.

the handling of bacteria plain sailing. But it is open to test not greatly differently from the way a skilled physician picks up clues about a patient from nuances of colour, smell, shape, texture, and the like.

What is needed with such phenomena as kinds of gurgle, expressions in an eye, kinds of smile is not to abuse them but to use them. And let them stand or fall, as is the custom in science, by what they lead to.

A further phenomenon, by no means unimportant, is the effect of cuddling upon teething distress. It is surely remarkable how often (not of course always) pain from the teething apparently disappears in a matter of seconds when an infant is given personal attention. It is most unlikely that a serious pain could vanish like that as a result of purely physical causes; indeed sometimes hardly any physical change is introduced into the situation—perhaps only rocking. The presumption is either that the personal attention by the parent influences the pain by affecting the mind of the infant, or that the physical pain of teething is often mild but arouses a psychological sense of persecution which is what really causes the commotion and which the parent alleviates—on either eventuality, object-relations or at least psychological factors are involved.

In line with these considerations is the fact that mental disorder is diagnosable at 6 months or less in terms which would be impossible on the cabbage theory and next to impossible without the object-relations theory.

Here is another example which shows considerable emotional development at the age of a year. A baby boy of just a year and a fortnight was presented with a little brother. He displayed tremendous pleasure and within a few seconds misery, and this alternated quite rapidly for a while. Three nights later the boy woke with a nightmare which neither parent could deal with. Sensing that this nightmare would recur, the father decided on something he would try next night. To ordinary commonsense it might be supposed that the baby was in the way, disturbed the older boy, and that it might be sensible to keep the baby out of sight at bed-time. The father's idea, however, was a different one, and when the nightmare occurred on the following evening, after the parents had made a brief and fruitless attempt to soothe the boy, he simply carried in the baby to the older boy. The effect was immediate and dramatic. The nightmare ceased completely and instantaneously, the older boy hopped and shouted and laughed for the next hour. This phenomenon recurred with the same outcome for the next three nights, then the boy slept through without the nightmare on the next night.

The main hypothesis involved is that the boy thought he had destroyed the baby. To this of course there is an auxiliary, that he was overwhelmed at such a feeling. It is certainly not enough to suppose that he thought he had destroyed the baby—he might have been very pleased at this. But the nightmare and the consequence of being reassured that he had not destroyed the baby indicate a terror at the idea. What I intend to bring out by means of this example is that sophisticated emotions are well developed at 12 months,

and therefore must have had a considerable history leading towards them, a history involving relationships. (It is worth adding that since children say some words in the first year some higher mental processes are maturing and must have been developing for a considerable time before, so there is nothing really surprising about the idea that a great deal of mental development may take place in the early months of life.)

One of the main reasons why the cabbage theory or the narcissistic theory have held sway rather than the object-relations theory is that men may have a more difficult problem in making contact with children, and as the official theories of the world are man-made, not woman-made, this may account for the fact that doctors have widely acted in accordance with the cabbage theory.

There is, however, a further reason of fundamental importance: according to the theory of object-relationship, the objects an infant relates to are what are called *part-objects*, not whole persons, part of people that are endowed in the infant's mind with certain crude personal powers—powers of hate, powers of greed, powers of giving, and powers of withholding—such as the mother's breast. But this fact that they are spatial part-objects may quite readily prevent people from seeing their resemblance to whole objects and may have made them look more like inanimate objects; such an understandable oversight would make the theory of object-relationships look unrealistic or even wild, and lend support to the cabbage theory or the theory of primary narcissism.

How far do these various points, misconstructions, and arguments tell for or against primary narcissism? Most of them are "general considerations" that have a commonsense bearing on what is likely to be the correct answer, but they are not decisive, though they could be if they were not so dependent on chance observations. One of them, the case of the year-old boy with the nightmare of having destroyed his baby brother, is a definite counter-example to the theory of primary narcissism—at the age at which the observation was made. But the counter-example does not exclude the possibility of a phase of primary narcissism lasting for most of the first year of life. Can we, then, find a test that would decide the issue as it concerns this early period?

5 TESTING THE THEORIES: PRIMARY NARCISSISM VERSUS OBJECT-RELATIONSHIP

Two tests will now be proposed.

(1) Primary narcissism is thus a highly theoretical concept, for the state it postulates is not clinically observable. An attempt may be made to force an observable consequence out of it by showing its relation to its satellite secondary narcissism. This is an easily recognizable state, and is exemplified, for example, by anyone who is "full of his own importance". What it means is fairly simple. It is not only that the infant imbued with secondary

narcissism wants everyone to worship him but to minister to his needs in every way in complete disregard of the other person's personality, needs, and so on. In an extreme situation this could go so far even as to involve losing practically all awareness of the existence of the other person. Such a state would be schizophrenic; thus secondary narcissism can characterize all degrees of illness from the very severe to the fairly mild, and a certain amount of it is common to practically all children whether young or grown-up. In Freud's view this would be quite late. It could arise only after the state of primary narcissism had been broken through. The break—through would allow object-relations to be formed with an object outside the ego. And the state of secondary narcissism would arise when these object-relations deteriorated into the form of an identification with the object, so that the valuation previously put upon the object now reverts to the ego. In this way the object has no mental attributes left other than those of giving devotion and service.

It follows that the state of secondary narcissism presupposes that object-relations have already existed, so that the phase of primary narcissism has ended.

It follows that, if you have any way of detecting secondary narcissism in infants of a certain age (e.g. "showing off"), you have evidence that primary narcissism does not last to that age.

Thus, here we have a rough way of assessing, so far as it may exist, an upper limit to the duration of primary narcissism.

(2) We next ask ourselves to specify what differences we should expect to find, on the two theories, in the infant's handling of his parents.

On the theory of primary narcissism, the parents are not persons, not even part-objects, with egos, attitudes, etc. They are mobile furniture. Since the infant's aim is to increase his own bodily pleasure and diminish his own bodily pain and since he has no other concern, his parents are simply agencies for providing services. At one time of life you dial WEA if you want to know whether to take an umbrella; at another time of life you yell if you want your stomach replenished. When you have heard the weather report you put down the telephone; when your stomach is full you push away the spoon, bottle, hand, breast, or whatever utensil was in use. In short *there are no persons, only instruments*.

It is to be noticed that this may seem to imply an extreme construction of primary narcissism, i.e. that a person would be an instrument without mentality at all. The question therefore arises whether primary narcissism can be construed in a less extreme form allowing some element of mentality to be ascribed to instrument-persons. These might perhaps include, for instance, being helpful or being obstructive, but would exclude personal wishes. Even such slender characteristics, however, must be specifically restricted, in that helpfulness, which would usually be taken to stem from a sense of concern, would here have to mean a sort of handing over of things needed

without the wish to help; for the infant in a state of primary narcissism could not understand concern shown to him. He would therefore see his mother, when helpful, as displaying a primary narcissistic state of her own, and see her helpfulness as aimed solely at her own satisfaction. The infant's world would not be solipsistic but would be peopled with primary narcissists.

This less extreme construction would, however, be the same in one important particular, the relevant one here: i.e. persons would, as before, be appreciated only as instruments.

What objects of value, then, if persons are instruments, can there be for the infant? He will value physical pleasures and anything so far as it ministers to his sense of well-being. He cannot attribute to a thing any value over and above its instrumental utility.

Supposing food to be valued because it makes his ego "feel good", how does he view the instrument, say the mother's hand-cup-lap complex? If he valued it in comparison with a neighbour's hand-cup-lap complex, this would only be because it provides a better sensation of pleasure or better ego-tone, much as one chair is preferred because of being more comfortable than another. Since the mother's hand-cup-lap complex would have no other value, any machine that could imitate it would do as well, just as a chair that is valued purely for its comfort may be replaced by another that is equally comfortable.

We might epitomize this consequence of primary narcissism as "the equivalence of instruments", with an obvious corollary, "the replaceability of instruments" or "the substitutability of instruments". A corresponding attitude in the infant would be "the ego's indifference as between instruments".

Now let us consider the position more closely when an infant wants a drink of milk: one cup should be as good as another. What happens predominantly in actual fact? Most infants insist on one particular cup. So it would look as if primary narcissism does not apply. But the matter is not so simple. The counter might be made that the infant gets more pleasure from this cup than from any other (because, for instance, of its colour); hence, despite being specially valued, it may nonetheless be valued only as an additional instrument of pleasure. His refusal of another cup, therefore, is not a refutation of the hypothesis of substitutability of instruments because for him the cups are not equivalent. Thus his special selection of a cup is compatible with a state of primary narcissism.

Let us see whether we can devise a test for this. Suppose we confront the infant with two or three cups just like his favourite. On the theory of primary narcissism, he should be indifferent which cup he would choose, but otherwise he should examine them in turn (to see which was the special cup). This test should not prove unduly difficult.

CONCLUSION

I have sought to drive home the point that in all our dealings with children, whether on the most humble level of amateur paediatrics or that of consul-

tant, we all do in practice take a view, articulated or not, about the nature of the infant mind, and we have to do so. And I have sought to show that the view we take is fraught with important implications, vitally affecting our handling of a child. It may seem to some clinicians that it is no use going into the nature of the infant mind—that is mere speculation. I have sought to show that with appropriate use of methodological tools, some views can be forced to an issue, i.e. that we can derive empirical consequences from them that are open to test, after the manner of the established sciences.

The theories discussed were three: (1) Theory of Bio-Adjustment or the Cabbage Theory; (2) that of Primary Narcissism; (3) and that of Object-Relationships.

For the first several tests were proposed. One was to trace the amount of disturbance in children who had been left hungry, crying, and alone, as compared with others who had not. Another was to trace the amount of disturbance in children who had suffered severe traumata, such as separation from a parent, as compared with others who had not. And the third was to compare the frequency of disturbance in a group of infants after they had an initial disturbance at a certain age with the frequency in another group that had had no disturbance by that age. Prior to carrying out these tests, the fund of experience of general practitioners and paediatricians may give them a shrewd idea of what to expect.

The second is much harder to force to an issue. I have brought out that where common or garden manifestations of secondary narcissism can be noticed in young children, this means that the phase of primary narcissism is already over. I have also added an experimental consequence, that infants just old enough to use a cup could be tested to see whether they treated a favourite cup as a rudimentary personal object or simply as an instrument. This would decide the issue between the view of the infant as solely primary narcissistic or the view of him as entering into object-relationships at a tender age.

Should the theory of primary narcissism be refuted, important as this advance would be, it is important to count the losses. It was one of Freud's many great theories, founded for a variety of good reasons, and no less in stature if in the end it turns out to be one of the few of his theories to fall down. He introduced it to help in explaining a great array of diverse situations, and these would have to be faced if the theory of primary narcissism is given up. But this happens in science, and if the evidence turns out decisive in a certain way the theory of primary narcissism will have to be rejected.

I have suggested that most people tend to hold the cabbage theory, at least in one context, and also the theory of primary narcissism, in another context. It should be added that they also tend to regard secondary narcissism, in another context, as characteristic of young children.† That is to say, they

† Piaget's (1926) important investigations seem to be passed by his giving much too narcissistic a picture of children.

think of young children as being aware of other people but not being capable, even in the most rudimentary way, of caring personally for others, but treating them as people say to show off to or get things out of. This view should be mentioned, but I have not discussed it because it is not theoretically so fundamental as the others. It does not have consequences that are so dire. It is simply a one-sided view, so far as it comes from accurate observation, resulting from not having had dealings with infants in which secondary narcissistic traits do not loom large; for it is also a matter of observation, after all, that there are very young children who are highly aware of others as persons and recognize their needs in some measure. Although the secondary narcissistic view is not so damaging as the cabbage theory or that of primary narcissism, it can also be unfortunate in its consequences; for the chief way of fostering object-relationship in a young child is to treat him as capable of it.

Some may think it hardly justifiable to take the cabbage theory so seriously, since it is obviously not a serious rival to the theory of primary narcissism. But there are strong reasons for considering it. The theory is seriously held, though not overtly, by great numbers of people who have the care of infants. Moreover the proposed experiment that could refute it would thereby establish the theory of syndrome-shift and the hypothesis of psychosomatic disorder.

There is an important loose end to be mentioned. On numerous occasions I have referred to a phase like primary narcissism as lasting a "considerable time" without ever being specific. Prior to carrying out the proposed tests, there would be no gain in attempting something more definite. Likewise, if the tests refuted the cabbage theory or that of primary narcissism, it should be noted that the results would have to be accompanied by a statement about age. No one supposes that primary narcissism lasts till the age of five. The classical view was that it dominated till "fairly late", I suppose well into the second year at the earliest. Now the experiments proposed could be decisive for the truth or falsity of the theory at about six months. That would be an enormous gain, both for theory and practice. But could they decide the issue for the age of a few weeks? So far as the present enquiry goes, the tests proposed do not wholly rule out the possibility of short phases, lasting a few weeks, of auto-erotism followed by another short phase of primary narcissism. The tests of the cabbage theory might indeed be capable of being extended backwards close to the beginning of life, but for the theory of primary narcissism it is less easy. For anyone who has learnt to see object-relationship in infants, say at 6 months when it might be possible to disprove the presence of primary narcissism, it is not so difficult to see it also at the age of a few weeks; but an experimental test would be hard to devise.

I hope I have shown that a paediatrician or general practitioner has to come to terms with one or other of the foregoing theories if he is to feel

secure or at least consistent in his outlook towards diagnosis, prognosis, and treatment of infants; and if he does so I think it is highly probable that he will have much less difficulty in coming to terms with the various more sophisticated theories in the fields of dynamic and academic psychology, as well as keeping his balance when confronted with the powerful influences of physical medicine.

REFERENCES

- BALINT, M. (1935) Critical Notes on the Theory of the Pregonital Organisations of the Libido, *Primary Love and Psycho-Analytic Technique*, London, Ch. III.
- BALINT, M. (1937) Early Developmental States of the Ego. Primary Love, *Primary Love and Psycho-Analytic Technique*, London, Ch. V.
- BALINT, M. (1960) Primary Narcissism and Primary Love, *Psychoanal. Quart.* 29, 6-43.
- FAIRBAIRN, W. R. D. (1952) *Psychoanalytic Studies of the Personality*, London.
- FREUD, S. (1914) On Narcissism, *Stand. Ed.* 14.
- GROEN, J. (1957) Psychosomatic Aspects of Syndrome Shift and Syndrome Suppression, in *Psychosomatic Research*, Oxford, 1964.
- KLEIN, M. (1932) *The Psycho-Analysis of Children*, London.
- MILL, J. S. (1881) *A System of Logic*, Bk. 3, Ch. VIII.
- PASCAL, B. (1955) *Opuscules et lettres (choix)*, (Edited by L. Lafuma), Paris, 126.
- PIAGET, J. (1926) *The Language and Thought of the Child*, London.
- POPPER, K. R. (1959) *The Logic of Scientific Discovery*, London.
- POPPER, K. R. (1962) *The Open Society*, London, Vol II, Ch. 11.

CHAPTER 11

The Problem of Classification in Child Psychiatry

(Some Epidemiological Considerations)

by E. MILLER

THE problem of classifying mental disorders has assumed such international importance that the World Health Organization established a committee to examine the world climate of opinion on this clinical issue. If a science in theory and in its practical consequences is to be advanced, there must be some transnational, or better still, cultural agreement as to the meaning attached to the names assigned to clinical conditions and their relationships one to another.

Clinical conditions are states of persons and when we are dealing with the uniqueness of persons the act of classifying robs the individual of his uniqueness although at the same time it relates him to his fellows. We can always recognize a person through his name and address whereas a class has no local habitation but merely a name. Professor Stengel was responsible to the WHO for laying out the various classifications presented by different international psychiatric bodies and persons. In doing so he disclosed a bewildering number of diagnostic categories and their classes and he seems to have come to the pathetic conclusion that the various regional class layouts agreed only in a broad and hardly useful sense: and this largely in regard to adult disorders which have arrived at a sufficient degree of stability to be put into frames for recognition. Professor Stengel had to add the sad fact that little had so far emerged as regards both diagnosis and classification to produce a predictive order in child psychiatry.

In no field of scientific description has it become more desirable to be satisfied at this stage with operational definitions; furthermore, such operational definitions must have some reference to the socio-medical investigations, subsumed under population masses, the hazards of upbringing which in childhood in particular alter the very complexion of a condition. We shall see later how classification must vary according to the source of origin of our facts which means not only from what social locality they derive, but from the observers and those who judge the severity of the condition. In other words, there may be as many classifications as there are approaches, and even the diagnosis of an individual condition will be a function of the observer's experience and indeed of his prejudices. Historical

change over the centuries of medicine show how so-called entities have been transformed, not only by the growth of knowledge, through the correction of old errors, but by the assignation of different class names used in adult psychiatry and applied, somewhat indiscriminately, to children. Professor L. Kanner stated in the 1935 edition of his classical *Child Psychiatry*, that Professor Adolf Meyer was "Justly dissatisfied with the psychiatric classification based upon rigid nosological concepts of 'disease entities' and preferred to deal with frequently recurring combinations of facts which sometimes occurred in pure culture and sometimes in combination." These sets of facts he broadly categorized as *Ergasias*, or psychopathological behaviour patterns. These were largely psychopathological only in regard to their mental consequences at the behavioural level. The *Anergasias* and the *Disergasias* and the *Oleergasias* were all in their way conditions with largely organic substrata permanent where there were structural changes, or transient where toxic and metabolic disorders were changeable or curable. Nevertheless many nonstructural disorders could be, and were observed to be, woven into a somopsychic complex to which probably all disturbances of behaviour are related. The fact that the majority of children remain invulnerable to many physical assaults shows that those who are have had some early emotional stress or complex finding their expression in even a fleeting physical assault. There is, indeed, such a wide spectrum from the organic to the functional, from the relatively normal or trivial to the serious and intractable, that the assignation of classes has largely an operational significance for the handling of data for comparing or relating conditions; and in childhood, in particular, differentiation of somatic from psychical becomes more difficult the earlier we go back in the child's life.

The simplest classification is little more than an arrangement for recognizing, handling and disposal. Fundamentally a classification involves, or at least is a part of, an hypothesis as to the nature of the things subject to classifying. A class is a group with certain recognizable common qualities. The essential business of a classification is to pick out the traits which are a most significant clue to various classes. The greater the knowledge a person possesses about a group of objects, the greater the likelihood that he will be able to pick out the significant attributes or traits for marking off a class. In so doing the definition given to a class by the trait also differentiates it from neighbouring classes; in other words it establishes a series of relationships between an ever increasing family of classes with the growth of knowledge. Now classes are easy to come by definitions if they have a static quality; by that token they do not lose or modify the traits or attributes which mark them off from others, e.g., a traffic expert may find it expedient to consider traffic movement and control by getting clear the varieties and sizes of the different vehicles that make up the traffic—buses, private cars, lorries of specified weight load, scooters, trams and occasional horse—drawn vehicles. He knows he can be certain that they do not transmogrify and

therefore from day to day he only concerns himself with numbers and kinds, and therefore traffic direction and control is more possible. Whatever may be the problem at stake he can rely upon the constancy of the items as regards their definitions.

But suppose he were dealing with objects which were subject to growth gradients, that is that at first they were embryonic material like the part objects on the assembly lines of a car factory. Even that would be simple because by a species of preestablished harmony in the designing room, the parts can be subjected to a simple prediction process that fragments A,B,C, to N, are traits in a final class—the finished car.

Now in a similar sense human beings have a relative constancy in terms of the obvious prediction that the babe will, fate being kind, become a girl or boy—a man or woman of maturity. For each grade in the developmental order a definition is necessary, and in organisms which undergo significant growth changes, a larva to caterpillar to butterfly, and so also from sucklings to weaners, to toddlers, to pubertals, to adults, we see both changes in the longitudinal order and constants in the periodic transections. The child is the father of the man, as Wordsworth said, and in the sense that he bequeaths to his adult future nature the potentialities for the later form and function.

We can say that the human subject has a class trait or group of traits which differentiate him from other mammals, but that he also has emergent traits which are at first absent and then appear, as we say, as maturation marks or landmarks in a natural history. We therefore have predictions or expectations. But we might well enquire are we able to predict because we give a collection of facts a name which we can recognize on another occasion, or do we mean by prediction that we know what persons will become if they are possessed of certain attributes which make certain circumstances lead to certain consequences? An untreated disease will tend to an end point if left alone, or will resolve into a cured state without either signs or symptoms if treated in some way. Does such power of prediction depend upon the assignment of a pattern of qualities which has been assigned a name? This would reduce disorders or diseases to a group of phenomena which have essentiality, that they are more than syndromes but have a sort of platonic reality—irreducible to more simple form, and yet are capable of change, whereupon they become something else which requires a new name.

In fact the only continuous element in an investigation is not the disease but the person, and this latter is an entity which is itself kaleidoscopic within a frame, the constancy of which can only be subjectively defined by the person who, in his ego awareness, can dare to say, "I am, and I was, and I hope I shall continue to be". How many of us, however, in looking at an infant portrait of ourselves has, psychoanalysis apart, the slightest sense of belonging? We have no pull of a body image to take us back personally to that portrait. Yet what *is* the continuum which psychoanalysis claims to

establish with all its modalities? This opens up the issue; can we assign to the childhood years the names for conditions that rule in the years beyond the biological watershed of puberty?

This is an issue which divides the psychiatric world, and it is division which at first has semantic characters and thence diagnostic consequences.

The introduction to the World Health Organization work on the section Classification of Nervous Disease as an international requirement, speaks of classification as fundamental to the quantitative study of any phenomenon. If any actual study for the purpose of public health is to be of any value, then the quantity concept of disease is an indisputable necessity. Policies for control depend upon such analyses. It must clearly be differentiated from mere nomenclature which must indeed precede it, for even Adam before the expulsion named the beasts after their kind, and we do not know how he would have renamed them after the eating of the Tree of Knowledge changed his insight. It would surely have made all the difference. Indeed the psychological insight would have given a new intention to his classes—all that preceded was mere play! In the field of medicine, and *par excellence* in psychiatry the impulse to define and to classify has an immediate therapeutic goal, and although we may need statistics which deal with mass qualities and traits, the essence of the subject is the quality and destiny of an individual person. Nevertheless, whenever we deal with individual adults or children we are asking ourselves even *soto voce*, "Where does he belong?"—and we ask the question to help us decide what to do with him, treat him in terms of a definable goal, e.g., does the child belong to a certain intelligence age group and therefore where in the existing educational system are we to place him? Is he a member of the class, e.g. of Rheumatic Chorea or is he a neurotic choreiform subject? According to one or other of these classes he will be treated. Yet even with this assignation the social condition and history will alter the assignment.

The social relationships of a patient or a group of like persons will, in the light of the modern trend towards social medicine bring any class naming nearer and nearer to legal requirements as well as to concepts of public health, and this consideration becomes increasingly obvious in psychiatry of young and old.

The WHO which has for years been wrestling with the problem of a rational classification, has been aware of this issue and its efforts have shewn up the need that the properties of each class of phenomena must be semantically clear for two reasons.

- (1) To answer the question set by each discipline, e.g., medicine, surgery, accidental occurrences to the organism, psychological reactions to stress, overall psychiatric states of a variety of causes and at different critical ages,
- (2) To answer questions common to all the disciplines in so far as they are together concerned with the recognition of defects or disorders

which have at some time or another medical, in the narrow sense, social and juridical repercussions.

By repercussions is meant the consequences of being assigned to a given class because of the clinical appearance.

This gives a definite pragmatic slant to the thesis of this chapter. But before practical and empirical attitudes can be safely assured, a theoretical inspection of our concepts is necessary.

How far do the name and classes we use represent real states or processes? Study of the natural history of disease as a guide to classification has become a part of all progressive programmes of medical and particularly of psychiatric teaching. The history of medicine has shown since the accent on function as against structure, has been achieved, a rational view of disease that was formerly lacking. It was a venial sin in the early centuries with the great anatomical discoveries to give to disordered function a local habitation and a name. But that has passed with the appreciation of the time factor, progression from phase to phase, which sometimes produced a sense of destiny that each human being with such and such a constitution and open to such and such an infective assault or other stress factor would be subject to a relentless march of events which only a specific discovery of a factor could deflect the organism back in the direction of normality. The geneticist as well as the bacteriologist gave to the organism a stamp, and insignia which was the label or class name of a disorder which was irremovable and all we could do was to remove the accidents rather than the properties which made up the features of the essence of the disease.

Psychiatry is packed tight with historical considerations. These are not as simple as would appear, for a history, and that means of a human being, is in a setting or matrix which is also history determined, that is a family pattern and/or a society in progress. The older psychiatry which in the hands of Kraepelin and his forerunners was happy in the handling of a mosaic of clear patterns of abnormal behaviour had a limited sense of historical sequence. The notion of a process schizophrenia had a pseudo-historical quality—but it was one of unfolding of an already existing pattern—a potentiality. A schizophrenia in historical terms *D. Praecox*, was already there in more than an embryonic form with a name, but a homunculus which either grew to full stature or became focused more clearly with the appearance of the necessary stress, on the pull of the trigger.

Semantically, however, something went wrong as soon as the class name and the class content were subject to close inspection. The term "process" needed more scrupulous dynamic interpretation. Indeed the word only attained its scientific or better still its logical maturity with the advent of Freud.

But as we shall see even the Freudian doctrine of a continuum of a psychophysical progression from infancy to adulthood does not suffice to cover all the process inherent in a life. To separate the psychological processes

from others, that is the unfolding of genetic endowment and the changes consequent upon intercurrent illness, would be to introduce the cartesian dichotomy. Nevertheless for the purpose of simplification we might well confine our thoughts to the so-called psychopathic unfolding in order to inspect the concept that adult disorder as seen analytically will tell us what prevailed in the mental life of the child. To adult conditions have been assigned class names which in themselves are subject to constant modification with advancing knowledge. We cannot stay to consider the applicability of Kraepelin's large classes and the subdivisions proposed by Lenhardt and Kleist, to mention only three outstanding classifiers. These are all static classes and although process has been applied for example to some schizophrenic patients whose downgoing has the appearance of a destiny, it is this classical core of the concept which has inclined some clinicians to the view that if the subject does not so deteriorate he does not qualify for membership of the class. This is the critical position in such static or platonic classifications. But can we apply the term "process" which is organism *par excellence* to the child disorders without submitting all definitions to a new semantic test?

The field of adult psychiatry is laid out like a patchwork of large clinical entities sewn together to cover a discipline—but the discipline is not identical with the family of human beings—hypothetically normal and those whose deviation from a supposed average cause them to fall into isolated patterns, each with similar properties—the Manic Depressive group, the Dementia P. group of Kraepelin and its clinically defined sub-classes and the other groups which, consequent on other observed differences, that is with physiopathic findings, are then assigned to organic areas. These areas belong as much to the classification imperatives of the human mind, as to actual natural genus classes as the physical process of animal and vegetable life.

How far can we pragmatically and theoretically place children who are afflicted, into these classes? Even if by the painful and stormy retrospection of psychoanalysis we see a relationship between a knot of symptoms or character traits rooted in childhood experience which emerge with surprise and emotional abreaction, how can we assume that there is a true class likeness between the two ends of the series? The class likeness may be dependent on the circumscribed likeness of the emotion felt now, and emotional conflict which appears to have existed in childhood. Similarity of certain properties is no warrant that the state of the child at six or earlier, is definitely the same as at the age of e.g. thirty when the analysis is being experienced. The delta of the Nile or the Mississippi has some of the water of its origin but the geological stratum of its wandering to the sea have added much to its content, its water, its mud—its configuration. The issue has been raised as to childhood diagnostics in three fields, important fields—in the field of psychosis, in that of neurosis, and in the field of delinquency.

Some years ago an eminent British physician, Sir William Job Watson, in discussing the alleged specificity of diseases as stressed by the founding father of epidemiology, Sydenham (of Chorea fame) shewed that conditions had a natural history and that what at one time looked like disease X in a longer or shorter time became Y. He spoke of condition coming into being *sui generis*. Of course his difficulty arose from the then novelty of infective disorders and non-realization of the possibility at a time of low social hygiene techniques of mixed infections. Nevertheless, the attention he gave to the problem threw light on the issue of specificity, that is the whole organism and its vicissitude was implicated in a manner which specificity or disease entity concepts could not wholly explain.

This problem of specificity is of importance because it takes us to the heart of the issue. Can we apply the terms of "adult disorder" (here confined to the psychiatric disorders) to the young human organism. One deliberately uses this triple worded phrase to keep to biological universe of discourse and to specify the still unfinalized state of a growing system. Although at any age level of a human being there is no finality—old age has its downgrowing gradient as childhood and youth has its upward and broadly anabolic gradient, yet for pragmatic purposes we can say that the psychical economy has reached a plateau—or equilibrium phase from early adulthood to the so-called climacterium. A child as a growing point is full of potentialities, genetically it has not yet asserted all its promise nor its possible shortcomings; genetics is in a state of becoming, that is what maturation implies. This, however, introduces the concept of maturation in a strictly psycho-physical sense and perhaps this nexus of the bothersome inheritance from Descartes is useful in the study of the child. The arbitrary separation of physical from mental is misleading when applied to children and may lead to diagnostic and prognostic errors of a dangerous kind.

The semantic difficulties and their consequences arise from two sources: firstly from the assigning of names to conditions which arise from genetic appearance which emerge *seriatim* in the course of a child's life, and secondly from the behaviour sequences arising from cultural impacts from birth onwards. There will of course be cross currents arising from the relationship to be seen from the conflicts of these two orders—process having perhaps at times contradictory ends and therefore producing the vectors which we call normality, character and disorder. These, all three, are of course expressed in value judgements differing not only in various cultural settings and according to different psychopathic and physiopathic theories. The assignation of adult disease entity names to child conditions has its roots in both processes, but it is wise to confine oneself to the consequences of psychoanalytical thinking and here as in other disciplines, words have been both an aid and a hindrance. Before dealing with the issue which has illuminated all our work, let us revert for a moment to the conditions which, while carrying both physical and mental marks, can be considered as good

introductory examples to the low value of specificity in disease naming and therefore in treatment.

Let us first consider the varied field of obsessional compulsive conditions.

Organic disease of the C.N.S. and the appearance of obsessional-compulsive conduct has been known for some time and was certainly brought home to us with great emphasis from the great epidemics of Encephalitis Lethargica of the early nineteen-twenties.

Many examples have been given of the following months after a recognized infection of the C.N.S., but some had such brief infective illness that history was only able to supply inference and not incontestable fact. This too gradually became associated with "large movement complexes"—many quasi-purposeful as if derived from conditioned reflex situations. Dysarthria, dysphagias accompanying these quasi-purposeful complexes of conduct, and for example the appearance of pituitary dystrophies gave the physiopathic *coup de grace* to the simple conditioned reflex diagnosis. Still not a few children had no focal signs, only obsessional behaviour, tics, rituals, explosive language, sometimes only delinquencies of minor and major degree with or without feelings of remorse. Many behaviour patterns invited Charcot's description of them as "caricatures of acts." Eventually the personality as a whole became involved and the assignation of psychological labels without reference to physical history became misleading—taking one into a therapeutic *cul-de-sac*. To some observers the features of behaviour of many of these obsessional children, the schizoid features appeared prominent. In the light of the functions we assign to the mesencephalic areas of the nervous system, the affect is either stifled or accentuated by this mechanism. The ideational elements and motor elements arise in higher structures and are qualified by the mesencephalic substations. The naming of the disorder can be decided at any level you please if you assign a particular pathological impulse to one or other of the regions. Epstein in 1938 described these motor forms under the rubric of "neuro-masculine disorder". Other observers centre the disorder in schizoid personality patterns, the neurologist might well decide in the light of knowledge gleaned from Encephalitis and from E.E.G. findings in the Temporal Lobe that the disorder, despite personality history lies in and deserves naming in neurological terms. Psychoanalytically the well patterned obsessional compulsive action and thought of childhood belong to the mechanism of growth in its introjection-projection aspects. To give this a name having any causal etiological significance we would have to devise a formula having some affinity with the reversible action formulae of chemistry.

The term obsessional-compulsive is purely descriptive and in that sense it might apply to any such manifestation at any age at which it appears and indeed from whatever discoverably causal mechanism or psychology. As a prognostic indication it fails lamentably for the reason that the condition

as seen in childhood undergoes change, indeed mutation, and is utilized in later years in so many different modes as to call for different names—for each mode has a different prognostic character. The earliest tic formation may have quite transitory life—the organic components may well give us clues as may the obsessive pattern of the culture in which the child has been nurtured.

Hysteria as a classical term—ikonographic, is equally a term of abuse to some—particularly so at adult levels. How applicable is the term to childhood? What indeed do we mean by it? Are we thinking of mechanisms of dissociation or of character? In applying such words as “dissociation” and “character” to the subjects that are using them as properties, we are operating simultaneously in two dimensions. In the history of psychiatry, forgetting for a moment the committed word Hysteria (due to the disorder of the womb) the term was an overall label to indicate certain facts of behaviour which either occurred together in a complex, or it referred to isolated happenings which in terms of medical views on function and structure were not physically based but were assumed by the patient’s anatomical notions. In the sense of groups of signs or isolated signs the condition known as Hysteria was all too easily applied to children. With the passage of time which embraced the outstanding observational skill of Charcot, Richer, Janet (Freud entered the field with a new dimension of interpretation using another sign language and another order of definition) and their gallic logical economy. Hysteria became a label for signs as observations, for signs as conceptual statements of what the possessor of the sign was in himself—he was suggestible, histrionic, labile in emotion. These too of course were signs which could be included in real definition, e.g., an hysterical subject could be persuaded to do this and that, i.e., assume a posture or lose a sensibility. To this extent children were capable of being included in this class if they fulfilled the criteria contained in the definition of each of the *propria*. But the appearances were so rare that in the majority of instances the conclusion drawn or the diagnostic label assigned were a carry—over from the more highly structured syndrome seen in adults—certainly post-pubertal subjects of both sexes.

The term “suggestibility” is applicable to all age group slargely because suggestibility as such is a neuralpsychic set which can be established in animals and therefore can be regarded as a sign capable of induction whenever there is the necessary neural mechanism. This is hardly surprising at the level of instinctual mechanisms which have both an outgoing and withdrawal function—operations only too visible in the behaviour of children. In this respect Hysteria is a term applicable to certain behaviour in children but only where they are monoideic and monosymptomatic—a unit concept made familiar to us in Janet’s early writings. It is doubtful whether the same meaning attaches to the more complex disorders still named Hysteria and which cover what is styled the Hysterical character.

We are dangerously near retrospection in calling the personality disturbances of children Hysterical, particularly where value judgements are passed on conduct which offends our ethical ideas and prejudices. Indeed the assignation of Hysteria can only be legitimate where we are confronted by or thorough analysis which discloses the dynamics of splitting of a certain kind. Here again the semantics of the term "splitting" will call for special consideration in terms of psychodynamics—the molar or molecular cleavage which may distinguish a schizoid from an hysteroid psychopathology.† This distinction I believe to be momentous for prognosis in child disorders. The favourite dichotomy of extrovert-hysteria and introvert schizoid is a dangerous consequence of the logical fallacy of accident. A local likeness attaining economically a leading on to identity.

It is strange, disconcerting yet salutary, that the history of medicine shews diagnostic changes not only arising from new knowledge which exploded old beliefs and concepts but new interpretation and new mores. This is particularly applicable to our conception of the child. The older psychiatry, say of the mid and second half of the nineteenth century saw the child as just a miniature adult and even the law was prepared to treat the young person with the same moral rigour as it treated the adult. The notion of development of maturation, or dynamic process, of becoming and emerging, supplied the basis for new definitions, springing from the concepts of *maturation*, of process a experiential impacts as conflicts. The first term has received much attention from those who are concerned with the child development. Gesell sees the child as an unfolding of endowments becoming visible to the observer as the scroll is serially exposed. Experience and environment inflects and specifies—it does not create; it affords the occasions for the utilization of endowments hopefully at the right time, sometimes prematurely; and the parent and teacher are dismayed at the lack of concordance. Meanings are only accurately or even approximately assigned to behaviour when we know what endowment impinges upon what environmental necessity. In fact we ought in our thinking to ask whether the functions we assign to an instinct not at all difficult at animal level, are the same as functions society imposes on an individual? Do we not in psychology, in psychiatry and even in general medicine assign functions in the light of an all too blinkered discipline, and then expect the social person in his social and legal relations to perform the functions which biology demands of the organism. It is at that point of the tangent, that disordered processes arise—the moment is called a disease and its continuation in time is given the label of *an entity*. How far can both the instinct bound child, still subject to imperative maturation processes, and his socially imposed pattern bequeathed by the culture carrying parent be assigned a label? Surely it calls for a formula.

† One can dare the submission that many with Hysteria use defensive mechanisms against ultimate schizopronic fragmentation.

Psychopathology has, despite its great gifts to us of insight in depth been a considerable offender in supposing a degree of undifferentiation upon which patterns can be lightly imposed—particularly the assigning of adult diagnostic names with their all too often prognostic fatality.

Our first task in purging our language of misleading signs and derivative definitions is at first to examine our manner of eliciting data. Both Adolf Meyer and Kanner have put us in their debt by discussing the *complaint* factor. In asking questions, and someone has said that science begins by asking relevant questions, and following them up in such a manner as to cover a field equally adequately and to allow the facts to decide where the emphasis lies. An enquiry as to a complaint is much more complex and hazardous in child studies that go beyond the one-way window observation, valuable though it is. The questioner is in a sense a spotlight scanning a region. But this spotlight is no detached mechanical contrivance: it is goal-pursuing by an observant listener and observer with a culture and a training—sensitive to one set of signs but not necessarily to another. We cannot avoid, according to our training, having a homunculus in our minds—against which we match the subject of our study.

But lest we forget, the parent questioned is also a culture carrier—with pre-judgements frequently of a bizarre kind—whose answers are not always facts but judgements—coloured by fear, by morality—in fact she comes already with all the mechanism of repression and secondary elaboration. From this relativity situation of train and observer on the railway embankment, we have to collect our signs and put them into classes. We need not be dismayed if we are aware, and therefore make the necessary corrections for time, place and social conventions springing from them which influence so socially coloured a discipline as child psychiatry.

Perhaps the most difficult semantic problem springs from a parent's preoccupation with three modes of defining a behaviour in her child.

One, its relation to her own moral judgements.

Two, its relation to her conception of social morality,—the conventions which she and her child dare not offend.

Three, its relation to her belief, all too frequently expressed in the primacy of bodily disorder.

She is already moving in an established dimension of physiopathology by visiting a doctor. The vocabulary might change if she is in the complaint situation with an educational psychologist and still another if she sees her priest. In other words classification is *ad hoc*—a here and now from which further diagnostic and treatment encounters must deliver both the observer and the observed.

Finally the danger of retrospective distortion is well illustrated in another diagnostic field which has aroused interest of a clinical kind but which can be used for the constitutional, the clinical and psychodynamic view-

points. The subject is that of the justification for diagnosing cyclic manic depressions in the field of child psychiatry. In 1888 Mills held that all adult psychoses existed in childhood. Dixon and Greeves claimed to have observed mania frequently in childhood (1885). To Hamilton in 1903 Cyclic Insanity was not uncommon amongst troubled children. Kasanin in 1931 observed affective psychosis. Kraepelin and Straker were satisfied with the facts of early onset; and Baker in 1930 also held with some force that mania was almost a disorder of childhood, with hallucinations and delusions.

How difficult it is to picture the patients of earlier physicians through the haze of half and three-quarters of a century. From personal studies of mental records of over 70 years through Hospital case sheets, case papers and the names assigned to patients, the writer was bewildered to find that the story and the label had little concordance with our present definitions of disorders.

Coming nearer our own time with the influence of psychopathology, the angle of observation is a shifting one. Observers have been more ready to speak of predisposing factors—pre-morbid factors in tracing adult manic-depression. Abraham in the psychoanalytic field was the first to suggest a psychopathology which to him disclosed a juvenile depressive process.

With the advent of the work of Melanie Klein the depressive process is now no longer a mental pattern cyclically recurring in adult life, but a necessary condition of the child's earliest object relations. The depressive, the paranoid-schizoid splittings are a necessary developmental milestone which is passed, surpassed or crystallized. What names are we really to assign to this early process which was first formulated from adult analysis and was then applied interpretatively from Klein's play analysis? In her own writings the term "depression" appears to vary from essay to essay. The sharp demarcation which Freud drew between grief and melancholy has become obscured. On so delicate a matter as the assignation of psychotic mechanism to children, we cannot allow the matter to rest. We need strict semantic safeguards before giving a name to fluid process which changes not only with the growth of each child but with each cultural landmark which the child reaches. Moreover at each stage we are obliged to be alert for the emergence of these maturation signs which a study of genetics can alone provide. What will ultimately save us from the ridicule of other sciences, who heaven knows have their own methodological and semantic dilemmas, will be an appreciation that classification must always be for an *ad hoc* purpose—a pragmatic guide, an operational need. It is obligatory to accept the difficult task of giving names in terms of the discipline from which we collect our data—the genetic, the clinical ikonographic and the psychodynamic.†

† Perhaps we will eventually produce an axiomatic notation or a formulary not as in the chemistry laboratory but a formulary in which entities will be seen in terms of equilibria between changes, forces in a dynamic system; by analogy some statements akin to Willard Gibb's Phase Rule.

The requirements of a child which can only be satisfied through the help of others, are as real as its basic structures. These structures are the instruments of process and this holds good of organic processes which implement the behaviour of a child in the various phases of its mental life.

In dealing with the psychological disorders of children (which may have organic causes) the very fact that a child is so closely related to the persons who are concerned with its welfare and its development along what are regarded as suitable lines, there is all too frequently an unconscious introduction of value judgements even at the descriptive level in the first stages of diagnosis. This is true of many institutions of life where deviant conduct on the part of an individual has to be dealt with one way or another. For example, in the Army a soldier was occasionally styled "inadequate", even before being categorized as, say, a psychopath, which is itself a diagnostic class name of doubtful precision. In prisons the inmates are classed as "obedient" or "rebellious." In school a child may be called "unco-operative", even if this covered a true and objective estimate of subnormal intellectual endowments, sometimes of organic origin, that is subnormal cerebral tissues, of a poor family upbringing and of social conditions which militate against the utilizing even of existing gifts. In other words, we see at this level a classifying of conduct on a moral basis. There is nothing intrinsically wrong in this as long as we realize that we have moral intentions with regard to the guidance of the child.

If one scrutinizes these moral judgements which were so frequently passed upon child behavior, we find that an implicit attitude was present, that is, if a child behaved in such and such a way it meant in the fulness of time he would become such and such an inadequate or undesirable adult. While as members of society we may cherish moral standards and moral behaviour, this classification would belong to moralistic social science rather than to psychology. In other words, it is necessary for an objective scientific approach to study behaviour in all its variations, in order to construct what might be called, borrowing a term from biological sciences, a natural classification. That is to say, that if we were to subdivide a large population we would notice the significant clues enabling us to assign to individuals a claim to membership. At the crudest possible level of classification one might say, for example on a Gaussian distribution of intelligence by accepted tests, that there are retarded children, average children, and endowed children. This introduces no evaluative statement but divides the population into recognizable groups, and permits of this or that form of handling. Diagnosis and classification on the phenomenological level is a means of recognizing. It has already been mentioned that the child is also behaving at any given moment in virtue of its constitutional endowment, and the experiences in the early years of development which have influenced its conduct, and its capacity for happiness or discontent. Psycho-pathology is concerned with aetiology. This does not mean that the descriptive or

phenomenological level of diagnosis is of no concern; but rather from experience gained from history we know how it has come about that this phenomena has arisen at all. Psychoanalysis, for example, has in the course of its development brought forward the hypothesis that all behaviour is determined in the course of development and the conflict arising as between different processes. But putting psycho-analysis and such special theories on one side, one can consider that aetiology might be studied in terms of recognizable crises or "nodal points" in development. We might even give full weight to the common meaning attached to crisis as a turning point, a difficult situation, but the term nodal point might have better generality as conveying the idea of landmarks more or less natural through which the child has to pass in the process of growing, but that these landmarks may have been beset by special difficulties which may arise from constitutional shortcomings or experiences adverse to average speed of passage from milestone to milestone. The term "nodal point" may have a particular significance because at those moments particular strains are felt and therefore at those points deviations from the hypothetical normal might take place in terms of arrestation or acceleration, both of which may be, within the familial or social field, the causes of concern. Consideration of crisis therefore may bring out certain fundamentals such as the basic psychophysical disposition and the emergence of genetic factors at a point when experiences and such and such endowments are not mutually compatible for healthy adaptation to a situation which calls for the combined operation of endowment and *ad hoc* needs.

The variety of deviant behaviour patterns can be the basis of our classification and the voluminous work that has been done to determine what sort of behaviour can be expected at different ages, gives us another approach to diagnosis. A large number of observations have been made on the emergent forms of behaviour which can be the basis as Escalona and others have shown, of a prediction scale, that is, if certain forms of behaviour which one can call class (a) produce in the fulness of time in an adequate sample a pattern of behaviour called (b) then on further breakdown we might say that a constellation of a, b, c, is more likely to produce some years later the constellation x, y, z, than the group d, e, f. These patterns can be readily re-classified in terms of particular functions which certain forms of behaviour subserve, for example such functions as bodily activities; relationships to the parent figure in the very early days of life, such as clinging, suckling, smiling. This scaling of behaviour has recently been considered from the point of view of comparative animal behaviour, that is, the Ethological approach (dealt with by Dr. Ambrose, Chapter 9). For the earliest days and months of life there is no doubt that Ethological comparison would be useful not only in estimating the rate of development of a child, but its possession of normal responses in its early world of relationships. But it has its limitations, even before the acquisition of language and

the upright posture has been reached. A young infant can be usefully compared with the infant chimp but no sooner does he walk, manipulate and acquire words which express wants and the recognition of objects and probably the acquisition of images, then he soars like a rocket high above his simian forebears and, because of those very heights achieved, falls in his trajectory when disease or deficiency or mismanagement show that the forces of human endowment are spent and he regresses, or can regress, to the simian level. In other words, no sooner do the latent gifts of the human level begin to appear than Ethological aids to classification and diagnosis are no longer of value. But nevertheless, as Ambrose shows, the early forms of adaptation must be present even if comparable with the simian. The natural mother recognizes these early adaptive forms of behaviour because her maternal inclusions and empathy know how to meet them in the interest of the child's safety and development.

In parenthesis certain safeguards must be considered. That is, the observation of animal and human child behaviour as we see it in present day discussions is very much under the influence of theory, or, at best, hypothesis. Every theory is the imposition, however temporary, of order, so that we can dare to predict how things and persons will behave. Every classification is in fact a theory as to class order of phenomena which makes for future prediction. But theories and classifications, particularly in the behavioural sciences, should have a limited objective, and should be so couched or expressed as to be capable of modification with every new discovery. In plant life the comparative high stability of genus, species and even varieties, allowed for the admirable constructions of Linneus, and Bentham and Hooker. When we collect our facts in the behavioural sciences, and that is true even in botany, we are creating an order which may suggest new theories of relationship. It is a sort of dialectic process in which different groups of qualities can be made to stand over against one another and allow for further scrutiny and advancement, to bring them together into a higher synthesis. If, for example, this is clearly illustrated in the change that has come over child studies as a result of psychopathological theories, for the more we know about the types of conflict the more we come to realize that the conflicts themselves have had a history, can be modified and actually eliminated, so that the behaving child has now by a dialectic process, become something new, and therefore a member of a new class.

This process implies a considerable degree of elasticity because it is obvious that with the kaleidoscopic changes in growth the frontiers between one disorder and another may be sometimes difficult to recognize or change to and fro as the battle line of a campaign, and it is for that reason that in the classification of child disorders we learn more from the frontiers or margins than from any other region. It has been said that one reason why borderline conditions have not been systematically classified is because of their transient nature in the form of psychological states reactive to specific

situations and reflecting only transient episodes in the onward rush of life. We are forced, because of our growing psychodynamic approach to behaviour, to consider what has been called the existential locus of psychological states (F. C. Thorne). People do not solely exist but exist for the purpose of reaching goals for more adequate adaptation or for such and such pursuit of a better life. Not all psychological states as we perhaps too clearly see them with the laboratory eye, are clinically, personally or socially really significant on long term. Hence there arises the basic diagnostic problem, particularly in child psychiatry, of differentiating the important from the unimportant, and here again the dilemma is concerned with the intrusion of moral judgements. For nevertheless, in social life we have not only to look at people but to judge of the desirability of their conduct whether it is aetiologically due to causes outside their control. For example, does the changing face of society, both in its overall economic structure and in its moorings, alter the character of the neuroses and the behaviour disorders of the child? Clearly the present rapid changing scene suggests that it is so. Even taking into account the striking advances in both psychology and medicine, the therapeutic attitude has also changed in consequence of changing customs. The present crisis, for example of puberty and adolescent age groups is not solely due to possible developmental accelerations but due to changes in the social order following upon economic advance and also advances in our knowledge of the aetiological factors which go to produce the psychic conflicts and their reactions in the adolescent community and the adults alarm at adolescent claims to recognition.

EPIDEMIOLOGY IN RELATIONSHIP TO CHILD PSYCHIATRY

The many sources from which our knowledge of child disorders arise and from which we can make a classification can help us to consider the incidence of these disorders, making an epidemiological approach possible, yet extremely difficult. The variety of these sources in some respects involves the introduction of those valid judgements which are implicit in all the statements made by the assessors or judges at the source.

Classification of child disorders may be profoundly influenced by the selecting machine; where do the cases come from; what are the views of the first observers; which means what does he "want" to see, i.e., into what mental matrix in his own mind do the phenomena fall? All psychological material, with exception of clear cut and profound *defect*, cerebral and *endocrine disorder*, is very flexible and in children is on a steep growth gradient.

There are many such judges coming from the whole field of human society, lay and professional: the parents, the teachers, the general practitioners, the paediatrician and the psychiatric specialist, and even where society is involved, as in delinquency, the probation officer and the ma-

gistrate on the Bench. Even in the privacy of family life the priest too may venture a religious interpretation of a behaviour disorder. In other words, *these key persons classify the child*. None of them is so objective as to be able to see the child beyond the good and evil which their social, scientific and religious standpoints force upon them.

In general medicine the study of epidemiological aspects of disorders, that is their distribution and frequency is arrived at through established techniques of collecting and arranging data. The established procedures are through mortality and morbidity rates, local and general, hospital records and sources; in regard to children in particular, such as school referrals and again in the last instance, via the medical officer of the school or the schoolteacher. All these sources are of very limited value, being highly selective in the first instance and classified according to the interests of the judges at the source. Even nomenclature is not yet uniform by any means. A nervous child has one connotation in the mind of the paediatrician, another one in the mind of the teacher. It must be admitted that particularly in psychiatry, observations and judgments, meaning by that even tentative diagnosis made by individuals may produce individual nomenclature, useful to a high degree when studied in the light of the immediate clinical circumstances but this is only the very raw material for classification. If one studies epidemiological records, the classes, if they are any use at all, are very broad ones and can be generally recognized. Their detailed analysis comes from useful breakdown into sex, age and religion. We might take, for example, the studies of an epidemiological kind seen in the work of Pasamanick on pregnancy injuries to the foetus and their neurological and possible psychological consequences. Here we have a relatively clear aetiological background, but even Pasamanick has suggested the useful spectrum of a casualty continuum from minor to major. The only studies worthy of carrying any weight in future epidemiological and classificatory studies, are those that are focused on an issue which can arise from mass material which gives grounds for good sampling.

Caplan rightly warns us that "Epidemiological studies have been hampered by the fact that a syndrome can be conceptualised by various investigations in different contexts; medical, sociological and educational". A unified definition acceptable either to a single professional group or to all of them is lacking and when this is particularly evident in the study of forms of retardation which *prima facie* could be categorized in some degree of uniformity in terms of I.Q., or degrees of social adequacy measured on say the Doll scale. For example, however, fifty aetiological factors have by one observer been implicated in retardation. How much more complex therefore might be the clinical consequences arising from this multitude of factors? And in the general clinical field of child disorders epidemiology would be even more difficult considering the variety of disturbances seen by the various observers already cited. One has but to look down the table of contents of

any journal of child psychiatry to realize that the multitude of phenomena and their distribution in the various *observer* fields calls for classification.

For example, when the physician psychiatrist is questioned in a Court of Law regarding the diagnostic category into which a criminal offender falls, it is rare to find him satisfying legal requirements. One legal authority, sympathetic to psychiatry, says "There is no consensus amongst the different schools of psychiatry, and even amongst diagnosticians, holding similar theoretical views, for example the difference between the organicist and the psychopathologist; even the histories they elicit can be very different." We must not, of course, make obeisance to legal requirements alone; but we should convey to the lawyers as well as to ourselves that many of our diagnostic concepts have ragged edges, and the most difficult cases are the borderline ones. However vital to advancement borderline studies may be, they make classification difficult and epidemiology a subject for the dim future. When surveys are made using data collected from the population at risk, and not from *ad hoc* hospital and clinic records and vital statistics, the standardization of diagnosis requires special consideration. Diagnosis is only a partial assessment. When aetiology is concerned, the diagnosis must be based on easily recognized clinical features, e.g., in psychiatry in particular most standardizations and comparable observations are largely symptomatic. Such easily collected data can be subject to a variety of analyses from which discoveries can emerge, such as may yield a basis for new classifications or constellations or syndromes. In this way the epidemiological approach opens up new avenues for the identification of individuals in a large setting, that is the ecological aspects of the individual, and as regards the child in particular its field properties, in the Lewin sense. Again with respect to child disorders as seen in the population survey, more than the so-called clear-cut syndromes will emerge; more marginal conditions will appear, and therefore the uniqueness of the individual will become apparent. This is of the very nature of psychological studies, that is to catch the special case embedded in the social matrix. The larval case will be recognized as standing out in a population mass, calling for special attention in its own private right. This is the essence of therapy, to deal with an individual's needs without losing sight of the child's membership of the larger group be it family or neighbourhood. Here the topological approach brings the individual case into the field dimension which is of the essence of epidemiology. The child is seen essentially as a pattern on a social ground, but a pattern subject to growth gradients of its own maturational processes subject to the impacts of a growing family in what may well be, particularly to-day, a changing society.

Analytical dynamic psychiatry may claim that the psychic process can best be elucidated and classified by the study of the individual *per se*, and that he is in his own place and time. But history has surely shewn that if we examine forms of disorders in case records over 50 years or more, that

clinical forms have changed in shape and in incidence. Cultural influences are changing the child, its psychopathic reaction formations, and even the varying weights assignable to different items in its syndrome. It may well be, and here epidemiological approaches are particularly revealing that the so-called crises of childhood with which it has to cope may well alter in time and intensity in accordance with social pressures arising from changes in family and group mores. This consideration must give us pause in giving undue weight to the concept of the natural history of a disorder. Alongside the so-called natural history of a disorder lies the history of the social order and its ever-changing climate of social and clinical opinion.

REFERENCES

- CAMERON, K. (1955) Diagnostic Categories in Child Psychiatry, *Brit. Journ. Med. Psychol.* XXVIII. Pt. I.
- KANNER, L. (1948) History of Child Psychiatry. Victor Robinson Mem. Lecture.
- PICK, T. (1961) Behaviour Therapy and Child Psychiatry, *Journ. Child. Psychol. and Psychiatry*, 2.
- THORNE, F. C. (1964) Diagnostic Classification and Nomenclature in Psychol. States, *Journ. Clin. Psych.*, XXI.
- KANNER, L. (1937) Child Psychiatry.
- EISENCK, H. J. (1955) Psychiatric Diagnosis of Psychiatric States. Psychological Reports, 1. 3-37.
- ESCALONA, S., and HERDER, G. (1959) Prediction and Child Development Menninger Clin. Monog.
- GOLDSTEIN, A. (1964) Psychiatry and Legal Process, *Jour. Orthopsych*, XXXIII.
- STEBBING, S. (1942) Modern Introduction to Logic.
- STENGEL, E. (1960) Classification of Mental Disorders, W.H.O.
- REID, D. D. (1960) Epidemiology of Mental Disease, *W.H.O. Tech. Rep. Ser.*
- MURPHY, B. (1962) The Widening World of Childhood.
- PASAMANICK, B. Assoc. for Researchers, *Nerv. & Ment. Dis.* vol. XXXIV, 1954.

•

SECTION 2

SOME BASIC CLINICAL PROBLEMS
IN CHILD PSYCHIATRY

CHAPTER 1

The Directive Function of Speech in Development and Dissolution†

by A. R. LURIA

PART I: DEVELOPMENT OF THE DIRECTIVE FUNCTION OF SPEECH IN EARLY CHILDHOOD

Along with the semantic and syntactic functions of speech, it is necessary to distinguish also its pragmatic or directive function. In the development of behavior this function manifests itself in the fact that a word gives rise to new temporary connections in the brain and directs the system of activity of the child that has mastered it.

It was a full quarter of a century ago that the eminent Soviet psychologist L. S. Vygotski pointed out the role played by the words of adults in the development of the child's mental processes and formulated his well-known thesis that what the child at first does with the help, and on the instructions, of the adult, he later begins to do by himself, supporting himself with his own speech; that speech as a form of communication with adults later becomes a means of organizing the child's own behavior, and that the function which has previously divided between two people later becomes an internal function of human behavior (Vygotski 1934, 1956). In the twenty-five years that have elapsed since Vygotski's death the problem of the role of the word in the organization of mental life has been the subject of numerous Soviet investigations (Rozengardt 1948; Ljublinskaja 1955; Luria 1955, 1956*a*, 1958*a*; Kol'cova 1958; and many others).

There arises, however, the question of how this pragmatic, directive function of the word is formed, and how its formation relates to the formation of the significative or generalizing functions of the word. A brief review of the pertinent experiments forms the topic of the present communication.

I

A child at the beginning of its second year of life is already in command of a considerable number of words. He understands such expressions as *cup*, *cat*, *fish*, *horse*, and can without difficulty hand someone the object if it

† The paper was published in *Word*, vol. 15, pp. 341-352 and 453-464, 1959.

is mentioned. But is the pragmatic, directive function of speech at this stage as effective as its significative, nominative function? Can the cited word always direct the child's activity with full effectiveness?

An answer to this question is suggested by the experiments which we have carried out in collaboration with A. G. Poljakova.

Before a child aged 1.2 to 1.4, we placed some object, e.g. a toy *fish*, and asked him to hand it to us; the child did this without particular difficulty. We then asked him, in the same situation, to hand us the *cat*. The child at first looked at us in disbelief, then began to look around until he found the object which had been named. It would seem that the adult word fully determined the child's action.

Let us, however, repeat this experiment in a somewhat more complicated situation. Let us place before the child two objects: a toy *fish* at some distance from it, and half way toward the fish a brightly colored toy *cat*. If in this situation we ask a child of 1.0 to 1.2 to hand us the *fish*, his behavior will be different. The uttered word will evoke in him an orientational reaction, and his glance will be fixed on the fish; but his hand, stretched out toward the fish, will stop half way, turn toward the cat, and instead of giving us the fish that was requested, the child will grasp the *cat* and offer it to the experimenter. The directive function of the word will be maintained only up to the moment when it comes into conflict with the conditions of the external situation. While the word easily directs behavior in a situation that lacks conflict, it loses its directive role if the immediate orientational reaction is evoked by a more closely located, or brighter, or more interesting object.

It is only at the age of 1.4 to 1.6 that this phenomenon disappears and the selective effect of words is maintained even in conditions in which the components of the situation conflict with it.

We can easily disturb the directive function of the word in still another way. It is known that the word physiologically excites a certain system of connections in the cortex. In the normal, mature nervous system these connections possess considerable mobility and easily replace each other. As has been shown in many investigations (cf. Luria 1956*b*, 1958*a*; Homskaja 1958), the mobility of the connections evoked by the word (or, as I. P. Pavlov called it, by the second signal system of reality), is even greater than the mobility of connections evoked by immediate signals.

However, the mobility of nervous processes in a very small child is still quite inadequate, and connections evoked by the word possess a considerable inertia at the early stages of development. Taking this inadequacy of the mobility of connections in the early stages of development as a premise, we can measure the effectiveness of the directive function of the word.

We place before a child of 1.0 to 1.2 two toys: a fish and a horse, this time placing them at the same distance and giving them dimensions and colors that are equally attractive. We ask the child to give us the *fish*: he does this easily. We repeat this experiment three or four times, and the

effect remains the same. In exactly the same tone of voice, we now utter a different instruction and ask the child to hand us the *horse*. Despite the fact that the meaning of this word is well known to the child, the inertia of the connections evoked by the first word is so great that in many cases the child again offers the experimenter the fish. The directive function of the changed verbal instructions is here vitiated by the inertia of the connection that has been established.†

The loss of the directive function of a word whose meaning is well known can also be observed in an experiment involving actions designated by verbs. If we give a child of 1.2 to 1.4 a stick on which rings are placed and we instruct him, "Put on the ring," he does this easily. With equal ease he will, in another situation, execute the instruction, "Take off the ring." However, if the child has several times *put on* a ring and is holding the next ring in his hands, the instruction "*Take off* the ring" loses its directive meaning and begins to function non-specifically, merely accelerating the activity of *putting on* the ring onto the stick (Poljakova's and Ljamina's experiment).

The directive role of the word at an early age is maintained only if the word does not conflict with the inert connections which arose at an earlier instruction or which began with the child's own activity.

II

Experimental research can do more than ascertain the bare fact that the directive role of words is not fully effective at an early age. Such research can also *measure* the relative effectiveness of verbal signals as compared to the directive role of immediate, visual signals. In order to make this comparison as vivid as possible, we pass on to some experiments with somewhat older children—aged from 1.4 to 1.6 on the one hand, and from 1.8 to 2.0, on the other hand.

Let us first establish how effective the orienting and directive role of a visual signal and its trace can be at this stage. We place before a child two inverted objects, a cup and a tumbler of non-transparent plastic. As the child watches, we hide a coin under the cup, which is placed to the left, and we ask the child to "find" it. For a child of 1.4 to 1.6, this constitutes an interesting and meaningful task, which he solves without difficulty. We repeat this experiment three or four times, each time holding the coin under the cup within sight of the child. The solution will invariably be successful. Now, without interrupting the experiment, we change its conditions and hide the coin not under the cup on the left, but under the tumbler on the

† In a number of cases such an experiment may not give the desired results. This happens when the dominant role in the child's behavior continues to be played by the *immediate orientational response to objects*. In such cases the child will alternately hand the experimenter now this object, now the other, and the directive function of speech will fail to be exercised from the start.

right. A certain proportion of children of the younger group will follow not the changed visual signal (more precisely, its trace), but the *influence of the inert motor stereotype*, and will put out their hands toward the cup on the left, carrying out the habitual movement reinforced in the previous experiment; only then will they turn to the tumbler under which the coin is hidden.

Let us now weaken the influence of the visual signal. We repeat the first experiment, but impose a short, 10-second delay between the hiding of the coin under the cup and the execution of the movement. This forces the child to act according to the *traces* of the visual signal whose effectiveness we are considering. The majority of children in the younger group successfully execute this task; only a few, the very youngest, cease to subordinate their actions to the visual instruction and begin to grasp both objects, losing track of the task of finding the coin that is hidden under one of them.

However, we again modify the conditions and after repeating the experiment three or four times with the cup and the 10-second delay we hide the coin under the tumbler located on the right, all within sight of the child. The picture now changes substantially. The ten-second delay turns out to be sufficient for the visual signal to yield its place to the decisive influence of the reinforced motor habit. The overwhelming majority of children now repeat the movement directed toward the cup on the left, ceasing to be directed by the image of the coin hidden under the tumbler on the right.

This orienting, directive influence of the visual signal is maintained better among children of the older group (1.8 to 2.0). Even when the execution of the movement is delayed, they solve the task well, directing their search to the object under which they saw the coin being hidden. This means that the orienting, directive role of the visual image becomes so effective at the end of the second year of life that the child submits to it completely, and successfully overcomes the inertia of the motor connections which have arisen.

A completely different picture appears in those cases where we replace the immediate, visual signals by verbal ones. For this purpose we again place before the child the two above-mentioned objects, a cup and a tumbler, but this time unseen by the child, we slip the coin under the left-hand cup. In order to orient, i.e. to direct the actions of the child, we now draw upon a word rather than a visual image. We tell the child: "The coin is under the cup . . . Find the coin!" This instruction attunes the child completely and the game continues, but its results turn out to be profoundly different. While the trace of an immediate visual impression caused all children of the younger group to reach with assurance for the cup under which they saw the coin being hidden, the verbal instruction turns out to be wholly insufficient for this directive role: a considerable proportion of the children of this age lose track of the task and begin to grasp *both* objects before them. When we

repeated the experiment with a ten-second delay in the execution of the action, this loss of directed activity among the children of the younger group was almost universal.

We then returned to the experiments with the immediate (non-delayed) execution of the action. When we reinforced the required reaction by repeating the instructions several times, "The coin is under the cup . . . Find the coin!", the children of the younger group turned out to be capable of executing it in an organized way: the word achieved the required directive function, and the children reached for the object named. However, if we altered the verbal instruction and, without changing the intonation, said, "Now the coin is under the tumbler . . . Find it!", only an insignificant proportion of the children changed their movements, while the great majority repeated their previous movement. When a ten-second delay was imposed on the execution of the task, all the children of the younger group failed to let their action follow the changed verbal instruction; they continued to execute the stereotyped movement that had been reinforced in the previous experiment and, as before, turned to the cup on the left.

The children of the older group (1.8 to 2 years), who solved these tasks with uniform success when the directive role was played by a visual signal (in experiments with delayed as well as with immediate execution), turned out to lag behind when they had to execute the task according to verbal instructions. They did carry out both tasks well if they were allowed to make the necessary movement immediately; then they would turn to the cup after the instruction "The coin is under the cup . . . Find the coin!" and to the tumbler if the instruction was "The coin is under the tumbler . . . Find the coin!" However, it was enough to delay the execution of the instructions by ten seconds for this orienting, directive role of the verbal instruction to be insufficiently effective. After three repetitions of the experiment with the instruction "The coin is under the cup . . . Find the coin!" the transition to another command—"The coin is under the tumbler . . . Find the coin!"—deprived the verbal instruction of its directive role, and the child continued inertly to execute the former habitual movement. In these cases the kinesthetic stereotype which had been worked out earlier overcame the insufficiently established effect of the word.

A comparative analysis of the orienting or directive functions of visual and verbal signals allows us to see how late the directive role of the word is formed in early childhood.

III

While the directive function of straightforward, "deictic" speech is already formed around the age of 2, the kind of speech that involves more complicated preliminary connections—connections which precede the action and organize it in advance—acquires a regulative function considerably

later, and its development occupies the entire third and partly the fourth year of life.

This time let us turn to a child with a more complicated, involved instruction. "When the light flashes, you will press the ball (rubber bulb)" or ". . . you will raise your hand." Such a verbal instruction, formulated this time in a syntactically complex, "conditional" *sentence*, does not require any immediate realization of an action. It must close a preliminary verbal connection, giving to the appearance of a stimulus ("light") a conditional meaning of the signal for action ("you will press the ball"). The directive role is played here not by a separate word, but by a relation, a synthesis of words entering into a sentence; instead of an immediate, "triggering" role it acquires a preliminary, conditional, "pre-triggering" function.

It has been shown experimentally (Jakovleva 1958, Tikhomirov 1958) that the possibility of establishing such a pre-triggering system of connections on the basis of speech—not to speak of the possibility of subordinating further conditional reactions to it—is something unattainable for a child of 2 to 2½ years, and sometimes even for a 3-year old child.

The younger children of this group (1·10 to 2 years) appear unable to realize that synthesis of separate elements which is required by the instruction formulated in the sentence. Each individual word contained in the sentence evokes in the child an immediate orienting reaction, and as soon as he hears the beginning of the sentence, "When the light flashes . . .," the child begins to look for the light with its eyes; when he hears the end of the sentence—" . . . you will press the ball"—he immediately presses the device in his hand. At this stage the separate words have already acquired an effective triggering function, but the creation, by means of words, of preliminary pre-triggering system of connections, which requires the inhibition of immediate reactions and their separation into individual fragments, turns out to be unattainable. This is why the actual presentation of a light signal—the flash of light—does not at this stage lead to a conditioned movement, and evokes only an immediate orienting reaction: the child begins simply to inspect the light, which has not yet become for him a conditional signal for the pressing of the ball.

It would, however, be incorrect to believe that the formation of this more complex form of directive speech—formulation of a preliminary program of actions—depends entirely on the ability to relate words which comprise a sentence, i.e. to do the work of synthesizing the elements of a sentence into a single system. Even when a child, some time later, is able to do this synthesizing work and begins to "understand" the meaning of the whole sentence well, the effective directive role of the sentence can still remain absent for a long time.

Let us aduce the experiments which demonstrate this interesting fact.

We present a child at the end of the third year of his life (2·8 to 2·10) with an instruction of this kind, and we see a picture which differs basically

from the one that we have just described. A child at this age will as a rule make the required connection without particular difficulty, and when the light flashes he will press the ball; however, he will be unable to stop the movements which have been triggered by speech and he will very soon begin to press the ball regardless of the signal, continuing involuntarily to repeat the previous movements. Even the repetition of the instruction or the reinforcement of the inhibitory link which is hidden in it—even the request to “Press *only* when the light flashes” and “*Not to press* when there is no light”—all this turns out to be powerless to stop the motor excitation that has begun; on the contrary, this excitation is sometimes even *reinforced* by the inhibitory instruction, which in the given case turns out still to lack its inhibitory meaning and continues to act *non-specifically*, only strengthening the dominant motor response.

While speech at this time has already acquired an effective connection-closing triggering function, it has thus not yet acquired an effective inhibitory role.

This weakness of the inhibitory function of speech, as was shown by the observations of Tikhomirov (1958), can be seen most vividly by means of special experiments. Let us complicate the instruction described above and present it to a child of 3 to 3½ years. We will ask it to *press* the ball every time a *red* light goes on, and *not to press it* when a *blue* light goes on; in other words, we will place the child in circumstances in which speech requires a complex *selective* reaction—positive with respect to one signal (red) and inhibitory with respect to another (blue). We let the child repeat the instruction and we are persuaded that all the information included in the sentence has reached him and is retained. Does this mean that it also possesses an effective directive role?

The experiment shows that this practical correspondence between the semantic meaning of the sentence and its directive role does not appear for a long time. Having understood the meaning of the instruction and repeating it correctly, the child is practically unable to execute it: the excitation provoked by the signal turns out to be so considerable and diffuse that after only a few attempts the blue signal, too, begins to evoke in the child impulsive motor responses. At first he attempts to control them but later, as his excitement grows while the directive function of the inhibitory verbal instruction weakens, he begins to perform the movements without any restraint.

In clashing with the inert excitation evoked by a positive signal, the inhibitory link in the verbal instruction is crushed. At first the child retains the entire instruction, but though he repeats it correctly, he is nevertheless unable to subordinate his actions to it. It is not uncommon for the inert excitation evoked by the positive part of the instruction to become so overwhelming that, under the influence of his own impulsive reaction, the child loses the inhibitory link contained in the verbal signal and begins to assure

the experimenter that the instruction required him to press the ball in response to both signals presented to him.

Thus the insufficient mobility of the child's neurodynamics at first destroys the directive role of the verbal instruction, and later distorts the entire system of links contained in it.

IV

The question now arises: Can we reinforce the regulating function of verbal program, and if so, how can this be done most effectively? The solution of this question may bring us closer to the description of certain mechanisms of the directive function of speech.

The experiments carried out by Paramonova (1956) showed that there are very simple means for heightening the directive influence of speech when the effect of the traces of a verbal instruction turn out to be insufficient.

Let us carry out an experiment of the kind already described with a 3-year old child. We ask him to press a ball in response to every *red* signal and to refrain from pressing it in response to every *blue* one. We introduce only one change into this experiment: we accompany each flash of the red light with the direct command "Press!" and every flash of the blue lamp with a similar command, "Don't press!" If such plainly directed speech is introduced, it allows the child quickly to work out a fairly effective system of selective reactions. What could not be attained through *preliminary* connections evoked by a verbal instruction turns out to be easily attainable if we draw upon the *immediate* influence of verbal commands. In direct speech, the directive function has been fairly effectively established; its influence is therefore capable of concentrating the course of nervous processes and of producing a differentiated habit.

In the experiments just described we drew upon the directive function of verbal commands in order to make more precise the influence of verbal instructions and to secure the organized course of the child's motor responses. Could we not, however, for this purpose draw upon the *child's own speech* and have it support the traces of the verbal instruction, which weaken relatively fast? After all, as L. S. Vygotski has already shown, the function which at first is distributed between two people can easily turn into an internal psychological system, and what a child today does with help, he will tomorrow be able to do on his own. The investigation of the *directive possibilities of the child's own speech* can uncover a new and essential side of his linguistic development.

We repeat the experiment described, but introduce some substantial changes. In order to make it easier for the child to carry out his task correctly, we ask him *to give himself supplementary verbal commands*, accompanying each appearance of a red signal with the word "Press!", and the appearance of each blue signal with the words "Don't press!" Will this utilization of the child's own commands reinforce the action of the verbal instruction and strengthen its directive role?

The experiment shows that it is not so simple to obtain a directive influence from the child's own speech, and that over the first years of life the directive role of the child's own speech undergoes a complex course of development.

Let us begin with children of 2 to 2½ years and simplify our experiment for this purpose. We ask the child to respond to each flash of the red light by pressing the ball; but in order to remove those excessive movements which, as we have indicated above, are not subject to the control of an inhibitory instruction, we ask the child to accompany each motor reaction with the word "Press!" (or even with something easier to pronounce, such as "Now!", to which we assign the meaning of a self-command). The experiments of S. V. Jakovleva (1958) have shown that the active speech of a child at this age is so insufficiently developed, and the underlying neurodynamics so inert, that the child of 2 to 2½ years of age still finds difficulty in coordinating his verbal commands with the signal and frequently begins to utter excessive, stereotyped commands. It is significant that even if the child succeeds and begins to say "Press!" (or "Now!") only when the signal appears, his entire energy is diverted to the utterance of this word, and the motor reaction which is supposed to be associated with it becomes extinct. The child at this age cannot yet create a *system* of neural processes that includes both verbal and motor links, and the word does not play any directive role.

As O. K. Tikhomirov's experiments (1958) showed, it is only at 3 years of age that the neurodynamics which underlie the speech processes are sufficiently mobile for the child to time his own verbal command with the signal and for the command to exert a directive influence on the motor response as it becomes a mobile link in a unified system with it. While the child is unable to control his excessive, diffuse pressings of the ball according to the preliminary instruction, he easily achieves this control when he begins to give himself the commands "Press!" and "Don't press!" In concentrating the diffuse excitation, the child's own verbal responses, functioning on a feedback principle, here acquire their directive function.

However, is this directive function of the child's own speech fullfledged? Control experiments have answered this question in the negative and have permitted us to see more deeply into the mechanisms of the early forms of the directive function of speech.

Let us return again to the more complicated experiment described above. We present a child of 3 to 3½ years with the instruction to press a ball every time a red light flashes and to refrain from pressing it when there is a blue flash, but we give him the possibility of accompanying each red signal with his affirmative command "Press!" and every blue signal with his own inhibitory command, "Don't press!" Does the directive role of the child's *inhibitory* verbal response have the same, full value as his *positive* verbal response?

The experiments which have been conducted for this purpose have disclosed some very substantial peculiarities of the regulating effect of the child's own speech. The verbal responses "Press" and "Don't Press" turn out to have a complex structure. Physiologically they are, first of all, motor responses of the speech apparatus and are thus always connected with the positive phase of an innervation. But in virtue of their *meanings* they are systems of connections which, in the former case, have a positive, and in the latter case, an inhibitory signal value. Which side of the child's own speech—the motor ("impulsive") or semantic ("selective") side— here influences the motor processes and acquires the directive role?

The experiments of O. K. Tikhomirov yield an answer to this question. A child of 3 to 3½ years easily responds to each light signal with the required word, but in uttering the command "Don't press" in response to the blue signal, he not only fails to restrain his motor responses, but *presses the ball even harder*. Consequently, the child's own verbal reaction "Don't press" exerts its influence not in its semantic aspects, i.e. not by the selective connections which are behind it, but by its immediate "impulsive" impact. This is why the directive influence of a child's own speech at this stage still has a non-selective, non-specific character.

At least one more year must pass before the directive role goes over to the selective system of semantic connections which are behind the word, and—as Tikhomirov has observed—it is only at the age of 4 to 4½ years that the verbal response "Don't press" actually acquires the inhibitory effect specific to speech.

However, for this stage of development one circumstance is typical: as soon as the directive role passes to the semantic aspect of speech and that aspect becomes dominant, external speech becomes superfluous. The directive role is taken over by those inner connections which lie behind the word, and they now begin to display their selective effect in directing the further motor responses of the child.

The development of the pragmatic, directive aspect of speech constitutes a new chapter in psychology and psycholinguistic. It still has almost no facts to operate with that are derived from systematic investigation. However, by establishing the fact that by no means all the information carried by speech *ipso facto* acquires a directive value in determining human behavior, and by investigating the formation patterns of this directive role of speech, this chapter has already opened important new vistas for the scientific investigation of the organization of human behavior.

PART II: DISSOLUTION OF THE REGULATIVE FUNCTION OF SPEECH IN PATHOLOGY OF THE BRAIN

I

Since Hughlings Jackson, almost one hundred years ago, first called attention to the problem of the "dissolution" of speech, the pathology of

speech processes has occupied an important place in clinical and psycholinguistic research. However, while the study of disturbances of the phonetic, morphological, syntactic, and semantic aspects of speech is reflected in many hundreds of publications dealing with the problems of aphasia,† the disturbance of the pragmatic or directive function of speech in pathological states of the brain has hardly been the object of investigation. Nevertheless, the study of such disturbances deserves to occupy a leading place in the effort to understand the "dissolution" of mental activity in pathological conditions.

In order that the system of connections that arises on the basis of speech efficiently determine further activity, it is not enough that the information carried by speech reach the subject. A number of further conditions must be fulfilled; important among them is the maintenance of the strength, the equilibrium, and the mobility of the neural processes which determine the flow of higher neural activity.

If one of these conditions is disturbed, the directive function of speech connections may suffer substantially. The system of connections which has arisen on the basis of speech may either become pathologically weakened, so that its directive influence is rapidly extinguished; or it may become pathologically inert, so that the switch to a new system of connections, replacing the previous ones, is impossible; or, finally, a change in the equilibrium of stimulating and inhibiting processes, which so commonly arises in pathological states of the brain, can actually cause the directive influence of speech connections to become sharply handicapped. Can we forget those patients with a distinctly expressed neurosis in whom the conservation of information received through speech does not guarantee the conservation of that organized, "voluntary" character of behavior which is typical of normals? Consequently we have every reason to expect that pathological states of the brain which are accompanied by a disturbance in the strength of neural processes, their equilibrium, and their mobility, will produce conditions which will be patently reflected not only in the significance and communicative aspects of speech, but also in the realization of its directive function.

But there is still more significant reason for investigating speech disturbances caused by brain pathology. Everything we know about the complex structure of the human cerebrum warrants the belief that the relation between all the aforementioned aspects of speech activity—semantic, syntactic, and pragmatic (directive)—is preserved in unequal measure in different forms of brain pathology, and we expect that the disturbances of the process of analysis of information carried by speech and of the realization of its directive influence will not always proceed in parallel. In other words, we may expect that pathological states of the brain may bring about a

† We have dwelt on these problems in detail elsewhere; cf. Luria (1947, 1958c, 1966a, 1966b). References are fully identified at the end of this article.

disturbance of *different links of that chain of processes* which enable man to obtain an adequate picture of his environment and correctly to regulate his mental activity. Hence an analysis of the changes in speech connections under pathological conditions of the brain will reveal to us new possibilities for investigating the structure and the dynamics of the directive function of speech, with which we are now concerned.

Let us pass on to the relevant facts.

II

We begin our analysis with those cases in which the directive influence of speech appears to be blocked in its executive link so that the information, which reaches the patient fully, seems to be completely incapable of determining his subsequent activity, but in which certain circumstances may completely eliminate this defect.

Over thirty years ago we had occasion to carry out a series of experiments on patients affected by Parkinson's disease.† In these cases, lesions in the subcortical motor centers soon make it impossible to evoke voluntary movement by verbal instructions. The injured subcortical apparatus excites repeated tonic responses, and the pathologically perseverating tension of all muscles is an obstacle to the execution of the instruction. It is easy to imagine such a difficulty in carrying out a voluntary movement if one briefly tenses all the muscles of one hand and then tries to move it without relaxing the tension.

However, the difference in the cases of Parkinsonism lies in the fact that the cortical motor apparatus remains fully intact. Consequently, if the center of gravity of the motor act is shifted to *cortical mechanisms* and the influence of subcortical components is thus removed, or at least diminished, it is again possible for the patient to execute the movement. And it is for this reason that a patient with Parkinson's syndrome who is unable to execute extended automatic movement dependent on subcortical mechanisms, easily carries out movements in response to external conventional signals which are effected at the cortical level.

This can be demonstrated by means of a simple experiment. A patient is asked to beat a simple rhythm with his finger. After 20 to 30 seconds his movements will begin to be extinguished, the general tension of the muscles will rise sharply, and the movement will stop. The patient is then asked to beat his finger in response to the verbal signals, "Now! Now!" This task, which is dependent on the cortical level of regulation, is completely accessible to him, and the movement can be continued for some time. Next, the patient's movement is tied even more closely to his speech system by attaching a symbolic function to his movements. He is asked to

† The data of these experiments were first published in our book, *The Nature of Human Conflicts* (Luria, 1932).

reply to the experimenter's questions by beating out the necessary numbers with his finger. If we then ask him, "How many wheels on a car?" or "How many points on a compass?" we see that the same patient who had failed in the previous experiment and could not automatically strike the table with his fingers even two or three times, easily begins to do so, switching his movements into his speech system and subordinating them to the complex dynamic constellation of cortical connections.

It is hardly necessary to emphasize how distinctively the preserved directive function of speech connections is thus brought out. This function overcomes the inertia of neural processes which arose as a result of injury to the subcortical motor apparatus.

The discovery of this phenomenon served as the beginning of a whole series of investigations concerning the functional compensation for defects arising from brain injuries.† But the experiment may not seem convincing enough. After all, it may be objected, the lesion is here restricted to *subcortical* connections, while the cortex is completely intact. Can the directive function of speech be maintained in cases where the *cortex itself* is in a pathological state?

This question is answered by a series of experiments conducted by E. D. Homsakaja (1956, 1958*b*), nearly thirty years after the above-mentioned observations had been made.

The cerebro-asthenic syndrome is clinically well known. After an infectious illness or a trauma to the brain, the cortex frequently passes into a pathological state characterized by stimulatory weakness. The strength of neural processes appears to be weakened, and the equilibrium of the basic neural processes is affected. Particularly severe is the impairment of the most complex processes of active inhibition; every frustration, no matter how small, is manifested in the diffusion of an excited, irritated state. Educators in children's clinics and in special schools are familiar with children who react with excitement to every difficulty and are unable to refrain from excessive agitated movements even when the teacher asks them to control themselves.

What has been said is enough to warrant the assumption that in these children the directive function of speech traces is impaired; the information of the prohibitory command of the teacher is fully perceived by them, but it does not achieve the required effect.

Let us follow this weakening of the directive function of speech traces in special experiments. A cerebro-asthenic child, seated before a signal device, is given a rubber bulb and is asked to press the bulb at every flash of a *red* light and to refrain from pressing it at every flash of a *blue* light. If these signals are presented slowly, with relatively substantial intervals between them, the child of 9 to 12 years can carry out the task without difficulty and without error. However, if the signals are made shorter and

† Luria, *Restoration of Functions after Brain Injury*. Pergamon Press, 1963.

the intervals between them are reduced so that the flashes come at a rapid pace, the situation changes radically. Then the child, though he remembers well what he is supposed to do, turns out to be incapable of carrying out his task, and in response to the rapidly presented blue (inhibitory) signal he impulsively presses the bulb, often accompanying these excessive pressings with a delayed reaction, "Oops!" or with the exclamation, "Wrong again! . . ." The inhibitory processes in the cortex of such a child are so weak, and the excitatory ones so easily diffused, that the traces of the verbal instruction cannot overcome the pathological state of the child's neurodynamics and adequately direct his behavior. Consequently, the directive function of the verbal traces is substantially impaired in such children.

But can we not strengthen this directive function in some way and thus compensate for the defects of the child's neurodynamics?

Let us return to the experiments which we have already described, tracing the evolution of the directive function of speech. We replace the motor response to the red signal by a verbal response, "(Press) now!" and we ask the child to reply to every blue (inhibitory) signal with the words "Don't (press)!"

The verbal responses of a child with the cerebro-asthenic syndrome suffer from the impairment of his neurodynamics considerably less than do his motor processes. Therefore a child who responds with many impulsive movements is able to avoid giving incorrect, impulsive, *verbal* responses completely. Could we not utilize this fact in order to compensate the defects of his motor processes by means of his own speech?

For this purpose, the motor and verbal responses of the child may be united. The child is asked, at the appearance of every *red* flash, to say "Press!" and to press the bulb, but at the appearance of every *blue* flash to say "Don't!" and to refrain from pressing it. These experiments, conducted by E. D. Homskaja, showed to what degree the *immediate* directive influence of loud speech is intact in these children. When the verbal and motor responses were unified, it became evident that *the child's own verbal commands were directing his motor responses*, and in these "unified" experiments the impulsive motor reactions to inhibitory signals disappeared almost completely. The directive function was here characteristically played not by the innervation of the verbal reaction itself, but by that system of selective connections which stand behind the word. When Homskaja replaced the child's own selective commands, "Press!" and "Don't press!", by monotonous repetition of "I see! I see!" at the appearance of every signal, no directive influence of speech on the flow of motor reaction was obtained. The external speech activity of the child, intact in its neurodynamic peculiarities and in its complex semantic structure, retained its directive function as well, and it was this circumstance that made it possible to draw upon the child's own speech as a means of compensating for the defects in its behavior.

III

But there are also cases of pathological brain states in which a massive impairment of neurodynamic processes affects the speech system as well, and the directive role of speech then becomes deeply impaired. The strength, equilibrium, and particularly the mobility of neural processes in these cases turn out to be pathologically altered to such an extent that the normal flow of the speech processes themselves, and the normal organization of the connections which are based on them, are profoundly disturbed.

One set of instances can be found in connection with oligophrenia. The form of deep mental retardation bearing this label develops as a rule after inflammation, intoxication, or trauma affecting the child's brain even at the fetal stage, at the time of birth, or in very early childhood.

The profound retardation of such children is manifested in the entire organization of their complex neural activity, but as was shown in special investigations (Lubovskij, 1956; Meščerjakov, 1956, 1958; Pevzner, 1956; and others), the damage is greatest in those forms of neural organization which are the basis of speech activity or which are achieved by means of speech.

These children form complex temporary connections with difficulty, and find it especially hard to carry out those operations of abstraction and generalization which are accomplished by means of speech. Consequently the information which reaches them is greatly reduced, and its organization is simplified. A newly established connection is easily destroyed under the influence of external agents (or "noise"). However, if a system of connections does become consolidated, it becomes pathologically inert and almost incapable of being restricted (Luria, 1956*c*, 1958*b*; Pevzner, 1956). It is particularly characteristic of these children that the dynamics of neural processes underlying speech activity are in their case impaired not less, but more than the dynamics of neural processes which are materialized in simpler sensori-motor reactions.

Can speech, under these circumstances, retain that directive function on which we drew when we wanted to compensate for the functional defects of children with cerebro-asthenic syndromes? Experiments have answered this question in the negative.

A child with oligophrenia is subjected to the experiment previously carried out to demonstrate the intactness of the directive function of speech in cerebro-asthenic children, but under somewhat modified circumstances. An oligophrenic child aged ten to twelve with a profound form of mental retardation is asked to press a bulb in response to a *red* flash and to refrain from pressing it in response to a *blue* flash. After the habit, following a certain amount of drill (of course, with the signals being slowly presented), is sufficiently well established, we try to restructure it. This time the child is asked to change the previous condition and to respond to every *blue*

signal by a motor reaction, but to refrain from any movement at a *red* signal.

Experiments have shown (Lubovskij, 1956, *et al.*) that this task, so simple for a normal child (or even for the cerebro-asthenic children described above), is often beyond the powers of a child with severe oligophrenia. At first he correctly follows the new verbal instruction, but he retains it only for a short time, and if the experiment is interrupted by a brief pause or if some sharp extraneous signal is introduced, the directive influence of the new instruction is destroyed and the child begins inertly to carry out the old system of connections, pressing at *red* flashes and refraining from pressing at *blue* flashes.

Can we draw on the child's own speech in order to overcome this pathological inertia in the way we utilized it with cerebro-asthenics? All attempts to resort to the oligophrenic child's own speech reactions have resulted in failure.

In the experiments of Lubovskij (1956), Homskaja (1956), and Marcinovskaja (1958), a child was asked to replace his motor reactions by verbal ones, replying, according to the changed verbal instructions, "Don't press!" to every *red* signal and "Press!" to every *blue* one. While the child with the cerebro-asthenic syndrome had found no difficulty in such a restructuring of verbal responses, a child with profound oligophrenia often stumbled over this task. Having learned, in the first experiment, correctly to answer "Press!" to a *red* signal, and "Don't press!" to a *blue* one, these children were unable to restructure their verbal responses afresh and obstinately retained the old pattern even under the new conditions.

The inertia of neural processes which is typical of the speech activity of these children, also produces additional difficulties. Having begun to say "Press!" and "Don't press!", our subjects would continue inertly to repeat the alternation of these two verbal responses, regardless of the signals presented to them. Here meaningful speech was replaced by a mechanical stereotype, and its complex functions had decayed.

To the question whether such inert speech, which easily turns into a mechanical stereotype, can play a directive role, experiments have also given a negative answer. A child with profound oligophrenia is handed a bulb and is asked, in unifying his motor and verbal reactions, to respond to every *blue* signal by "Press!" and at the same time to press a bulb, but at a *red* flash to say "Don't press!" and to refrain from pressing the bulb.

Marcinovskaja's observations (1958) have shown that many severe oligophrenes find this task completely unattainable. While they respond to the signal verbally, they completely cease to press the bulb; or else, reacting by a movement, they cease to respond verbally. Even if the co-ordination of speech and movement is possible for such a child, his stunted, inert speech is still unable to play a directive role. Accompanying his movements by

inert verbal reactions which easily get stuck and lose their meaning, the child, instead of improving, worsens his motor reactions.

It is evident that the directive function of speech is deeply impaired in these cases.

It is interesting that in the experiments with oligophrenia, speech turns out to be dynamically affected even in its contentive, meaningful function. When, for example, in Meščerjakov's experiments (1958) an oligophrene was asked to define the meaning of words presented to him by the labels "living" and "non-living" he did this only for a relatively short time, and as soon as the experimenter twice repeated the alternation of these terms ("living—not living, living—not living"), the child's further effort at classifying the named objects decayed into an inertly alternating repetition of these two responses. The profound impairment of the dynamics of neural processes—and particularly of their mobility—deprives the word of its signficative as well as of its directive role.

It is apparent how different this form of brain pathology is from that described above and how profoundly the speech processes may suffer when their neurodynamics basis is affected.

IV

The two illustrations just adduced have shown that pathological states of the brain may bring about an impairment of the verbal system of connections in various of its links, and that while in some cases the directive function of speech may remain relatively intact, in others it is grossly affected.

In both illustrations presented so far we were dealing with the general disturbance of cortical function—though unequal, to be sure, in type and extent.

But might we not take one further step and attempt to discover whether the several divisions and zones of the cortex have a differential connection with the directive role of speech process? May we not expect that injury to some parts of the cortex might produce a substantial impairment in the reception of information carried by speech, while the injury to other sectors will affect the speech process in other links, leaving the reception of speech messages relatively intact, but causing a disturbance of its directive function? Every discovery in this domain would be significant for the further analysis of the structure of speech processes and for the investigation of their underlying cerebral mechanisms.

Elsewhere (Luria, 1947, 1966) we have already discussed the fact that a lesion of limited areas of the cortex may cause the subject to be incapable of controlling the phonetic, lexical, and logical-grammatical code of his language. The role played in this process by the temporal regions of the cortex, with their function of auditory analysis, and the parieto-occipital region of the cortex, which makes it possible to realize simultaneous syntheses (basically spatial ones), is well known.

Do all these lesions at the same time produce an impairment of the directive function of speech, or can we find cases in which the phonetic, lexical, and logical grammatical structure of speech is preserved while its directive role is impaired?

We are still at the very beginning of this investigation, but the facts obtained so far already suggest a basis for an answer to this question.

Lesions in those sections of the cortex which reflect and elaborate exteroceptive information or, to use a label of I. P. Pavlov's the cortical sections of the analyzers of the external world, inevitably produce an impairment in the perception of whole visual-spatial or auditory structures and make far more difficult the deciphering of those complex phonetic, lexical, and sometimes even logical-grammatical codes on which human speech is based. However, while they affect the phasic or sematic aspects of speech, they do not necessarily disturb its directive role.

We have had the opportunity to observe many scores of patients whose analysis and synthesis of visual images was disturbed, who recognized visually presented complex objects with difficulty, and for whom visual information was so reduced that they could simultaneously perceive only one visual unit. However, they carried out a process of organized search, pursuing individual fragments, directing their activity to the task which had been verbally formulated for them—and, collecting the pieces of visual information thus obtained into a system of meaningful connections secured by speech, they compensated for the defects of their receptor apparatus.†

We have had the opportunity, too, to observe numerous cases in which the impairment of the analysis and synthesis of the phonemic structure of language resulting from lesions in the temporal regions of the cortex, deprives the patient of his ability to perceive speech addressed to him, but by shifting to an analysis of speech sounds with the support of a visually perceived oral image, the patients were able to perform this task and to compensate for their defects to a certain extent.

We have observed a great number of cases in which, as a result of lesions in the parieto-temporal cortex the patient was unable to synthesize the signals into one structural whole and to grasp complex logical-grammatical constructions; but such patients successfully replaced their impaired simultaneous synthesis by consistent consecutive syntheses of separate elements of information being put in. With the support of auxiliary means, such patients effected the reception of this information by other, roundabout ways.

In all these cases‡ the impairment connected with the input of information was successfully compensated for by the intact state of more com-

† A case of this type is analyzed in detail in our article on the mechanisms of visual perception in persons with lesion in the occipito-parietal areas of the brain, cf. Lurial, A. R., Disorders of Simultaneous Perception in a case of Bilateral Occipito-parietal Brain Injury, *Brain*, vol. 82, Chap. III (437-449).

‡ Analyzed in detail in Luria (1947, 1948).

plex and higher levels. It is enough to see the perseverance with which patients of this type carry out their tasks and work on themselves, to realize that the directive function of those neural connections which have arisen on the basis of speech is preserved in them.

Analogous facts could be observed in those patients who had lesions in the regions of the cortex related to effector processes, i.e. to the output of speech.

We have had numerous occasions to observe patients in whom lesions in the premotor zone of the cortex produced complete inability to form a well automatized motor habit, and who, for example, were unable to beat out a rhythm such as — · · · — · · ·. However, if we added speech to the implementation of this task and asked the patient to dictate to himself, "One, two—one, two, three" or to say to himself, "Strong, strong, weak, weak, weak," or even to give himself auxiliary symbolic support by means of speech (one such patient imagined a row consisting of two large cannon and three small machine guns), the task, based on the system of directive connections arising on the basis of speech, was successfully achieved.†

In all these cases, lesions in specific areas of the brain bring about a noticeable impairment in the analysis and synthesis of visual, auditory, or proprioceptive signals, and sometimes cause severe defects in the decoding of speech, but they do not affect the directive function of speech.

There arises the question as to whether there are also opposite cases, in which the external organization of speech codes remains intact while the directive function of speech is affected. This problem was thoroughly analyzed in our laboratory. Despite the fact that these investigations are still in their infancy, there are already enough facts at our disposal to suggest that this type of dissociation is indeed possible.

According to the investigations of N. A. Filippyčeva (1952), B. G. Spirin (1951), A. I. Meščerjakov (1953), M. P. Ivanova (1953), and others, this type of impairment in the directive function of speech may occur when there are extensive lesions in the frontal zone of the cortex.

In experiments resembling those to which we have repeatedly referred, a patient with massive injuries to the frontal lobe is asked to press a rubber bulb in response to every *red* flash and to refrain from pressing it in response to every *green* flash. (In a variant experiment by E. D. Homskaja—A. R. Luria and E. D. Homskaja, 1966—the instruction called for *strong* pressure on red signals and *weak* pressure on blue signals.) It was apparent that this is a task of great difficulty. The inertia of excitations in the motor analyzer is so severe that movements, as soon as they are established, turn into stereotypes, and the patient begins alternately to press and to refrain from pressing—or to press the bulb with equal force—although he remains perfectly aware of the verbal instruction. The influence of connections set up by this

† See also Luria (1948).

verbal instruction turns out in their case to be too weak to counterbalance the stagnant processes in the cerebral apparatus that produces movements; the directive role of the connections is easily extinguished.

It is important to note that, as Homskaja showed, the inclusion of the patient's own active speech, so effective in the case of cerebral asthenia, is not only futile for the frontal patients, but occasionally even aggravates their performance. The speech of such a patient, falling under the influence of a pathological inertia and linked to his motor behavior with inadequate effectiveness, easily loses its directive function and is unable to compensate for the behavioral gaps (A. R. Luria, 1966*a*; A. R. Luria and E. D. Homskaja, 1966).

It is for these reasons that the recovery of function is so difficult for patients with massive frontal-lobe injuries, and it is for this reason, too, that frontal-lobe lesions cause damage to the structure of human behavior which is so profound and so hard to reverse.

This concludes our survey of the facts at our disposal that bear on that "dissolution" of speech of which Hughlings Jackson spoke and on the disturbance of its directive function, which interested us in particular. The analysis of the manner in which this important aspect of speech processes is formed and disturbed is still at its very beginning. However, there is already no doubt that the study of the directive function of speech in its development and dissolution represents an important chapter in psychology and psycholinguistics, and that further work in this field will contribute many new facts concerning the laws governing the workings of human speech.

REFERENCES

- FILIPPYČEVA, N. A. (1952) *Inertnost' vysšykh korkovykh processov pri lokal'nykh poraženijakh bol'sykh polušarij mozga* [The Inertia of Higher Cortical Processes in Local Lesions of the Major Hemispheres of the Brain]. Dissertation, U.S.S.R. Academy of Medical Sciences, Moscow.
- HOMSKAJA, E. D. (1956*a*) "On the Problem of the Role of Speech in the Compensation of Motor Reactions" (in Russian), in LURIA (1956*c*), pp. 284-309.
- HOMSKAJA, E. D. (1956*b*) "On the Pathology of the Interaction of Signal Systems in Mentally Retarded Children" (in Russian), *ibid.*, pp. 310-316.
- HOMSKAJA, E. D. (1958*a*) "An Investigation of the Influence of Speech Responses on Motor Responses in Children with Cerebroasthenia" (in Russian), *ibid.*, pp. 131-259.
- HOMSKAJA, E. D. (1958*b*) "An Investigation of Verbal Reactions to Motor Ones in Children With Cerebro-Asthenia" (in Russian), in LURIA (1958*b*), pp. 131-249.
- IVANOVA, M. P. (1953) *Narušenie vzaimodejstvija dvukh signal'nykh sistem v formirovanii složnykh dvigatel'nykh reakcij pri poraženijakh mozga* [Disturbances of the Interaction of the Two Signal Systems in the Formation of Complex Motor Reactions in Cases of Brain Lesions], Dissertation, Department of Psychology, Moscow University.

- JAKOVLEVA, S. V. (1958) "Conditions of Formation of the Simplest Types of Voluntary movement in Children of Pre-School Age" (in Russian), in LURIA (1958a), pp. 47-71.
- KOL'COVA, M. M. (1958) *O formirovanii vysšej nervnoj dejatel'nosti rebënka* [On the Formation of the Child's Higher Neural Activity]. Leningrad.
- LJUBLINSKAJA, A. A. (1955) *Rol' jazyka v umstvennom razvitii rebënka* [The Role of Language in the Mental Development of the Child] (= Leningradskij Pedagogičeskij Institut im. Gercena, *Učenyje zapiski*, vol. 112).
- LUBOVSKIJ, V. I. (1956) "Some Peculiarities of Higher Neural Activity of Normal and Abnormal Children" (in Russian), in LURIA (1956c), pp. 129-196.
- LURIA, A. R. (1932) *The Nature of Human Conflicts*. New York.
- LURIA, A. R. (1947) *Travmatičeskaja afazija* [Traumatic Aphasia]. Moscow. (English edition—Hague-Morton, 1966.)
- LURIA, A. R. (1948) *Vosstanovlenie funkcij mozga posle voennoj travmy* [Recovery of Brain Functions After War Trauma]. Moscow.
- LURIA, A. R. (1955) "The Role of the Word in the Formation of Temporary Connections in Man" (in Russian), *Voprosy psikhologii*, no. 1, pp. 73-86.
- LURIA, A. R. (1956a) "On the Directive Role of Speech in the Formation of Voluntary Movements" (in Russian), *Žurnal vysšej nervnoj dejatel'nosti*, vol. VI, no. 5, pp. 645-662.
- LURIA, A. R., ed. (1956b, 1958a) *Problemy vysšej dejatel'nosti rebënka* [Problems of the Higher Neural Activity of the Child], vols. I and II. Moscow.
- LURIA, A. R., ed. (1956c, 1958b) *Problemy vysšej nervnoj dejatel'nosti normal'nogo i anominal'nogo rebënka* [Problems of the Higher Neural Activity of the Normal and Abnormal Child], vols. I and II. Moscow.
- LURIA, A. R. (1958c) "Brain Disorders and Language Analysis," *Language and Speech* I, pp. 14-34.
- LURIA, A. R. (1961) *The Role of Speech in the Regulation of Normal and Abnormal Behaviour*. Pergamon Press.
- LURIA, A. R. (1963) *Restoration of Functions after Brain Injury*. Pergamon Press.
- LURIA, A. R. (1966a) *Higher Cortical Functions in Man*. New York, Basic Books.
- LURIA, A. R. (1966b) *Human Brain and Psychological Processes*. New York, Harper Raw.
- LURIA, A. R. and HOMSKAJA, E. D. (ed.) *Frontal Lobes and Regulation of Psychological Processes*. Moscow University Press (in Russian).
- LURIA, A. R., and F. IA. YUDOVICH (1958) *Reč' i razvitie psikičeskikh processov rebënka*. Moscow. English version: *Speech and the Development of Mental Processes in the Child*. London, 1959.
- MARCINOVSKAJA, E. N. (1958) "Disturbance of the Directive Role of Speech in Severely Retarded Children" (in Russian), in LURIA (1958b), pp. 267-295.
- MEŠČERJAKOV, A. I. (1953) *Narušenie vzaimodejstvija dvukh signal'nykh sistem v formirovanii prostykh dvigatel'nykh reakcij pri lokal'nykh poraženijakh mozga* [Disturbance of the Interaction of the Two Signal Systems in the Formation of Simple Motor Reactions in Cases of Brain Lesions], Dissertation, Department of Psychology, Moscow University.
- MEŠČERJAKOV, A. I. (1958) "The Mechanisms of Abstraction and Generalization Processes in Mentally Retarded Children" (in Russian), in LURIA (1958b), pp. 295-389.
- PARAMONOVA, N. P. (1956) "On the Formation of Interactions Between the Two Signal Systems in the Normal Child" (in Russian), in LURIA (1956b), pp. 18-83.
- PEVZNER, M. S. (1956) "Clinical Characterization of the Basic Variants of Defects in Oligophrenia" (in Russian), in LURIA (1956c), pp. 354-400.
- ROZENGARDT-PUPKO, T. L. (1948) *Reč' i razvitie vosprijatija v rannem detstve* [Speech and the Development of Perception in Early Childhood]. Moscow.

- SPIRIN, B. G. (1951) *Narušenie podvižnosti nervnykh processov posle operacij na golovnom mozgu* [Disturbance of the Mobility of Neural Processes Following Brain Surgery]. Dissertation, U.S.S.R. Academy of Medical Sciences, Moscow.
- TIKHOMIROV, O. K. (1958) "On the Formation of Voluntary Movements in Children of Pre-School Age" (in Russian), in LURIA (1958a), pp. 72-130.
- VYGOTSKI, L. S. (1934) *Myšlenie i reč* [Thought and Language]. Moscow.
- VYGOTSKI, L. S. (1956) *Izbrannye psikhologičeskie issledovanija* [Selected Psychological Studies]. Moscow.

CHAPTER 2

Psychogenic and Allied Disorders of Communication in Childhood

by L. STEIN AND S. E. MASON

THE EVOLUTION (INTEGRATION OF COMMUNICATION)

To arrive at an understanding of the structure of communication the authors wish to commit themselves to certain first principles.

The body and the mind are not regarded as two different substances mysteriously connected with each other (psycho-physical parallelism) but as two different modes of being or aspects of the same "substance" which owing to our human limitations we cannot perceive as such (Spinoza⁽¹⁾). This substance, the "body-mind" and all its functions has a structure; it is a whole, a system containing inter-acting dynamic elements arranged on time levels of integration. An instance is the development of the individual from infancy to adulthood. Structure has a teleological character in that the dynamic elements serve the purpose of the whole. Dynamic psychology assumes a number of basic needs and drives. Each of them has a particular task assigned to it, and strives for the fulfilment of it. Yet, though the completion of each task can be considered "good" (etymologically, "suitable"), conflict and guilt arise if and when two or more of the drives fight for superiority instead of collaborating for the sake of the whole.

The elements are assumed to be "theoretical entities" (Stein⁽²⁾), known in metaphysics as "things in themselves" and in psychology as innate patterns of behaviour and the images involved in them. These are *a priori* given. It is through them that we grasp the external world. Without, for instance, the inborn pattern of sucking and the image of the breast the infant's experience of the most basic and all pervading feeling-relationship is unthinkable. The actual experiences consist of data which, in contrast to the postulated entities, are *a posteriori* given. The theoretical entities are not derived from the data observed but are put there by the inquirer since otherwise the task or function could not be envisaged. Many case histories are of little use because the information is not communicated to other workers in terms of data. For instance, that the patient was anxious or that he stammered does not describe the situation nor the level on which the patient was operating.

The elements are arranged in pairs of opposites or polar correlates. Without this axiom the postulated dynamic entities have no meaning. In this "identical opposition or antithesis" Heraclitus⁽³⁾ saw the harmony of opposites. The idea of the body-mind, of man and woman, conscious and unconscious, aversion and attraction, me and not-me, are examples of such bipolar opposites.

Of the human beings so conceived it is said that they communicate. The word, derived from Latin *communicare* "to share, to have in common" tells us that without the assumption of the same primary agents residing in every creature, communication is unthinkable. Indeed, what has just been said about pairs of opposites underlies the idea of communication, being the transmission of meaning through a code, that is, a set of functional interdependent elements. These are partly genetically fixed, partly conventional, partly consciously and partly unconsciously motivated. In other words, the key to the code is partly known, partly unknown or secret. The postulate of opposites is reflected in Jakobson's (Jakobson⁽⁴⁾) linguistic theory of binary opposition, according to which the message entails sets of contrasting or mutually exclusive pairs of units, sounds or words.

The temporal aspect of structure entails that all communication involves patterns which can be found on earlier levels of development and evolution.† The meanings of these earlier patterns are often totally unconscious. The etymological structure of words often reveals their archaic meanings that survive in the unconscious (Stein⁽²⁾, pp. 74/75).

Closely related to the notion of strata is the concept of integration. Although our concept of the structural integration of speech and voice is psychodynamically orientated we find it convenient to elucidate the structure of the abnormal speaker by application of J. Hughlings Jackson's (Jackson⁽⁵⁾) theory of dissolution, which, though originally used mainly to elucidate organic diseases of the nervous system, is used by us as a general concept, since it has proved profitable in the understanding of non-organic, psychiatric and linguistic disorders.‡ Jackson speaks of evolution as "an ascending development in a particular order". As we understand it, from the lowest, most organized, most automatic, least integrated, least vulnerable, most archaic to the highest, least organized, most voluntary, most integrated, most vulnerable, youngest, most adaptable levels of action. Dissolution, being the reverse of the process of evolution is a process of undevelopment; it is a "taking to pieces" in order from the least organized, from the most complex and most voluntary towards the most organized and most automatic patterns. The symptomatology of nervous disorder thus shows a negative and a positive aspect. Since evolution is as a rule not entirely

† The term development is reserved here for the growth and unfolding of structure in the individual, whilst the term evolution refers to the same process as seen in the species.

‡ Cf. the review of Stein, L. (1942) *Speech and Voice*. In *The Times Educational Supplement*, Dec. 5th, 1942.

reversed, some lower level of evolution is left. If "the normal, highest, level of evolution (the topmost layer) is rendered functionless", then in addition to the patient's negative symptoms "his positive mental symptoms are survival on the lower, but *then* the highest, level of evolution. Scarcely ever, if ever, is dissolution the exact opposite of evolution. Often enough, however, do we meet with its near opposites." (Jackson⁽⁵⁾, p. 8). In this connection it should be mentioned that Freud's conception of regression and his earlier concept of retrogression (*Rückbildung*) is based on Jackson's idea of dissolution (Freud⁽⁶⁾, p. xi f).

It is assumed that, to some extent, the individual in his speech development recapitulates the linguistic achievements of his ancestors. It is the purpose here to show that the manner in which speech unfolds both in the present and in evolutionary time throws light on such communication patterns as are exhibited in various disorders, regarded here as patterns of dissolution. For the present purpose a rough division into five stages of linguistic development is convenient.

First Stage: Ancestral Cries and Clicks

In the baby's behaviour three types of emotional expression can be distinguished: (1) Rhythmical, that is, regularly and spontaneously recurring, relatively relaxed activities of various organs. (2) Tense movements which are reminiscent of hitting out, pushing away, etc. (3) Postures which render the baby rigid, often styled "freezing attitude". It has been suggested that such completely motionless postures may have helped creatures with no protection, particularly when they had no chance of fighting or running away, in escaping the attention of the enemy. It is an expression of the kind of anxiety when neither attack nor flight is possible.

Among the activities of the respiratory tract the preparatory actions of the vocal cords before the voice is sounded, together with the accompanying noises, called the vocal attacks (Italian *attacca*, "start," "onset") are important. They may be (1) aspirated (the crudest form of this vocal pattern is recognizable in sighs expressive of relief) (2) soft (sounds expressive of various types of self-assertion) or (3) hard (glottal stop, an explosive noise produced by the escaping air forcing open the tightly closed glottis). Biologically, the closure of the larynx leading to the vocal attacks seems to be a function that protects the lower respiratory tract against a twofold danger. The larynx, as a safety valve, counteracts excessive or too rapid expenditure of air, which might lead to deflation and collapse of the lungs and so averts a danger from *within*. When tightly closed it also protects the lungs against the intrusion of foreign bodies (Negus⁽⁷⁾). Like other gestures the various types of voice initiation have also symbolic meaning. For the reason given the aspirated and soft attacks (sighing, grunts of satisfaction, humming) are correlated with feelings of relief, the maintenance of the inner balance, self assertion, contentment and independence. The fact that air is being expelled

symbolizes "aggressivity" † (Latin *ad-gredior* "I go to it"). The tight closure becomes a symbolic reaction to any danger from *without*, a bad object forcing itself on the person. The glottal stop is consequently a typical symptom of anxiety.

Among the activities of the digestive tract the sucking movements deserve attention. They, like many other primitive functions serving the baby's well-being, are rhythmical; they involve highly complex actions designed to create successive vacua in the mouth in order that milk may be taken in. The noises accompanying the rarefaction of air in the mouth are known as clicks. ‡ Symbolically, these patterns represent the union with the mother, the most primitive social erotic contact. It is noteworthy that clicks still appear in the sound tables of certain existing primitive languages, particularly in South Africa (Graff⁽⁸⁾, p. 430).

These very early modes of communication, crying (emission) versus sucking noises (incorporation), illustrate the postulate given earlier that the elements are *a priori* arranged in pairs of opposites. It is also apparent that at this stage they constitute an unintegrated, pre-ambivalent structure.

Second Stage: Babbling

In the first stage the patterns of utterance (clicking and vocalization) are independent of each other. The beginning of the second stage is recognized by the *combination* of these two patterns. A rhythmical sequence of clicks intersects the voice stream and leads to a sequence of reiterated syllables in which clicks alternate with vowel sounds: e.g. *πa πa πa* (*π* stands here for the bilabial click). This combination of incorporation with emission, a pattern known as "babbling", depicts the dilemma between the desire to take in with the wish to approach: ambivalent behaviour. Soon the driving force of air (aggressivity) pervades and so reverses the clicks into consonants. The result is a rhythmical sequence such as *papapa*. Combination has developed into amalgamation; it symbolizes a relationship proper, give and take, or "I love you for better for worse": post-ambivalent behaviour. Babbling as an evolutionary pattern of binary opposition (tenderness-aggressivity) constitutes a particular item of a secret, unconscious code. In it elements expressive of hostility and anxiety, such as the glottal stop, are conspicuously absent. †† The elements of articulate language reveal it to be primarily expressive of love. Communicative speech represents a gift.

† We are aware that this word does not belong to the English vocabulary. We have coined it to avoid confusion with aggression in the sense of hostility.

‡ The counterpart of most consonants can be detected in clicks. For instance, the source of English (*p*) would be the noise accompanying a kiss produced by the lips. If the tip of the tongue takes part in the kiss the resulting noises would be reminiscent of (*pt*) (see Stein, L.)⁽⁹⁾.

†† This observation plays a vital part in comprehending the structure of stammering.

Third Stage: Emergence of the National Language

In this stage the child begins to realize that he lives in a group the members of which conform to a common code. They emit certain noises (words) which evoke reaction in other people. Without aural stimulation babbling fades out and the national linguistic code is not acquired (Deaf Mutism). In his struggle to acquire these words for his own use, the infant avails himself of patterns already at his disposal, namely, his spontaneous babbles. This "utilization of substitutes" is an "intelligent" procedure (MacCurdy⁽¹⁰⁾). The child's first efforts to use the conventional code are a compromise between natural language and the mother tongue; the transformation is progressive. *Boomboom* (book), *kokopumpum* (chocolate pudding), *dong dong iddly* (Armstrong Siddeley) are examples of speech in this transformation period. Similarly, *pater* developed historically from an earlier form *papa-ter* (Weekley⁽¹¹⁾).

It should be pointed out here that the acquisition of non-reiterative speech as a system of socially transmitted learned behaviour (Mead⁽¹²⁾) goes hand in hand with the emergence of other types of behaviour. There arises an ability to sanction the emotional response insofar as instead of the execution of the emotional activity the appropriate posture is maintained. In the history of language this is illustrated by the shortening of reduplication (e.g. late Latin *curri* "I ran" from earlier Latin *cucurri*); in the individual it is illustrated by the development from babbled (pathologically: stammered) utterances to non-reiterative utterances. It would be misleading to think that the speaker achieves the ability to contract rhythmical sequences into sequences of various monosyllables by inhibition in the sense of a restraint exerted by the will, though no doubt the rhythmical erotic tendency is subjected to considerable repression.

Fourth Stage: Acquisition of the Phonological System

The sound table of the infant is much more extensive than that used in the national language; the child discards the sounds that do not serve his purpose. Yet every human being speaks his own idiolect, that is, the personal variant of the mutually intelligible language structures (Hockett⁽¹³⁾, pp. 321 ff.). In this sense the language spoken by the child can be said to be related to that of the older generation as French is related to Latin. This fact exemplifies the axiom that language changes according to rules (Ross⁽¹⁴⁾, p. 28). The continual emergence of interpersonal linguistic differences presents the child and adult with a formidable task. For the sake of intelligibility these "natural" tendencies towards sound change have to be checked.

Fifth Stage: Acquisition of the Morphological and Syntactic Systems

In the course of time the child analyses certain parts out of a stretch of speech and so grasps the significance of independent words. He then sets

out to arrange them afresh in sequences which serve his own mode of thinking. His main difficulty at this stage is that he has to think of the words and their form (morphology or grammar) as well as the ways in which words can be grouped (syntax) for the purpose of conveying the sense. When the highest level of speech and language is reached spontaneity, present in the earlier stages, is lost, for the speaker must take time to find, remember, select and arrange words both to say what he thinks and to hide what he thinks. The importance of the relation between thoughts and feelings on the one hand and expression on the other becomes paramount (Mason⁽¹⁵⁾, p. 19).

THE DISSOLUTION (DISINTEGRATION) OF COMMUNICATION

We have seen that speech has been built up as a highly stratified edifice and can now consider various factors that may break up the structure. Comparatively mild disturbances may affect the evolutionarily youngest, most highly developed, most differentiated and also most vulnerable top level of speech. As a result, a lower stratum becomes dominant and impresses its features on what remains of the original structure. Additional stress lays bare lower levels and allows more archaic, fossilized patterns to emerge.

Morphological Disorders

Paragrammatism

Definition: A disorder characterized by deviations in the form and order of words in a meaningful unit.

Terminology: Agrammatism, Acataphasia, (καταφασις, "affirmation") (Steinthal⁽¹⁶⁾, p. 478) Agrammaphasia, Agrammatologia. The term Paragrammatism is preferable because the prefix *para-* is generally applied to anything that bears a similarity or relationship to something else,⁽¹⁷⁾ whilst the prefix *a-* indicates negation. Linguistic structure without any grammatical and syntactical features is hardly thinkable.

Etiology: Paragrammatism occurs as a normal condition when the child is in the process of reaching the highest level of speech integration. The condition is pathological when linguistic development is arrested at level 4 (see p. 299).

Diagnosis: The infinitive of verbs is used instead of appropriate tenses and moods; language is often used only to manipulate the environment whilst declarative statements are hardly ever made; the expression of the relation of ideas is deficient. Repetition of sentences spoken by the therapist, requests for explanations of pictures or for reports on incidents and similar tests reveal the disorder.

Differential Diagnosis: Mental deficiency, aphasia, dementia, stammering insofar as the word order is changed, sentences are condensed or telegram style is introduced in order to by-pass hold-ups (Aldridge⁽¹⁸⁾, p. 98).

Prognosis: Not unfavourable. Poor in cases of mental retardation.

Phonological Disorders

Under this heading are subsumed variants of speech which have hitherto been attributed to an "inability" to articulate.

Terminology: An attempt was made to introduce the English dialect word Lalling as the equivalent of Dyslalia but this is hardly warranted. Nor is Lallation (from Latin *lallare*, "to babble") acceptable. Hottentotism should, in the light of our knowledge of the Hottentot language, be discarded. It has been customary for text books of Speech Therapy to refer to disorders affecting the sound structure of a language by terms derived from Greek *λαλέω*, "I speak". The morbid aspect is expressed by such qualifying prefixes as *a-*, *dys-* or *para-*. Hence Alalia, Dyslalia, Paralalia.

To define Alalia as "absence of articulation and language" (College of Speech Therapists⁽¹⁹⁾) is inappropriate, antiquated (see Delius⁽²⁰⁾) and confusing since two essentially different nosological entities should not be referred to by the same diagnostic term. In any case alalia does not exist since some form of articulation is always preserved.

Dyslalia is a term used for such a wide variety of articulatory deviations that it has become virtually not only meaningless but also (with one exception) misleading. Hardly any effort appears to have so far been made to determine whether the articulatory deviations included in this one category indicate only one or a number of different nosological entities. It is deemed necessary to place the phonemic† anomalies into a structural framework before proceeding to diagnostic classifications.

Since 1925 one of us (L. S.) has repeatedly pointed out (Stein^(9, 22, 23, 24)) the misleading implication of the term Dyslalia, for it indicates that there is some *difficulty* in articulating. Van Ginneken (Van Ginneken⁽²⁵⁾, p. 11) emphasized the value of the notion that this disorder is not just a functional disability but rather the outcome of a change in the phonemic system. Contrary to the definition authorized by the College of Speech Therapists (College of Speech Therapists⁽¹⁹⁾), observation does not reveal a *defect*. Rather does comparative analysis point to ubiquitous tendencies towards phonemic change operative in all linguistic communication.

It remains to be established whether patients who appear to use "substitutes" for English sounds in fact do so, or whether it is the acoustic discrimination of the listener that is at fault. Müller (Müller⁽²⁶⁾, p. 184)

† A phoneme is a group of sounds, no two of which can take each other's place in the same environment. The sounds are said to be in complementary distribution (Potter⁽²¹⁾, p. 39).

reported that it seemed impossible for a foreigner to say whether what he heard in the language of the Sandwich Islands was the guttural sounds (k) and (g) or the dental sounds (t) and (d). Similarly in a phonetic transcription (Simms, Hartley, Grady⁽²⁷⁾) of a boy's "dyslalia", *get him* is transcribed as $d\epsilon^?Im$. Yet the (d) might not have been the same sound used by the boy when saying, for instance, *day*, but only sounded like it and deceived the observers. A more obvious example is heard in words such as *sick* and *thick* when spoken by a patient suffering from interdental sigmatism (see p. 306). With such words it is easy to hear that the patient uses different modes of utterance for (s) and for (th).

We propose to adopt the term *paralalia* for phonological disorders characterized by sound changes which follow the same laws of sound change as can be deduced from the comparison of languages on different space-time levels.

Paralalia

Definition: A psychogenic disorder of the phonological system (articulate speech as distinct from articulation) recognized by sounds deviating from those accepted in the sound table of the national language concerned. A comparison of the development and evolution of speech and language in general with the characteristic features of *paralalia* points the way to its etiology which in its turn provides a working assumption for treatment.

Symptomatology: The patient's understanding of speech is intact; he does not seem to be aware that his utterances are deviant; if these are imitated by others he recognizes the difference but his own speech remains uninfluenced, unless he is coerced into submission; the main characteristic is found in a certain conformity between the sounds of a phonological group, so that it is generally a whole group of speech sounds that is progressively changed according to rules analogous to those in the history of languages; vowel sounds seem to be very little affected; closer investigation shows that this is often due to the fact that the deviation is below the threshold of acoustic discrimination for the observer. The child may be able to articulate distinctly yet the reproduction of articulate speech is impaired. The usual intonation and stress are used.

Structure: The disturbance springs from the relationship with the mother during the first years of life (Stein⁽²⁴⁾). The child, in seeking to manipulate his environment, unconsciously shows his wish to dominate by giving in to the tendency towards phonological change, mirrored in the history of languages in general. He recognizes phonemic "misuse" in others (talking to him in his manner is almost invariably unacceptable to him) but for the most part he disregards his own phonemic variations. *Paralalia* as a phonological variant is therefore to be regarded as a psychogenic disorder.

To what purpose does the patient "choose" this symptom? Comparative linguistics does not claim to give an answer but it provides a clue to the disorder. Sound changes (Stein⁽²⁴⁾, pp. 142-149) are sanctioned so long as they do not impede intelligibility (e.g. *don't you* > *doncher*). Since, however, the *raison d'être* of speech to a great extent disappears with its intelligibility, members of social groups are obliged to restrain this inclination. Such restraint can be observed in all children who develop from the babbling stage to the stage of meaningful utterance. The child achieves his object only gradually; no child is immediately able to give words their accepted form (Mason⁽¹⁵⁾), and so in his first attempt to achieve harmony with his environment he experiences defeat. There arises a paradox: the more complete the defeat the more successful is the approach to "standard" speech. If natural tendencies prevail the child goes his individualistic way: tendencies toward systemic phonological change are subordinated to the neurotic goal of protecting the mother-child nucleus against the wider social environment. The recent application of phonemic analysis (Simms, Hartley, Grady⁽²⁷⁾, Haas⁽²⁸⁾) to this type of speech adds confirmation to our long-held view, but provides no new or additional information concerning the structure of the disorder.

Differential Diagnosis: Paralalia is revealed to be primarily a disorder of the phonological system and not a disorder of articulation; care has to be taken to distinguish it from disorders in which articulation itself is impaired, such as: organic defects in the organs of articulation (palate, lips, tongue etc.) or disorders affecting the speech musculature and/or its innervation, giving rise to dysarthria; defective articulation due to hearing loss with consequent insufficient feedback, resulting in dyslalia; aphasia, with regression (dissolution) to infantile phonemic variants; psychosis; paraphrenia; hebephrenia; autism.

Stammering can hardly be expected to be confused with paralalia (see symptomatology). A brief consideration of the structural difference between the two types of disorder may, however, not be out of place. Paralalia reflects *historical* tendencies towards sound change occurring at all times. Stammering is characterized by the intrusion of genetically fixed, *evolutionary* speech patterns (see pp. 295).

Prognosis: The child nearly always eventually adapts the phonemic structure of his language to comply with that of his environment (Morley⁽²⁹⁾). Whether in doing so he recovers from the condition that gave rise to the disorder is a matter for conjecture. It is possible that in many cases it is only the symptom that is lost giving way to other less spectacular ones. We do not yet know how much "learning" has harmed the personality structure of children whose speech was "successfully" corrected. Numerous reports

support the alarming observation that a stammer may develop following speech therapy (Simms, Hartley, Grady,⁽²⁷⁾ p. 160).

Treatment: The meaning of the prefix *dys-* perhaps accounts for the still widely held idea that the hitherto so-called dyslalic patient simplifies articulation because he cannot master it. Following the dictum that "we must discover the articulatory errors which make his speech unacceptable" (Van Riper⁽³⁰⁾), the rationale for treatment has been based on speech *correction*, the yardstick of success presumably being the therapist's aesthetic standards and other adults' demands. Since, "with few exceptions, such defects tend to be entirely eliminated in the process of growth" (Clark⁽³¹⁾, p. 95) it becomes clear that speech correction is not only flying under the false colours of therapeutic procedure but is *ipso facto* an unnecessary procedure at best doing no more than enhance the immediate reputation of the "speech correctionist" or "speech therapist". Indeed, if the disorder is shown to be a symptom of an unconscious trend, its successful removal may well aggravate the patient's psychological maladjustment. The argument often put forward that "dyslalic" children stand in need of symptomatic treatment because of the frustration the symptom causes them is as naïve as the arguments put forward in other instances of symptomatic treatment. The frustration of those concerned with such a child, their projections and reactions to the child, are another matter.

Nor can we subscribe to Haas's (Haas⁽²⁸⁾) recommendation of remedial exercises to teach the child how to discriminate among sounds, since this suggestion is based on phonemic description and on a comparison with the difficulties a foreigner has in learning another language. Haas himself admits that phonemic analysis tells us only "what is wrong, rather than why it is wrong" (Haas⁽³²⁾). † Arnold (Arnold⁽³³⁾) also denies that mere phonemic analysis can shed light on the nature of linguistic phenomena. Phonemic analysis can never be diagnosis since diagnosis requires "the collection and critical evaluation of all the evidence obtainable from every possible source" . . . combined with a knowledge of basic principles "leading to a concept of the etiology . . . of disordered functions" (MacNalty⁽¹⁷⁾) which allows the disorder to be classified, and above all, to derive from it a suitable way of verification, which is the only way *treatment proper* proceeds.

Hence articulation exercises, speech guidance and the like are not only unnecessary, but potentially harmful, for such procedures are based on description and not on the psycho-linguistic structure of the speaker. Treatment should do justice to the child's socio-psychological relations, unconscious fantasies and his resistance. It can be predicted that the acquisition of a capacity to make satisfying relations with other people will result in the patient's unconscious willingness to restrain his impulses towards uninhibited linguistic change.

†‡ Fifty years earlier Wundt (Wundt⁽³⁴⁾, pp. 315 ff.) had assumed an imperfect acoustic perception of sounds to be responsible for phonetic change.

Pararhesis

Definition: A phonological disorder constituting an arbitrary, unstable and fluctuating extreme idiolect.

The psychodynamic aspect of the disorder undoubtedly differs from those of paralalia and dyslalia, a distinction that so far seems to have been overlooked; a different term is therefore warranted. An account of this observation was first published by one of us (S. M.) in 1963 (Mason⁽³⁵⁾) when the designation pararhesis (Greek *rhesis* from *eréo*, "I say"; *para*, "beside") was introduced for the condition.

Etiology: Disturbed early relationship between child and mother in which magical ideas act as principal motive for the peculiar linguistic patterns.

Symptomatology: Hearing and listening are unimpaired; articulatory ability and word comprehension are normal; the sound table is changeable and unpredictable; there is no phonemic consistency; no rules of sound change can be deduced.

Diagnosis: Verbal communication differs from the language of the community by the frequent arbitrary alteration of sounds.

Differential Diagnosis: Aphasic and dysarthric disorders, phonological deviations symptomatic of hysterical and psychotic disorders; paralalia; dyslalia.

Structure: Since the patient suffering from pararhesis substitutes one sound for another, whereas in paralalia he allows the sounds to undergo a change, the structure of the two conditions does not seem to be the same. The paralalic child continues to operate on a lower evolutionary level; the pararthetic child has apparently reached a linguistic level similar to that of the standard speaker.

The patient's inner (unconscious) situation makes the use of a secret code imperative. He knows and can use the conventional forms and meanings of the words current in his community, he also knows the superficial meanings of the linguistic forms (phonemes, morphemes) that he uses; what he is not aware of is his own secret, the key to his code. Overwhelming, forbidden erotic wishes, frustration and correlated murderous impulses are disguised in the actual utterances. These are binary coded in that they are acts of appeasement where silence would call forth anger and punishment, yet at the same time they are aggressive, self-assertive and expressive of triumph over the listener. The mode of speech allows information to be given while the environment is manipulated without fear.

Prognosis: The children seem to respond well to dynamic interpretation. Provided these are given the prognosis is good.

Treatment: Psychotherapy should proceed on analytical lines. Articulation exercises are to be condemned as they would only result in increased unconscious terror that the code might be broken and the hidden feelings

made public. Treatment, as distinct from mere "sympathetic handling," undertaken by those versed in child psychotherapy and aware of the special needs of the patient, should be guided by the assumption that the patient uses language not only for general informative purposes but also to send out a message in a secret code, secret also from himself, which in effect may be decoded as "Treat me as the baby I should like to be and which you can see I am by the way I speak" (Mason⁽³⁵⁾).

Other Phonological Disorders

With the differentiation of articulate utterance certain sounds come to form classes, such as those of the sibilants, fricatives or plosives. Disorders affecting these are systemic in that sounds belonging to one group are often subject to the same rules of sound change. In some cases the changes are confined to one sound only. Brief mention of what may be the salient psychiatric implications in some of these disturbances is made here.

Multiple Interdentalism

Definition: A disorder in which the articulation of some or all of the sounds produced by the tip of the tongue (s, z, t, d, n, l, sh, ch, dge, th† (voiced and voiceless)) is interdental.

Etiology: Protrusion of the tongue is often observed in babies, the tongue apparently taking the place of the nipple. It is one of the manifestations of the primitive oral-erotic tendency. When maintained in speech it represents partial dissolution in the sense of fixation on an early level of speech development.

Symptomatology and Diagnosis: The tip of the tongue protrudes and some or all of the sounds of the group are articulated interdentially. Observation of the articulatory movements during speech together with careful listening reveal the disturbance. It should be noted that acoustically the interdental pronunciation of (t), (d), (l) and (n) is scarcely noticeable.

Differential Diagnosis: Sigmatism (see next section).

Sigmatism

The term is a compound of *sigma*, the Greek name of the sound (s) plus *-ism* denoting a peculiarity of action.

Terminology: Lispings.

Definition: Deviations from the accepted articulation of the sibilant sounds only (s, z, sh, ch, dge, th (voiced and voiceless)).

† For the pronunciation of English (th) see Ripman (Ripman⁽³⁶⁾, pp. 64ff).

1. *Interdental Sigmatism*

Definition and Diagnosis: The tongue articulates between or against the front teeth and the friction required for the sibilants is produced through a transverse slit. In English and other languages containing (th) this constitutes a disorder inasmuch as the fundamental postulate of communication, that of binary opposition, is violated. The opposition, for instance, between *sick* and *thick* vanishes for the average listener.

Etiology: Oral erotism.

Differential Diagnosis: Multiple interdentalism.

Prognosis: Interdental speech often occurs in children up to the fourth year (Newekluff⁽³⁷⁾, pp. 90 ff.). It can therefore be regarded as a physiological phenomenon in the speech development of small children. In adolescents whose erotic needs are gratified by the protruding tongue it constitutes a morbid pattern. With adaptation of the personality to social surroundings negative auditory feedback generally leads to the use of the standard sound; should the oral-erotic attitude prevail the prognosis is similar to that for other neuroses.

2. *Lateral Sigmatism*

Definition, Symptomatology and Diagnosis: The tip of the tongue articulates against the upper teeth or gums and so forms a complete medial closure, whilst the escaping air produces a frictional noise on one or both sides of the tongue, giving the acoustic impression of a hiss made simultaneously with a voiceless (l) sound. Such sounds occur in American Indian languages especially of the North West Coast, and in some Caucasian languages (Hockett⁽¹³⁾, p. 73). It is therefore no longer warranted to regard these sounds as "defective"; they are merely sounds that when not contained in the national sound table are unacceptable.

Etiology: In many cases lateral articulation is accompanied by drawing one corner of the mouth sideways. The significance of this movement has been pointed out by Darwin (Darwin⁽³⁸⁾): "the action is the same as that of a snarling dog". Such cases suggest that this disorder expresses a repressed aggressive tendency; the psychological examination of patients with lateral sigmatism often confirms this assumption.

Treatment of Multiple Interdentalism and Sigmatism: Psychotherapy on dynamic lines should aim at the resolution of the underlying erotic exhibitionism or the aggressive attitude. There is, however, a possibility that although the patient's sociopsychological problems have been resolved the symptom remains because the abnormal articulation has been so thoroughly canalized that the patient is unable to find or use the "correct" articulation. In such cases there is room for remedial exercises (Stein⁽²⁴⁾).

Nasal Sigmatism

Definition and Diagnosis: The disorder is characterized by the conjunction of a hissing noise with nasality. The tip or front part of the tongue may take up the normal position required for the sibilants or it may be somewhat drawn back. The soft palate remains lowered so that air escapes through the nose.

Etiology: If the articulation of the tip of the tongue is for some reason hindered the friction characteristic of the (s) sounds becomes less distinct and at the same time the sound becomes nasalized. This observation suggests that there is an original connection between the articulation of the tip of the tongue and the elevation of the soft palate (Stein⁽³⁹⁾). Nasal sigmatism may, therefore, be a neurotic articulatory pattern due to the repression of an early oral trauma.

Differential Diagnosis: Rhinophonia (see Stein⁽²⁴⁾, pp. 171-179).

Articulatory disorders due to organic abnormalities, such as cleft palate, hearing loss, etc., cannot be discussed here. Addental Sigmatism must nevertheless be mentioned for the sake of differential diagnosis.

Addental Sigmatism

Definition: An articulatory disorder in which the sibilant sounds are replaced by sounds resembling "lisped" sibilants (although the tongue does not protrude) or (t).

Etiology: The disorder is due to mild bilateral lesion of the inner ear, which is either congenital or acquired in early infancy (Fremel and Froeschels⁽⁴⁰⁾, Stein⁽⁴¹⁾). The child cannot, therefore, perceive the very high harmonics or formants (Gleason⁽⁴²⁾, pp. 205ff.) characteristic of the (s) sounds. When learning to speak he renders the (s) sounds *as he hears them* (see definition). This disorder may properly be classified as dyslalia.

Diagnosis and Differential Diagnosis: Multiple interdentalism. The importance of the findings of exact hearing tests cannot be over-emphasized. High frequency loss may not be suspected by the patient or by those around him for the hearing for all other practical purposes is adequate.

Prognosis: The prognosis largely depends on the extent to which the patient is able to utilize kinaesthetic impressions provided by remedial exercises. In predominantly acoustic types the prognosis is therefore very poor.

Treatment: Prolonged "treatment" of patients of an acoustic type can only result in frustration and resentment on the part of the patient and betrays insufficient understanding of the disorder on the part of the therapist. Psychotherapy may have to deal with the marked inferiority feelings often involved in the psychological superstructure.

CODING DISORDERS

Cluttering

This disorder is included only for the sake of differential diagnosis and its therapeutic implications.

Terminology: Tachyphemia, paraphrasia praeceps, tumultus sermonis, barylalia, leipophemia, battarism.

The semi-popular term cluttering means "to make confused, to put into disorder, to clog", and this is indeed the general aspect of this disorder. The German word *poltern* refers to its rumbling, blustering character; paraphrasia praecox describes the precocity and rapidity of the patient's speech. These terms also indicate that the patient does not say what he is expected to say and that what he does say is to a greater or lesser extent incoherent.

Definition: Constitutional neurological disorder characterized by incoherent, hasty communicative behaviour with dissolutionary patterns belonging to the rhythmically reiterative level of speech development. Psychological factors can be excluded (Arnold⁽³³⁾, p. 37).

Symptomatology: The main symptom is the rapidity of the patient's speech. Sounds, syllables and words are left out, transposed or misused, which in severe cases makes the patient's speech unintelligible. There is marked reiteration of syllables. The patient does not seem to notice the defect but can be made aware of it. If asked to speak more slowly he can do so and his speech then becomes intelligible. Although it is true that the disorder can be subjected to voluntary control, the effort required cannot be sustained for long.

Differential Diagnosis: Extrapyramidal dysarthria, stammering in its first stage, mild forms of receptive aphasia and severe anxiety states.

Treatment: Psychoanalytic treatment is contra-indicated; in some cases it has led to depression. Care should be taken to prevent secondary phobia and stammering.

Stammer

Terminology: Stammering from *sta* "to stand, remain fixed"; Stuttering from *stut* "to trip up", "to stumble"; dysphemias; associative aphasia; socio-affective dysphasia.

The use of the terms associative aphasia and socio-affective dysphasia is justified if it is borne in mind that they are not used neurologically but metaphorically, to indicate a misrelation between mentation and verbalization.

Stammering and Stuttering are words that merely describe the behaviour of the speaker. They give no indication of the nature of the disorder and can lay no claim to being diagnostic terms. In full realization of its deficiencies,

we propose to make use of the word Stammering here for the sake of immediate convenience.

Definition: Most definitions are unsatisfactory for various reasons. Some are merely descriptive such as "disorder of fluency (rhythm)" (College of Speech Therapists⁽¹⁹⁾). Here the reference is to speech rather than language and is grossly misleading since stammering is a disorder of communication, not of speech. Some definitions are speculative; one of these is dysphemia, a term for a mysterious "underlying neuromuscular condition which reflects itself peripherally in nervous impulses that are poorly timed in their arrival in the paired speech musculatures" (Van Riper⁽³⁰⁾, p. 270). An older, similar definition is "nervous reaction in the sphere of speech coordination on a constitutional basis" (see Nadoleczny⁽⁴⁴⁾, p. 14ff.). It is curious that this disorder has not yet been subjected to a satisfactory diagnostic classification based on its pathological structure.

Basically, stammering is a form of verbal activity in which there is intrusion of genetically fixed linguistic patterns appertaining to lower levels. Persistent stammering is a neurosis manifest in progressive dissolution of communication. The disorder is expressive of a disharmony in the interrelation between psychic processes and the linguistic encoding process irrespective of possible neuropathological conditions. Its various stages are characterized by the dominance of primitive and archaic speech forms; the speech forms follow each other in the reverse order in which they appear in the evolution of speech.

Symptomatology: The main features of stammering are rhythmical reiteration of syllables; rhythmical clicks; tense rhythmical repetition of syllables uttered very slowly, overrapidly or at the average rate of speech; prolonged, hesitant utterances; slow, scanned repetition of syllables and/or words; over-precise or slurred articulation; embolophrasias; glottal stop; freezing; concomitant movements of other parts of the body; disturbances of respiration; psychosomatic symptoms such as blushing, sweating, heart palpitation, etc.; emotional features such as anxiety and uneasiness; paranoid ideas; fear of certain persons or situations; various evasive manoeuvres; excitability and exhaustibility.

Etiology: In the literature on stammering emphasis is often placed on the multiplicity of its causes. Among these are listed change of environment (first going to school, moving house, etc.); faulty upbringing; psychic trauma (following a fall, bite by a dog, etc.); somatic trauma (concussion, severe illness, etc.); delayed myelinization (Karlin⁽⁴⁵⁾); imbalance of either the vegetative nervous system, strio-pallidar, rhinencephalic or centrencephalic systems (Anastasopoulos, Diacyoyannis, Routsonis⁽⁴⁶⁾, pp. 472ff.); constitutional emotional imbalance; speech disorganization; muscular incoordination; lefthandedness; dysphemia.

It seems that the multiplicity of causes is implicitly or explicitly made responsible for the intractability of the disorder. Such a defeatist approach may be interpreted as revealing an unconscious sense of guilt on the part of the therapist, for statements made about the causes of stammering seem to imply that past events, psychic trauma, neuropathological conditions and the like cannot be undone; *therefore* stammering is difficult to treat—a euphemism for “I can’t help you”! Workers opposed to the principles of depth psychology are obfuscated by their own embarrassment when confronted by oral-erotic symptoms. Consequently they sin against one of the first principles of the philosophy of science, namely, the distinction between cause and reason.

Cause is an event which is assumed to precede and lead to certain changes as inevitable, necessary consequences, or to which a subsequent event or effect can be attributed. Cause is therefore unthinkable without an arrangement of events on a time scale. Reason, on the other hand, is the content of a judgement the validity of which justifies and makes self-evident another judgement. As a judgement, reason is independent of time. It, and only it, can conduce to real insight. To illustrate: the causes of death are many; there is only one reason, stated to be the cessation of metabolism.

Structure: The literature on stammering is vast (cf. Barbara⁽⁴⁷⁾, Hahn⁽⁴⁸⁾). With few exceptions the investigations have not helped us to bring order into the mass of data, thus the nature of this incapacitating disorder is not well understood. It is distressing to find that this is true even of more recent publications. For instance, in *Modern Perspectives in Child Psychiatry* (Howell) the contribution on stammering in the chapter devoted to speech disorders (pp. 336–348) does not show the depth of psychological understanding necessary for the elucidation of the structure of stammering. Publications of this kind, the value of which cannot be judged owing to the absence of scientifically valid criteria, are not considered here. Though progress has been made during the last fifty years, most of those concerned with the treatment of stammerers appear unable to go further than the layman in the recognition of the condition and seem unaware of the fact that recognition does not equal diagnosis.

Our investigation into the etiology and nature of stammering follows the principles stated in the section on the integration of communication. It is based on the first and very fruitful scientific attempts made by Hoepfner (Hoepfner⁽⁴⁹⁾) and Froeschels (Froeschels⁽⁵⁰⁾) who about fifty years ago placed the symptoms on a time scale and were thus able to demonstrate that the so-called types of stammering are stages in the development of the disorder. These two workers found that the initial stage of stammering is characterized by a repetition (*sic*) of syllables (cf. cluttering) and considered this to be due to a disproportion between thought and verbal expression; hence their term associative aphasia (later associative dysphasia), aphasia serving here as a term for the misrelation between thinking and verbalizing. One of us

(L.S.) (Stein⁽⁵¹⁾) realized that the initial symptom was not a repetition of syllables but a *rhythmical* sequence of syllables and identified it with babbling. This shows that the functional structure of the highest level of language is disrupted; thus the activities of a lower layer, the pleasurable, rhythmical speech patterns mirrored in infantile babbling are released.

“The speaker who is about to utter must first of all organize what he is going to say in its appropriate coded form . . . Before he begins a sentence, the speaker generally has some idea of the form of the sentence he is going to utter” [the grammatical shape of the sentence] “and also of its content. During the encoding, however, form words are more readily found and organized in sequence than content words and hence there is a tendency for encoding to proceed rapidly through sequences of form words and to slow down or stop at the points where there are content words” (Fry⁽⁵²⁾, p. 67f.). In a stammerer the difficulty in linguistic encoding may be due to cerebral conditions allied to aphasia or it may be relative to the impulsiveness and impetuosity of the speaker, attributes which may be uncovered and aggravated by the family constellation. In contrast to the standard speaker who accepts and adjusts to the linguistic encoding difficulty, the stammerer forces the issue, overtaxes himself and breaks down.

The rhythmical reiteration as an oral-erotic, archaic linguistic pattern indicates dissolution and also points to a further essential factor: the stammerer's intense desire for oral gratification. Abraham (Abraham⁽⁵³⁾) says of oral types that “their longing to experience gratification by way of sucking has changed to a need to *give* by way of the mouth, so that we find in them, besides a permanent longing to obtain everything, a constant need to communicate themselves orally to other people”. The oral type “hungers” for attention and affection. Under conditions of privation, frustration or distress he reverts to those oral erotic patterns of behaviour which may be interpreted as an expression of desire to enjoy an imaginary (Good) Mother when speaking to the substitute (Stein⁽⁵⁴⁾, p. 192, ⁽⁵⁵⁾, p. 125, ⁽⁵⁶⁾, p. 111). The stammerer is compelled to pour out words (gifts) quickly and abundantly to others in compensation for his feeling of deprivation. In essence, the stammerer, as a deprived and exploited person, is thus, symbolically speaking, both the infant who needs to be fed and the all-giving Mother.

It can be seen that rhythmically reiterated speech (babbling) is *per se* a mode of behaviour that is in and of itself pleasurable and comforting (Stein⁽⁵⁷⁾). Generally speaking, however, the underlying sexual aspect of babbled utterances arouses resentment and embarrassment in the listener whose reactions communicate themselves to the stammerer; hence there is violent reaction. This is further aggravated by the unconscious realization that the symptom indicates an inability to conform to civilized behaviour. This inability to adopt an attitude, to remain in the first phase of an action, which in the case of spoken language consists in the utterance of one syllable or a compound of syllables instead of sequences of syllables, marks the

stammerer as being on a lower evolutionary level. Hence environmental circumstances necessitate the suppression of the symptom, that is to say, the unconscious discharge becomes partially arrested by the half-voluntary urge to conform to the accepted linguistic standard of the social group; the babble becomes to an increasing degree obliterated by tension.

Effort to inhibit the babble involves bodily tension; as a result speech becomes increasingly strained. The harder the stammerer consciously tries to "pull himself together", the more tense he becomes; tense repetitive, then tense single syllables appear until the babble is for the most part effaced. Seen from the angle of the unconscious self, tense patterns mark dissolution to a still lower, that is, less integrated level of speech and behaviour. On this level the observable tension is expressive of, and involved in, the speaker's violent reaction which may be betrayed also by various concomitant gestures such as baring or grinding the teeth, kicking and hitting movements. With further frustration, conscious speech phobias become more and more marked until, driven to retreat to even lower evolutionary levels, anxiety springs up. On this level the glottal stop appears as a classical anxiety symptom in the sense of a reaction to a danger from without. The stammerer then says "I cannot get it out". Yet it is as if he were saying "I cannot risk letting anything in". With further dissolution the "freezing attitude" prevails: a pre-human anxiety symptom which shows itself in rigidity that makes all speech virtually impossible. On this same level further dissolution may split the babbled utterances into their original oral-erotic components (cf. Coriat⁽⁵⁸⁾) and the consonants are then (in a relatively small number of cases) superseded or introduced by the ancestral clicks.

With the uncovering of the crying level in its entirety, rearousal† of the lowest level of communication is dominant. The stammerer who now believes himself to be surrounded by a hostile world has returned to the "Great Mother". He attempts to conceal his trouble by the deliberate use of evasive and elusive measures and speech tricks, such as the substitution of an "easy" word for a hard and frightening one, meaningless interpolations known as embolophrasias, and other "cover-up" devices. All this only aggravates his anxiety until he is reduced to a state of despair and depression (occasionally with suicidal tendencies) which he may mask by an air of unconcern, aloofness, indifference or superiority. Such cases show that apparent easiness in speaking must by no means tempt us to regard them as mild.

Diagnosis: In view of what has been said about the symptomatology, etiology and structure of the disorder, the diagnosis should not present any difficulties. Projection tests are sometimes helpful (Pitrelli⁽⁶⁰⁾, pp. 175 ff.).

Differential Diagnosis: Tense stammering may be confused with slight spastic conditions due to extrapyramidal syndromes; disorders which from

† Rearousal is a word that Bowlby (Bowlby⁽⁵⁹⁾) considers preferable to regression.

their inception have always been characterized by the glottal stop should be classified as anxiety states; spastic movements of the tongue and clicks can be found in dysarthria due to chorea; rhythmical reiteration may be part of a hysterical syndrome or due to cerebral tumours (Arseni⁽⁷⁸⁾); very marked reiteration sometimes heralds the gradual onset of infantile dementia; in exceptional cases stammering precedes or is the equivalent of an epileptic fit (Féré⁽⁶¹⁾, p. 115), but the relationship between the two disorders is dubious; rhythmical reiterations can make the distinction between stammering and cluttering difficult. Significant differences between the E.E.G. of the clutterer and that of the stammerer have been claimed (Luchsinger and Landolt⁽⁶²⁾, pp. 135f.), control investigations carried out by one of us (L.S.) have not yielded any unambiguous data. Psychiatric examination may reveal that a seemingly educationally subnormal child is in fact a stammerer who successfully masks his symptoms and consequently finds himself in constant fear of detection.

Prognosis: Provided mental over-stimulation is consistently avoided and care is taken to prevent the child from objecting to the symptom, stammering in its first stage generally clears up within a few months since evolution and re-integration are, if not counteracted, a continuous process; stammering in hysteria may lead to mutism (Stern⁽⁶³⁾, p. 617); if associated with marked paranoid traits, it offers an unfavourable prognosis; anxiety states presenting as stammer (glottal stop) will not respond to the therapeutic measures effective in stammering. Stammering in children with subnormal intelligence is not well understood and the prognosis is poor.

Treatment: In view of the structure of the disorder, those who wish to treat stammerers should be conversant with psychodynamic principles (Maclay, Mason and Stein⁽⁶⁴⁾) and competent in handling "orally starved" patients; it is equally important that they should be sufficiently acquainted with the evolutionary structure of linguistic communication. In advocating that treatment should be guided also by anthropological and linguistic principles we go further than Gillespie (Gillespie⁽⁶⁵⁾) and Davidson and Gibbs (Davidson and Gibbs⁽⁶⁶⁾).

Treatment should in the first place aim at resolving the unconscious conflict between thoughts and feelings on the one hand and the linguistic codes that serve to clothe and cloak them in words on the other. Sight should never be lost of the fact that stammerers are infantile oral-erotic personalities; hence they need to be "fed". The therapist should proceed without *instructing* the patient who usually insists on explanations. If the therapist falls into this trap the patient responds as if he were saying: "If you know what is wrong, do something about it. I'll then show you who is the more powerful and you will fail".

Unconsciously motivated violence should turn into healthy "aggressivity".

Play therapy guided by, and aiming at verifying the assumptions concerning the unconscious dissolutionary and regressive unconscious aspects of stammering has proved effective (Ellis⁽⁶⁷⁾, pp. 109, Pollitt⁽⁶⁸⁾, pp. 117).

The leading idea to the approach of anxiety states (freezing, glottal stop) should be to demonstrate by means of the patient's own utterances that contrary to his own statement "I cannot get it out" what he secretly encodes is either "I won't let you invade me" or "You are so powerful that I can neither run nor attack".

Provided that the therapist consistently tries to understand the clues which every patient gives to his own code, the prospects are not unfavourable; certainly not as bad as to warrant Fenichel's (Fenichel⁽⁶⁹⁾) cautious recommendation of a trial analysis.

Short-term treatment of cases beyond the initial stage is to be definitely discouraged. Symptomatic treatment such as breathing, articulation, phonation, reading exercises and other methods of persuasion and suggestion in any form, is not derived from the diagnosis. Such measures do not permit the theory to be tested, are unscientific, useless and probably harmful. Drug treatment, for the same reasons, is to be discouraged even though it has been claimed that it renders the patient more accessible to "speech therapy" (cf. Maxwell and Paterson⁽⁷⁰⁾, p. 873). Hypnosis (Kennedy⁽⁷¹⁾, p. 1319) and "speech shadowing" (preventing the patient from hearing his own speech by means of muffling earphones) (Cherry and Marland⁽⁷²⁾, p. 874, Cherry and Sayers⁽⁷³⁾, p. 233) have not yielded lasting, encouraging results.

Those practising relaxation therapy, if they achieve improvement, seem unconsciously to make use of the patient's reinforced submissiveness (Fenichel⁽⁶⁹⁾). Practitioners in relaxation therapy infer that stammerers are as tense in mind as in body; they approach the mind through the realm of the body. They, in unison with the stammerer, are guilty of drawing a conclusion from a false premise: Stammer = standard speech + tension. Therefore standard speech = stammer - tension (- tension = + relaxation).

To state that "tension" creates a stammer is manifestly untrue since study of the stages of stammering clearly shows tension to be absent in the first stage of the disorder.

Hearing Mutism

Terminology: Congenital word deafness, congenital auditory imperception, audimutatis, idiopathic mutism, mutatio physiologica prolongata, alalia.

The term hearing mutism (from Latin *mutus* "dumb") is adopted here because it stresses the distinction between this disorder and aphasia; it also points to a certain similarity with deaf mutism. Congenital auditory imperception (Worcester-Drought⁽⁷⁴⁾) seems an unnecessary new term for a pre-

viously defined condition. Alalia (College of Speech Therapists,⁽¹⁹⁾) should not be used as the equivalent of hearing mutism. (See p. 315.)

Definition: Arrest of the power of speech. Subdivision: sensory hearing mutism, motor hearing mutism.

Sensory hearing mutism: State of speechlessness in which the understanding of verbal language appears to be absent. The child hears but does not listen. Since acoustic phenomena do not act as stimuli, verbal communication cannot develop.

Motor hearing mutism: state of speechlessness while the understanding of spoken words seems to be unaffected.

Symptomatology: Language comprehension varies according to the type of hearing mutism; intonation is not affected; intelligence is normal; gesture language is largely used; optical and tactile imagery well developed to the detriment of acoustic imagery (Froeschels⁽⁷⁵⁾, p. 544).

Etiology: Familial retarded development of speech; hereditary neuropathic traits; adenoids; intermarriage; difficult delivery; cerebral lesions; delayed myelinization; "bilateral agenesis or hypogenesis . . . of the auditory word areas . . . of the temporal lobes" (Worcester-Drought⁽⁷⁴⁾).

Diagnosis: Often difficult. Reliable hearing (see Sheridan⁽⁴³⁾) and intelligence tests are essential.

Differential Diagnosis: Minimal brain injury (Lawrence⁽⁸⁰⁾); aphasia; deaf mutism; mental deficiency; autism (Kanner and Eisenberg⁽⁷⁶⁾, Polan and Spencer⁽⁷⁹⁾); akinetic mutism (Steriade *et al.*⁽⁷⁷⁾); hysteria; dementia praecocissima; psychosis with terror and delusions; aphrasia voluntaria (the child *chooses* not to speak in order to avoid being teased or reprimanded, for instance because of stammer, paralalia, etc.), elective mutism (unconscious fear of revealing "family secrets") (Pustrom and Speers⁽⁸¹⁾).

The distinction between hearing mutism and the disorders mentioned above may present difficulties. It is as well to bear in mind that in hysterical mutism the child, as Oppenheim put it, "is more mute than the aphasic patient".

Prognosis: Provided a neurotic superstructure has not unduly aggravated the condition the prognosis is fairly good, though better for the motor type than the sensory one. The disappearance of hysterical mutism is usually as sudden as its onset. (Nadoleczny⁽⁴⁴⁾, p. 135).

Treatment: Treatment of the neurotic maladjustment must go hand in hand with special speech treatment if the latter is to provide the motive which induces the child to develop the "listening" faculty. Acoustic imagery and receptiveness should be trained by presenting spoken words with additional stimulus (pictures, objects, etc.) in a more systematic way than is needed for other children. The threshold of response is lowered if stimuli,

which are in themselves not powerful enough, are repeated several times in succession (Stein⁽²⁴⁾, p. 102).

Voice Disorders

Most functional voice disorders in childhood are not as rare as is generally believed. They can be conveniently grouped under the following three headings:

Hysterical Aphonia

In children this is a rare disorder. According to Nadoleczny (Nadoleczny⁽⁴⁴⁾, p. 136) it affects children between the ages of six and fourteen after psychic trauma, though in a case known to one of us (S.M.) the disorder started at the age of three. The onset is sudden.

Symptomatology: The voice may be completely absent or breathy, weak and hoarse. Laryngoscopy shows various forms of bilateral flaccid or spastic paralysis of the vocal cords; the character of the voice varies accordingly. Vocal sound involved in singing, laughing, coughing, in speech while dreaming and in utterances that are emotionally highly charged, (swearing) is generally clear.

Differential Diagnosis: Phonasthenia; organic disorders such as severe inflammation of the vocal cords and conditions involved in endocrine disturbances, syringomyelia and other neurological diseases.

Prognosis: Relapse is likely if superficial treatment is confined to vocal exercises or if the therapist does not apply the faradic current with complete self-assurance.

Treatment: Faradic shock is usually effective but does not eradicate the regressive state; vocal exercises are, as such, useless. Treatment should be left in the hands of therapists experienced in the psychodynamic approach.

Pubertal Paraphonia

Terminology: Puberphonia (College of Speech Therapists⁽¹⁹⁾).

Definition: Vocal disorder arising during puberty.

Symptomatology: Hoarse, raucous, high pitched, infantile, falsetto-like or feminine voice.

Etiology: Rapid, disproportionate growth of the larynx with hyperactivity of the cricothyroid muscle; deepseated psychosexual difficulties, particularly latent homosexuality, with tendency towards adopting a female role.

Diagnosis: In view of the obvious character of the voice and a certain passive feminine attitude to life the diagnosis is fairly easy; there is often secondary depression.

Differential Diagnosis: Redness and swelling of the vocal cords are secondary symptoms and should not lead to the diagnosis of chronic laryngitis or allied organic conditions.

Prognosis: If misinterpreted or maltreated, the disorder may become stabilized and constitute a definite handicap in later life.

Treatment: Psychotherapy may sometimes be combined with vocal re-education; this should include antero-posterior pressure on the thyroid cartilage to counteract the tensing action of the cricothyroid muscle.

Phonasthenia

Definition: Functional weakness of voice.

Symptomatology: Hoarse, harsh sounding, husky voice; secondary irritation of the mucous membrane of the vocal cords; the compass of the voice is diminished.

Etiology: Misuse or overstrain of the vocal mechanism; the onset is gradual.

Diagnosis: No pathological signs can be observed laryngoscopically; patients often complain of various sensations such as pains in the throat or neck, sometimes radiating towards the orbita or the ear; the chest register rather than the appropriate middle register is used; speech may be laborious and accompanied by facial grimaces.

Differential Diagnosis: Catarrh of the larynx; hysterical dysphonia; muscular degeneration due to tuberculosis, trichinosis, anaemia or infectious diseases (typhoid, diphtheria) (Stein⁽²⁴⁾).

Treatment: The socio-psychological aspect of the habitual misuse of the voice should receive due attention; appropriate remedial exercises are only then effective.

Conclusion

It becomes apparent that a discipline is needed that embraces among other sciences an understanding of anthropology, comparative (diachronic and synchronic) linguistics and dynamic psychology in order to deal with the psycho-linguistic disorders of childhood. The diagnosis and treatment of psychogenic speech, language and voice disorders offer a challenge which, it seems to us, has so far rarely been satisfactorily taken up. It is generally acknowledged that treatment is in truth unsuccessful if the symptom and not the patient is treated. It would mark a definite advance in the realm of medical psychology if this realization were extended to encompass the disorders we have discussed in this chapter. Only then could it be claimed that treatment is administered in the sense of an attempt to verify an assumption regarding the structure not only of the disorder but of the patient.

Speech (*sic*) therapy and speech correction would then be confined to the provinces to which they properly belong.

REFERENCES

1. SPINOZA, B. (1948) *Ethics*. Proposition 7, Schol. London, Dent. 2.
2. STEIN, L. (1957) What is a Symbol Supposed to be? *J. Analyt. Psychol.* 2, 1.
3. HERACLITUS. *Fragmenta*. 45.
4. JAKOBSON, R. (1956) *Fundamentals of Language*. The Hague, Mouton.
5. JACKSON, J. H. (1958) *Selected Writings*. London, Staples Press. Vol. 2.
6. FREUD, S. (1953) *On Aphasia*. (Introduction by E. Stengel.) London, Imago.
7. NEGUS, V. E. (1929) *The Mechanism of the Larynx*. London, Heinemann.
8. GRAFF, W. L. (1932) *Language and Languages*. New York-London, Appleton.
9. STEIN, L. (1949) *The Infancy of Speech and the Speech of Infancy*. London, Methuen.
10. MACCURDY, J. T. (1928) *Common Principles in Psychology and Physiology*. Cambridge University Press.
11. WEEKLEY, E. (1930) *Adjectives and Other Words*. London, Murray.
12. MEAD, M. (1960) in: *Discussions on Child Development*. Eds. Tanner, J. M., Inhelder, B. London. Tavistock Publications. Vol. 4.
13. HOCKETT, C. F. (1958) *A Course in Modern Linguistics*. New York, Macmillan.
14. ROSS, A. S. C. (1958) *Etymology*. London, Deutsch.
15. MASON, S. E. (1963) Growing Out of Stammering. *Midland Medical Review*.
16. STEINTHAL, H. (1881) *Psychologie und Sprachwissenschaft*. Berlin, Dümmler.
17. MACNALTY, S. A. (1961) (Ed.) *British Medical Dictionary*. London, Caxton.
18. ALDRIDGE, C. H. (1963) Sign-posts in Diagnosis. *Signs, Signals and Symbols*. Ed. Mason, S. E. London, Methuen.
19. College of Speech Therapists (1959) *Terminology for Speech Pathology*.
20. DELIUS, (1757) *De Alalia et Aponia*. Nuremberg.
21. POTTER, S. (1960) *Language in the Modern World*. Harmondsworth, Penguin Books.
22. STEIN, L. (1925) Das Universelle Stammeln im Lichte der Vergleichenden Sprachwissenschaft. *Zeitschr. f. d. ges. Neurologie und Psychiatrie*. XCV.
23. STEIN, L. (1937) *Sprach- und Stimmstörungen*. Vienna, Weidmann.
24. STEIN, L. (1942) *Speech and Voice*. London, Methuen.
25. VAN GINNEKEN, J. (1933) Opening Address. I. Intern. Congress of Phonetic Sciences. *Arch. Néerlandaises de Phonétique Experimentale*. VIII/IX.
26. MÜLLER, M. (1882) *Lectures on the Science of Language*. London, Longmans.
27. SIMMS, R. E., HARTLEY, L. M., and GRADY, P. A. E. 1963. Three papers on Dyslalia in *Signs, Signals and Symbols*. Ed. Mason, S. E. London, Methuen.
28. HAAS, W. (1963) Phonological Analysis of a Case of Dyslalia. *J. Speech & Hearing Dis.* XXVIII/3.
29. MORLEY, M. (1957) *Development and Disorders of Speech in Childhood*. Edinburgh, Livingstone.
30. VAN RIPER, C. (1950) *Speech Correction: Principles and Methods*. New York, Prentice Hall.
31. CLARK, R. M. (1959) Maturation and Speech Development. *Logos* 2, 2.
32. HAAS, W. (1963) Signs and Signals, *Signs, Signals and Symbols*, Ed. Mason, S. E. London, Methuen.
33. ARNOLD, G. E. Studies in Tachyphemia. *Logos* 3, 1.
34. WUNDT, W. (1911). *Die Sprache*. Leipzig, Engelmann.
35. MASON, S. E. (1963) Informative and Manipulative Signs and Signals in Language Disorder. *Signs, Signals and Symbols*. Ed. Mason, S. E. London, Methuen.

36. RIPMAN, W. (1934) *English Phonetics*. London, J. M. Dent.
37. NEWEKLUFF, T. (1929) Über die Häufigkeit der Multiplen Interdentalität. *3rd. Cong. Int. Assoc. of Logopedics and Phonistracs*. Vienna, Deuticke.
38. DARWIN, C. (1890) *The Expression of the Emotions in Man and Animals*. London, Murray.
39. STEIN, L. (1918) Proceed. Austrian Soc. Exper. Phonetics. *Wien. Med. Wochenschrift*. 34.
40. FREMEL, F., and FROESCHELS, E. (1914) Gehör und Sprache. *Arch. f. Exper. u. Klin. Phon.*
41. STEIN, L. (1929) Sigmatismus und Innenohraffektion. *Monatschr. f. Ohrenheilk.* 63.
42. GLEASON, H. A. (1958) *Introduction to Descriptive Linguistics*. New York Holt.
43. SHERIDAN, M. (1948) *The Child's Hearing for Speech*. London, Methuen.
44. NADOLECZNY, M. (1926) *Die Sprach- und Stimmstörungen im Kindesalter*. Leipzig, Vogel.
45. KARLIN, I. W. (1959) Stuttering: Basically an Organic Disorder. *Logos* 2, 1.
46. ANASTASOPOULOS, G., DIACOYANNIS, A., and ROUTSONIS, K. (1958) Bégaiement et Epilepsie Temporale. *Rev. Neurol.* 99.
47. BARBARA, D. A. (1954) *Stuttering*. New York, Julian.
48. HAHN, E. (1943) *Stuttering*. Stanford Univ. Press.
49. HOEFFNER, T. (1912) Stottern als Associative Aphasie. *Zeitschr. f. Pathopsychologie*. Leipzig, Engelmann.
50. FROESCHELS, E. (1913) *Lehrbuch der Sprachheilkunde*. Vienna, Deuticke.
51. STEIN, L. (1924) Entwicklungsgeschichtliche Deutung der Entstehung des Silbenwiederholens. *Arch. f. Psychiatrie*.
52. FRY, D. B. (1963) Coding and Decoding in Speech. *Signs, Signals and Symbols*. Ed. Mason, S. E. London, Methuen.
53. ABRAHAM, K. (1942) *Selected Papers*. London.
54. STEIN, L. (1949) The Emotional Background of Stammering. *Brit. J. of Med. Psych.* XXII, Parts 3 and 4.
55. STEIN, L. (1948) A Note on the Treatment of Stammering. *Brit. J. of Med. Psych.* XXI, Part 2.
56. STEIN, L. (1951) On Talking or the Communication of Ideas and Feelings by means of mainly Audible Symbols. *Brit. J. of Med. Psych.* XXIV, Part 2.
57. STEIN, L. (1953) Stammering as a Psychosomatic Disorder. *Folia Phoniatica* 5, 1.
58. CORIAT, I. H. (1928) *Stammering*. New York Nerv. and Ment. Disease Pub. Co.
59. BOWLBY, J. (1960) in: *Discussions on Child Development*. Eds. Tanner, J. M., Inhelder, B. London, Tavistock Publications. Vol. 4.
60. PITRELLI, F. R. (1948) Psychosomatic and Rorschach Aspects of Stuttering. *Psychosomatic Quarterly*. XXII.
61. FÉRÉ (1905) Le Bégaiement Epileptique. *Revue de Médecine*. I.
62. LUCHSINGER, R., and LANDOLT, H. (1951) Electroencephalographische Untersuchungen von Stottern mit und ohne Polterkomponente. *Folia Phoniatica*. III.
63. STERN, H. in GUTZMAN, H. (1912) *Sprachheilkunde*. Berlin, Fischer.
64. MACLAY, D. T., MASON, S. E., and STEIN, L. (1960) Speech Therapy and Child Guidance. *Brit. Med. J.* p. 1054.
65. GILLESPIE, H. (1960) Speech Therapy and Child Guidance. *Brit. Med. J.* p. 1275.
66. DAVIDSON, S., and GIBBS, N. *ibid.*
67. ELLIS, M. J. L. (1963) Breakdown in Communication. *Signs, Signals and Symbols*. Ed. Mason, S. E. London, Methuen.
68. POLLITT, J. (1963) Children's Drawings—their value in therapy. *Signs, Signals and Symbols*. Ed. Mason, S. E. London, Methuen.
69. FENICHEL, O. (1960) *The Psychoanalytical Theory of Neurosis*. London, Routledge and Kegan Paul.

70. MAXWELL, R. D. H., and PATERSON, J. W. (1958) Meprobamate in the Treatment of Stuttering. *Brit. Med. J.*
71. KENNEDY, A. (1957) The Medical Use of Hypnotism. *Brit. Med. J.*
72. CHERRY, E. C., and MARLAND, P. (1955) *Nature* 176.
73. CHERRY, E. C., and SAYERS, B. MCA. (1956) *J. Psychosom. Res.* I.
74. WORCESTER-DROUGHT, C. (1954) Speech Disorders in Children of School Age. *J. Royal Inst. of Publ. Health and Hygiene.* July.
75. FROESCHELS, E. (1944) Psychic Deafness in Children. *Arch. Neurol. & Psych.* II.
76. KANNER, L., and EISENBERG, L. (1955) in *Psychopathology of Childhood.* Ed. Coplan, G. New York.
77. STERIADE, M., BOTEZ, M. I., and PETROVICI, I. (1961) On certain Dissociations of Consciousness Levels within the Syndrome of Akinetic Mutism. *Psychiat. et Neurol.* pp. 38-58.
78. ARSENI, C. (1961) Speech Disturbances caused by Tumours of the Supplementary Motor Area. *Acta Psychiat. et Neurol. Scandinav.* pp. 279 ff.
79. POLAN, C. G., and SPENCER, B. L. (1959) A Check List of Symptoms of Autism of Early Life. *West Virginia Med. Journ.* pp. 198-204.
80. LAWRENCE, M. M. (1960) Minimal Brain Injury in Child Psychiatry. *Comprehensive Psychiat.* pp. 360-369.
81. PUSTROM, E., and SPEERS, R. W. (1964) Elective Mutism in Children. *J. Amer. Acad. Child Psychiat.* Vol. 3, pp. 287 ff.

CHAPTER 3

Psychosis in Childhood

by MILDRED CREAK

HISTORICAL BACKGROUND

Mental illness in childhood is no new problem, and from the turn of this century attempts have been made to identify the condition under a variety of labels. Temporary mental disturbance in toxic states, associated with delirium, and the now very rare condition of juvenile G.P.I. resulting from inherited syphilitic infection, and intoxications such as lead poisoning, are mechanically caused and the aetiology is known even while the mechanism of resulting distorted function may not be fully understood. In this chapter these primarily toxic and neurological disturbances will not be considered; but in excluding them in favour of the larger problem of so-called "functional psychoses" it must not be forgotten that a great deal of research at the present time is aimed at unravelling the many aspects of disturbed biochemical function known to be present in schizophrenia.

In the earlier writings *dementia praecox* was the term most often used, implying a disease of the young leading to a general decay of mental capacity. It was equally clearly held that mental deficiency, as its name implies, was an inborn condition of mental inadequacy. The clinical effects, on brain function, of massive alteration in the equipment, received very little attention, and to some extent this is still true today. It was not until Bleuler's concept of the "split-mind" in schizophrenia received general acceptance that a great spurt forward was made, and it was seen that "dementia" (so-called) in *dementia praecox* might be something quite different from the dementia of senility, and that while functional and structural changes had many apparent similarities, yet the differences were even more arresting and significant.

The increase of interest during the last 50 years in the problem of juvenile schizophrenia is reflected in the literature. Reviewing mainly American publications from 1946 to 1956, Ekstein *et al.* (1958) note that there are approximately ten times as many papers as were published in the preceding decade. It seems unlikely that this reflects a spectacular increase in incidence; rather it suggests that in the earlier part of the century many cases were

seen from the angle of "dementia", and the "praecox" element was confused with inborn mental defect. This is not surprising in a condition where the "split" in personality organization occurs so early that development, still to come in the normal child, never takes place. The breakdown is less that of a formed (even if juvenile) personality than widespread disorganization of those elements which are essential to the formation of basic personality and subsequent normal function.

Alongside this recognition of massive personality disorganization goes the search for physical elements associated with the process. Sante de Sanctis (1908) coined the name *Dementia Praecocissima* and Kraepelin (1919) wrote of *Pfropfhebefrenia*, describing a condition where schizophrenic behaviour is grafted on to a primary condition of mental defect. Heller (1909) described a similar condition proceeding to gross deterioration and death in which post-mortem findings confirmed the presence of widespread cellular degeneration. These findings have been sporadically repeated in other cases, Zappert (1938), Yakolev *et al.* (1948), Creak (1963), although the cause of such degenerative changes remains obscure. Kanner (1957) discusses similar cases in early childhood, giving them the name of early infantile autism; this description will always be associated with his name, and was first published in 1943, and subsequently elaborated in many further clinical papers. He drew attention to the high proportion of cases occurring in families intellectually gifted but perhaps lacking in warmth and outgoing qualities. His emphasis on the role played by nurture is by no means universally confirmed. It may be that the highly endowed intellectual parent is more tolerant of deviation and understands it better, observes it without resentment, and so lets the position go too far. In such families there may also be more outside interests conflicting with the mundane and yet demanding task of bringing up a young family. Bender (1953) holds firmly to the designation of childhood schizophrenia; while a working party in this country seeking to clarify the diagnostic criteria agreed to use the term schizophrenic syndrome in childhood, indicating thereby that this clinical condition almost certainly included cases arising from a variety of causes. Goldfarb (1962) has brought more evidence to support the view that organic factors are highly prevalent. With all this it remains a very striking fact that this condition, known and described for over half a century eludes us as to aetiology, incidence and cure.

CLINICAL FEATURES

The simplest and most comprehensive description of this condition comes from Bender who describes it as a developmental lag affecting every aspect of biological maturation. Other writers have singled out different features, such as the defects in ego development and organization; and Mahler (1952) describes the autistic in contrast to the symbiotic child; both are in grossly

abnormal relationship with the parent figure, the former aloof, the latter clinging in an almost undifferentiated way as the term implies. Kanner in 1943 gave his description of the autistic child and his term early infantile autism bears out his view that many of these children are characteristically aloof, and almost from birth fail to relate to the world around them. More recently a study group has used a table of descriptive features, the so-called Nine Points (Creak *et al.* 1961) which aim to select and bring together the salient features present in psychotic children. Their description makes no pretence of being complete or all-inclusive, and is a guide and certainly not a grading scale.

Taking these points in order, how far can they be used as descriptive and explanatory in regard to this condition?

Point one puts first the child's inability, under all circumstances, to relate himself normally to people. The empty symbiotic clinging is included under this head since it is so clearly different from the expectant demand of the normal child. Point one must be seen as a corollary of Point two, since the child who is unable to differentiate himself into any sort of individuality is also unable to develop any attachment to others.

Point two draws attention to this apparent unawareness of his personal identity. The word "I" is never used, he echoes what is said to him and about him as if he saw no meaning in it. We may call this ego weakness but what we are describing is more akin to ego absence. He often seems indifferent at a simple afferent level to sensations which in a normal child would provoke a reaction (see Point five). These two points (one and two) are almost certainly interdependent, one on the other, and central to the dynamic pathology. The *third* and *fourth*, preoccupation with objects, and sustained resistance to change, are also emphasized by Kanner who speaks of the child's sometimes skilled, even obsessive, handling of objects as forming a contrast to his absence of contact and interest with persons. They elude him, while perhaps the object becomes real just because it can be passively manipulated into a position and retained there. Again,

Point five, behaviour in regard to abnormal response to sensory experience, may prove to be associated with his unrelatedness, and illustrates his failure to build up and retain any concept of the world outside as a result of his ordinary sensory experience. His inner world appears to be equally disorganized, and remote from his own awareness. The transports of anxiety shown so often by incessant screaming.

Point six may indeed stem from a tendency for the child to disintegrate into utter confusion every time his precariously maintained pattern of sameness is broken into.

Point seven calls attention to the frequency of speech disorders, ranging from mutism to repetitive and echolalic speech no longer functioning as communication. Naturally absence of speech, at the pre-school age when these children are usually brought for consultation, is equated with a "dis-

order" of speech, and some English authors, including Minski (1961) refer to this as the problem of the non-communicating child. Even when speech is not lost, it will tend to be used in a highly idiosyncratic way, with the echolalia determining the displacement of the personal pronoun. Children are heard to say "does he want any milk" in apparent response to that query instead of saying "I do (or don't) want some milk". Another child described a fright he had as "the foreign object on the wall". It took some time to unravel this as the reflection made by a passing headlight, when actually what frightened him was the bang of a backfiring engine. Differential diagnosis from a congenital aphasic condition may be a difficult matter of judgement, and a great many parents have brought a history that their child can talk if the word is somehow surprised out of him. One might guess that a "non-communicating child", surprised out of his defensive withdrawal into making a response, would thereby feel to himself more vulnerable since he is momentarily more involved. In this connection however it must be remembered that an organically determined confusion can appear as unreasonableness, simply because connections are not made; conversation with an aphasic can prove to be a disconcerting experience on both sides. With the mute psychotic child it is far more as if he had come to terms with life on a non-speaking basis; this is in contrast to the aphasic who has had experience of normal speech and is frustrated by the inadequate jumble that now comes out. The child who has never spoken may well be quite unaware of the significance of this noise that people make from time to time. However, many mute psychotic children appear to understand some speech, and will respond to firm command.

Point eight, motor disturbance, is not accompanied by clear-cut demonstrable signs. While reflexes may be very difficult to assess in these restless and over-active children there are no clear-cut signs such as an up-going toe or an absent abdominal reflex, while peculiar gesticulations are often seen these are never used to substitute for speech as in mime. The motility pattern may be changed in that primitive postures may persist together with a quite noticeable clumsiness. But there is nothing consistent about it: Soddy (1963) describes a boy who could "work a typewriter before he could tie his own shoes or feed himself satisfactorily". There is often a particular grace and prowess, which allows the child to balance objects or to spin things, as an end in itself. The precious object of Point three is flapped, or twiddled, in a stereotyped fashion, which seems to afford some gratification. The general tenseness is often shown by toe-walking, although unlike spasticity, the heel can be got to the ground, but only intermittently. The emphasis is therefore on erratic functioning rather than on any neurological disorder of muscular co-ordination. Bender (*ibid*) speaks of a peculiar plasticity in these children, and the muscle tone in the periphery is often diminished. Fingers and hand have a doughy softness, and the child is said to be "double-jointed". Yet he rarely falls and is disconcertingly fleet of foot. Even on some-

thing like a routine performance test, he may score well above average, not perhaps because he is quick to perceive the meaning of a particular jigsaw, but because he can put it together without doing so. He may balance a tower of bricks, but it does not represent a chimney to him. This discrepancy of function is again exemplified in *Point nine*, where, against a general background of low functional achievement, due to inner disorganization, are seen isolated instances of fantastic prowess. These are nearly always in the mechanical field, to do with moving things, as in mastering mechanisms, or in spatial perceptual fields, where the child may excel almost as if by accident.

ONSET OF SYMPTOMS

This is surprisingly hard to unravel. Where the onset is reported to be sudden, questions will often reveal what may constitute a special vulnerability. In other words, as so many parents have been heard to say “. . . now I look back I realize he was . . .”, and then may follow an account suggestive of a much earlier abnormality in relationships, but occurring at so young an age that only the retrospective history brings it out. Regrettably, very often a mother is herself struck by something distant and imperceptible in the baby which is ignored or denied by a doctor who sees before him a beautiful infant, apparently not significantly retarded. Fish (1961) points out how frequently this group have shown discrepancies in early motor development, and an earlier study by Bender and Freedman (1952) describes the early histories of 8 children observed from birth and subsequently developing the schizophrenic syndrome.

In our own series, of 100 cases, the early history as given by the parents suggests that development was generally thought of as normal in 42 per cent of cases. By this is meant that doctors, health visitors, relatives and friends, failed to raise any serious doubts. Development, as used here excluded speech because of its particular involvement in this condition, but took account of motor milestones during the first year. Inconsistent development occurred in 29 per cent of cases, and 29 per cent were noticeably retarded during this first year, but not to an extent to enable any firm diagnosis to be made.

More often than not, the child is first brought to the attention of the family doctor because of a failure to speak. This may lead to investigation as to whether the child is deaf, and a partial degree of tone deafness is not easy to exclude in a restless and inattentive young child. Parents who are pretty sure their child is deaf tend to be right in their judgment; most characteristically the intelligent deaf child mimes, lip-reads or at least watches the speaker's face, has difficulty in locating sounds even when they are loud enough for him to hear, and responds to some loud sounds or certain pitches of sound more readily than to others. The schizophrenic child is inattentive to speech: he often hears and responds to the crackle

of a cellophane sweet wrapping. He is seen to cover his ears, as if avoiding a disturbing stimulus. He ignores even very loud sounds and is detached quite as much in not listening or not attending as in not speaking. Nevertheless, it is important to remember that some degree of autistic withdrawal comes more readily to the child who is deprived of sensory perception, as in the deaf or the blind, or of intellectual grasp as in the severely mentally retarded child, than it does to a child who would make a fully adequate contact if he could.

The possibility of a true aphasia, either congenital or secondary to early cerebral damage, has to be considered, but may prove impossibly difficult to exclude until other of the more bizarre features suggest that this is a mental illness rather than a disability affecting comprehension only.

To distinguish the cases from those of a simple mental retardation should prove less difficult, although one might query whether mental retardation is in fact only "simple" because we know so little about it. The mentally defective baby is more generally slow, inert, apathetic and "too good". He may seem sleepy but more often is as if asleep but awake. Others may be pathologically hyperkinetic, jumpy and restless, with tense jerky movements suggestive of actual hypertonicity. This group is particularly liable to exhibit monotonous and apparently causeless screaming and minor stigmata may be seen by those who look for them. The psychotic infant is by contrast often a very beautiful child. His expression, perhaps a little vacant, is made to appear serene by his relative inattention. Even in the first months their mothers will note how empty is their response to human stimulus. They prefer to look at trees waving, they fail to call attention to their bodily needs, they don't mind being wet, or hungry, and they are not cross when they are tired. It is tragically easy for the inexperienced or the busy mother to leave them alone, "in a pram at the bottom of the garden" because that is how they are happiest. It is no surprise that many of them are reported as exceptional children. Others again show not only motor precocity, but an unusual skill in learning by rote. They not only echo what is said to them, but they seem able to memorize lists of names, or numbers, and it is some time before it is recognized that this is speech without communication. As development proceeds to a level when more personal response should be forthcoming, the child may be seen to cling senselessly to one parent (symbiosis) or may withdraw from contact with any one (autism). They often scream endlessly if frustrated in performing some routine or ritual, and fail to develop the normal social responses of a toddler. It is now almost certain that frustrating situations will arise. These may include a need for greater adaptation, as when a second child is born, or illness may involve a period of separation. Death may remove a well-tolerated indulgent grandparent, a change of environment arises in the normal course of family life. It now becomes apparent that where there is a lack of contact with parent-figures we should be re-assuring, and the personal failure in indi-

vidual ego development leaves this child exposed, as others are not, to the full impact of the traumatic situation. It is relatively rare to find that the supposed precipitant is indeed a fearful trauma; more often it is only one of the many awkward situations that most children learn to face and grow through. But with these children the only redress seems to lie in further and further withdrawal which now becomes manifest in all aspects of his life. Since he withdraws, he also fails to learn, and in so doing inevitably regresses further. Thus the developmental pattern now shows clearly the maturational lag referred to by Bender. It may take the form of a rapid and alarming regression, or it may be a suddenly noticed, or more gradual, failure to come on.

CEREBRAL DAMAGE

The role of cerebral damage has been variously assessed. Goldfarb utilizing clinical neurological investigations obtained under controlled conditions as part of a research investigation, noted a high correlation; rather more than half his schizophrenic children were rated as likely to have organic factors present. But the total number, 26 children, was a small sample to evaluate. This important and suggestive work is honest in admitting that estimates of such features as muscle tone, and gait, and reaction to sensory stimuli, in these wayward and unresponsive children, must remain an estimate based on an individual clinical judgment. Working in another context, Apley (1959) noted that something like 25 per cent of all children show an abnormal E.E.G. at some time. However, this group of psychotically disturbed children showed consistently a far higher incidence of abnormality. Here and there this could be related to the onset, later, of epilepsy. In the majority of cases, however, while being suggestive of cerebral pathology, it was by no means linked with a clearly demonstrable lesion. How confusing this may be can be seen by contrasting two cases.

One, published by Creak (1963) describes a boy (J. S.) of normal early development, born of elderly parents. His illness had an indefinite onset. Because he was institutionalized he was observed by doctors throughout his later childhood and early adult life. His deterioration appeared to be consistent with the schizophrenic diagnosis; but an accidental death revealed cerebral lipidosis. Causative—maybe—who knows?

Another boy (M. O'B.) a case hitherto unpublished and still alive, fourth child of elderly parents, was born with evidence of hemiplegic cerebral damage. His early childhood and development was naturally influenced by his physical handicap, by the devoted attention amounting to over-protection of the elder siblings and his parents, with a damaged brain possibly accounting for a mildly retarded intellectual development. He was perfectly able to cope with an ordinary school for physically handicapped children until his schizophrenic illness

began abruptly and appeared to result from a very traumatic hospitalization at the age of $7\frac{3}{12}$ years. There has been no recovery and his "deterioration" is strictly analagous to that of many schizophrenic patients. He is restless, fatuous and empty in his mental contact with the world around him. His neurological condition appears to be unchanged.

It will be recalled that many severely retarded children with known biochemical disorders constituting an organic basis for their abnormal mental function, are among those who most commonly show catatonic features, although the diagnosis is not thereby regarded as primarily a schizophrenic illness. Most authorities now concede that it is unlikely that the schizophrenic syndrome in early childhood is in fact a single uniform condition. Rather it can be seen as a major disorganization of the personal development in a group of young children. In some it can be seen as a condition existing from birth allied to but not synonymous with mental retardation. In others it may result from known and recognized failure in normal integrative growth such as is present in handicapped children where conditions interfere with the child's ability first to establish and then to maintain social, affective and cognitive integration with the world around him. In emphasizing the continuing need throughout early childhood to maintain this integration, we recognize that factors can intervene at many different levels to interfere with this integration, so that in some cases it may well be that active withdrawal constitutes a primitive (and essentially destructive) defence against trauma. There is still much that we may learn both as to these disintegrative factors, and the essential vulnerability to them of some children.

Here it may be of value to look at certain aspects of what might be called the "natural history" of the syndrome. A sample of 100 children was analysed in relation to the quality of their early development, and secondly as to the year of onset of definite symptoms. Neither of these points is straightforward in the sense already suggested, namely the lack of early recorded observations. The history is taken retrospectively and the diagnosis often is only reached through a period of observation. It is indeed likely that the illness has no definite starting point, but rather a point in history at which the immature adjustments to social well-being within the family become obviously at fault. Naturally this will vary with the position of the child in the family, with the observational skill of the parents, with their tolerance of deviation, and with the standards they demand. Their failure to observe unusual features may stem from ignorance, stupidity, or from an over-intellectualized tolerance of abnormality or from denial—not seeing what they fear. They may have been conditioned to overlook warning signs because, having noted them and spoken of them to a doctor, they have been falsely reassured, because the children look normal and may at first seem unusually bright. The question of relatedness towards an inexperienced mother is in any case a subtle quality both to observe and to describe.

Most parents can give a history of developmental milestones. Excluding standardized infant tests, but including normal observations of at least average parents as to dates for sitting, standing, walking, and habit training, the following observations were made:

Sample of 100 cases of schizophrenic syndrome

- (i) Development apparently within the normal range 42 per cent
- (ii) Development consistently retarded, at all levels,
but not severely so 29 per cent
- (iii) Inconsistent development, that is to say forward
in some aspects and retarded in others 29 per cent

Looking again at the pattern of onset of the illness, it was seen that in some children, development seemed to fade out at some point, not invariably associated with stress or positively adverse circumstances. In others there was a sharp regression, such as a previously thought-to-be-normal child ceasing to speak, losing abilities already gained such as habit control, and becoming manifestly a disturbed and detached person within the family. But in an even larger number the onset was held to be indefinite, either dating in some measure from birth as in the most highly autistic children or being noted in such a gradual way that no one was prepared to give a clear picture of the moment of onset. Nevertheless, many of these children have been reckoned as having for their date of onset the moment in time when those in closest contact, usually the parents, felt clear that something had gone wrong. It will be seen that the distinction between an indefinite onset and a failure to continue and maintain development can become a somewhat arbitrary distinction. In some, an indefinite but nevertheless abnormal pattern of early development is underlined by a sudden period of regression.

Onset of Illness

Active regression	Failure to maintain development	Indefinite or from birth
31%	18%	51%

Bearing in mind these uncertainties and that the onset is difficult to place, by far the greatest number, in these early cases, fall within the period of the pre-school years, sometimes called the “period of normal negativism”—a time often of stress and some tension between even the normal mother and child.

Year of Onset

Abnormal from birth	Onset during the years				5th	After the 5th year
	1st	2nd	3rd	4th		
13%†	7%	18%	43%	10%	5%	4%

† Of these thirteen children, two had normal milestones, three were inconsistent in developmental achievement, and 8 were sub-normal. But 1 among the 8 sub-normals is a young man now 25 years' old, leading a normal life and performing a skilled job. Certainly one or two of the others might be regarded as anomalous defectives with psychotic features.

MANAGEMENT AND TREATMENT

Here is a condition about which there is a surprising lack of clear and unequivocal knowledge. There is a suggestion of linkage with brain damage, direct or indirect, a so-far unrewarding search for biochemical anomaly. There is a suggestion that a certain highly intellectual kind of parent produces this kind of child; behind this there must lie a fear of inescapable genetic faults, and the end result is often tragically akin to the end result of the severely mentally retarded child. Running like a thread through all this is the observation that some of the children appear to fall into this group as a result of psychogenic damage, ranging from the gross failures in nurture called "Protophobia" by Bourne (1955) or the more preventible grief reactions described by Spitz (1947), but liable to produce similar end results. In a minority of cases, the precipitating factor appears to be the sort of psychological trauma to which many children are unavoidably exposed, and which most of them survive without psychic disintegration. And in a depressingly large number of cases we are left guessing as to what has gone wrong. The advocacy of any particular kind of management or treatment therefore starts with a disadvantage for if we are honest, we do not know what it is we aim to treat.

Empirically, measures which help the child to build up a relationship with his environment, above all with the human beings around him, may help him through knowing them to know himself as an individual. This "knowing" is not a matter of physical recognition, nor even of pleasure—displeasure experience and balance and involves more than the learning response condition by the balance of pleasure and displeasure. Something far deeper and more primitive constitutes the infant's awareness of his mother and of her role in satisfying first of all his biological needs, later to the achievement of satisfaction in a varying and ever-increasing range of activities. The normal child reaches this slowly evolving experience of himself as participant in the process, which has been called "the primary experience" by the Rudolf Steiner group of workers, who speak from extensive experience of remedial work with autistic children, and in their

usage mean something quite different from the Freudian concept of the primary process.

Winnicott (1960) discusses exactly this point in a paper on the parent-infant relationship. In it he speaks of "anxiety about annihilation" as the quality of anxiety attacking the not-yet-integrated ego of the small infant. Possibly in this particular group of severely deviant children, the failure of ego-integration brings with it the lack of any capacity for growth and maturation. When the child can only cling and demand, as in the symbiotic state, the mother eventually must reject unless she herself accepts a wholly static position. Even if she does so, the relationship cannot evolve and nothing comes of it. More often the rejection is mutual, almost automatic and inevitable, for without communication, awareness and understanding, growth and development inevitably lapses and tolerance becomes a *laissez-faire* if only to secure a limited freedom from anxiety and distress for parent and child. This will not prevent some of the parents of these children being particularly fond of them, perhaps because the strange situation evokes an awareness of need, perhaps because there is nothing left to do but love and let live. But other parents have complained bitterly of their inability to love this child, from whom no response comes, and who creates havoc in so many ordinary situations. These points need very real understanding if therapy is to get anywhere, either working at an interpretative level with the child, or aiming to do no more than alleviate the immediate reality problems by counselling the parents.

Among the most important factors will be early recognition. Much harm can be done by failing to appreciate what a mother is describing when all she complains of is that her child is in some way "different". She may notice his quiet passivity in infancy, his failure in smiling response, his indifference to play, his preoccupation with gazing past her at some special object which seems to attract his fleeting attention. If these signals are ignored, she may well deny her anxiety by pretending to herself, as she has been advised to do, that nothing serious is wrong or that the child will grow out of it. In doing this she may unconsciously condition herself to let pass opportunities of deliberately trying to *make* a contact—a condition not necessary in the normal child. Counselling at this stage can do little more than help with the mother to foster any latent capacity present. For the most part the opportunity to counsel the parents and to observe an autistic infant are rare; but the work of Fish (1957) may be a valuable source of clinical observations, so that Maternity and Child Welfare physicians can avoid missing such opportunities as arise.

As the figures suggest, it is more likely that advice will be sought in the toddler stage. A barely noticed regression may suddenly become florid on the birth of a sibling, or at some family stress which tends to accentuate existing difficulties. Again, the need for prompt recognition of the mother's problem and what it arises from need not be re-emphasized. It is perhaps

of value to single out one clinical sub-group where more can be accomplished. It would seem as if some children, less highly endowed than the average, or with recognized but minimal brain damage, may regress and withdraw as a defence against ordinary social demands which they are unable to meet. By an early recognition of this pattern, mothers can be helped to make very special efforts to counteract the tendency. Without such an effort, which, as was said earlier, is not needed by the normal child, the drift away from contact can become an established way of dealing with difficulty and of resisting progress (Creak, 1963).

Even for the normal 2-4 year-old toddler social pressure is inevitably increased. Conformity is not demanded so much as expected with a varying degree of chagrin or disappointment or even anger when no response is forthcoming. If, on the other hand, nothing is demanded, the work of doing everything for a 2-3 year-old child is far heavier than doing it for a baby, and parents become exhausted, especially when nights are disturbed as well. Nocturnal activity in the form of laughing, giggling, wandering or relentless screaming are very commonly met with. Some of these children spend hours head banging, cot-rocking, and pursuing some pattern of movement which seems to afford a degree of satisfaction. By day behaviour tends to even greater activity, pursued over a constricted and repetitive range. Such activity may involve physical risks, but these may be lessened by the child's uncanny skill in balancing and in climbing, not of course matched by an understanding of what to balance and where to climb. Play with other children is out of the question so that the child is always on mother's hands, preventing such necessary activities as shopping and cooking. Small wonder that if he can be quiet alone in his room, tearing up paper or laying his bricks in an endless line, there will be a great temptation to accept this for a compromise, overlooking how sterile such activity can become.

For these reasons, a Nursery School that can tolerate such a child, can be invaluable. Occasionally a similar success can come with a home-teacher or with a nursery group, of similar children which must be kept small and with high staffing ratio.

Therapy is always a difficult matter; psychoanalytic (play-analysis) techniques can seem to break through into the child's state of solitary withdrawal. The analyst will not receive much verbal material to interpret although even a non-speaking child will sometimes give evidence of being able to understand speech, provided he *can* hear and *will* listen. This is obviously the stage at which any physical interference with hearing or with verbal reception at a cognitive level must be carefully excluded.

Whatever means are found to help the child, including of course, residential treatment, they can only seek to establish some sort of relationship through which the child can begin to express his fears and his confusion, come to terms with his aggression, and work through to awareness of himself, and thence, at long last, to some measure of volitional control. This

being the basis of all therapy, it can be seen that conditioned control achieved by fear or by indulgence, can actually militate against the more complex step, which for long seems to be beyond these children, of real awareness, and the acceptance of necessary frustration.

DRUGS AND PHYSICAL TREATMENT

To an increasing extent, drug therapy has replaced physical methods of treatment in childhood schizophrenia. Indeed, in Britain physical methods have never found great favour. In the use of either insulin coma or E.C.T. it has often been suggested that the therapy works by a kind of mental and physical obliteration from which the patient is recalled by the devoted nursing, and in the case of insulin coma, by feeding, by his attendant. The circumstances of his treatment require this care and it is usual for patients undergoing such therapy to be in a unit where rehabilitation also plays a very active part. Bender advocates E.C.T. as a means of assisting the child back into a relationship and perhaps, in so doing, helping to obliterate reiterative patterns of behaviour which in themselves constitute a barrier and a means of withdrawal. Anell (1955) who had a unit making extensive use of insulin, has now abandoned this as a therapy in favour of drugs.

The advent of tranquillizers has meant that sedation can be accomplished without narcosis or even drowsiness. Drugs such as the monoamine oxidase inhibitors act partly as anti-depressants, while the effect of the phenothiazine group, certainly in some cases, seems to release a higher quality of functioning. It is as if in becoming quieter, the child is more able to notice himself and his surroundings and, in so doing, to become more interested, or at least more co-operative. He will also be less vulnerable to frustration and he may sleep better and eat better, and so be less fatigued; management thus becomes a more peaceful business.

Perhaps because this group of cases arises from different causes, they seem to react in a somewhat unpredictable way to chemo-therapy. What suits one child may have no effect, or an adverse effect on another, and the use of drugs tends to require a good deal of trial and error. It is particularly important to watch for minimal physical signs of toxicity and a little unsteadiness, even early Parkinsonian features, can be hard to detect in children who in any case do so many odd things and who don't relate by speech or action, with those caring for them. Perhaps for these reasons there is so far only limited enthusiasm for what these drugs can accomplish; certainly their value in this age group is less evident than in adults.

OTHER THERAPEUTIC PROVISIONS

Mention has already been made of nursery school and special nursery groups. In the former one psychotic child may mix with normal children

provided his oddities can be contained in the group. This is sometimes easier than might be supposed, perhaps because at home the environment has, over the years, of necessity "given in" to, that is to say accommodated to the child's odd ways. In nursery school he may discover a concealed capacity to conform a little more, and in so doing, to come into new discoveries (for him) in relationship.

But more often, the need for constant supervision in the face of common danger, such as the dash out into a busy road, make this impractical.

Certainly something can be gained from the nursery group devised for the autistic child. Their disability in relating is not always reflected in an equivalent disability in learning. Indeed, more than once, autistic children have been met who pick out letters and form words in an automatic, learned-by-rote, fashion, without making the further link of word with meaning. It is at this stage particularly important to try and analyse the nature of the language problem and to distinguish between a desire to communicate linked with an inability to discover the means, contrasted with the child who sometimes seems to reject out of hand the idea of communication. Sheridan (1961) discussing disorders of spoken language analyses in very simple terms, this most complex problem of the roots of the human need to relate by communication. In the psychotic group of children it seems likely that the inability to relate permits the language disorder to become established rather than the other way round.

RESIDENTIAL CARE

Both in the specially provided nursery group, later in schools for maladjusted children or in special units where these children come to be cared for, with others who are more obviously mentally retarded, and above all in the residential unit, the need is for a high ratio of staff to children. In large groups, particularly among the more boisterous and vocal type of child, withdrawal can easily be increased. No form of therapy, ranging as it does from custodial care to psychoanalysis, can succeed with this type of child unless in some measure it breaks down the barrier of apartness. Putting it in these terms must not be taken as meaning that the barrier has been erected by the autistic child. It exists because, for some reason, the earliest capacity to relate has not taken place. Thus in therapy, someone must be able to help the child into an experience in which at the simplest possible level a dawning awareness of the other person, comes to be experienced through the repeated availability of the therapist, whether house-mother or analyst. A succession of nurses and teachers, however well-trained, will not achieve this since they will miss being in contact with the child through many ordinary first-hand experiences. In all therapeutic units, the anxiety of the parents, who for years have battled with a most severe problem, will not be met by excluding them. The more intimate the therapy, the more impor-

tant it is that they too should be brought into it, through their own groups or their own sessions with the unit staff. They too need therapy of a kind, for they have become locked into a seemingly insoluble problem. Unless they can see this, and gain help in solving it, their apparent rejection or over-identification can become a barrier in the child's therapy. Their help is always needed, and it starts when as they themselves begin to understand the problem.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis in this condition is never an easy one. Children are accepted as immature and any reaction to stress in a child can seem to be immediately a sort of catastrophe, which has the beneficial side-effect of calling attention to needs and rallying support. Recovery can be as sudden and complete as the regression which preceded it seemed to be ominous. It is doubtful whether the psychotic episode, in response to crisis, is rightly included in this group. And yet instances, such as the case of M.O'B., occur where the differential lies not in the extreme stress, so much as in the adaptive failure in response. In other words, we look in the early history for a quality of vulnerability which is not marked by clinical features which can be measured. As pointers, however, we may consider the early passivity which is different from the sluggish development in the child who is uniformly retarded at all levels. In the mentally handicapped child there may be known genetic factors, or abnormalities in appearance, hormonal or biochemical failure which alerts the physician as to what he may expect. The psychotic child in repose looks normal and his mechanical skill, or aptitude in memorizing, may deceive us as to his mental development. While in some cases a reason, or at least a precipitating cause for the abnormality may exist, in quite a number the situation is rather that of seemingly normal or even precocious development gradually, or suddenly, fading out.

Naturally this leads to a search for physical factors, which on the whole proves disappointing. This may well be because we have not yet looked in the correct direction.

Perhaps what is most characteristic is the emotional disorganization coupled with an unresponsive lack of depth in both feeling and understanding which serves to increase the plight both of the disturbed child, and his parents. With so little response, what is the good of trying? Nevertheless, some of them do respond when efforts to achieve integration can be sustained and followed through—over years if need be. Perhaps our only encouragement in this arduous task is the recognition that without it, and especially in the situation of long-term segregation, the end results are so deplorable. Mental crippling at its worst is experienced with the profoundly regressed schizophrenic child or adolescent, who remains manneristic and yet empty, excitable without gaiety, anguished yet without any feeling for the victims

of his outbursts, or so it seems. His inner disorganization makes it impossible to enter into his life on his terms, and he knows no other.

REFERENCES

- ANNELL, A. (1955) *Acta. Psychoth., Psychosom., et Orthopaedagog.* Vol. III, No. 3, 193.
- APLEY, J. (1959) *The Child with Abdl. Pains.* Oxford, Blackwells Scientific Publications.
- BENDER, L. (1953) *Psychiat. Quart.* 27, 663.
- BENDER and FREEDMAN, A. M. (1952) *Quart. J. Ch. Behav.* IV, 3, 245.
- BOURNE, A. (1955) *Lancet*, II, 1156.
- CREAK, M. (1963) *Brit. J. Psychiat.* 109, No. 458, 84.
- CREAK, *et al.* (1961) *Brit. Med. J.* II, 889. Progress Report.
- CREAK, M. (1963) *Acta Paedopsychiat.* 30, 42.
- EKSTEIN, R. *et al.* *Schizophrenia.* Edit. Bellak, L. (1958) Logo Press New York. Chapter on Childhood Schizophrenia.
- FISH, B. (1961) *Am. J. Psychiat.* 117, 12, 1113.
- FISH, B. (1957) *Journ. Nerv. Ment. Dis.*, No. 1. 125, P. 1.
- GOLDFARB, W. (1962) *Childhood Schizophrenia*, Oxf. Univ. Press.
- HELLER, T. (1908-1909) *Ztschr. f. Erforsch. u. Behandl. d. jug. Schwachsinn.* 2, 16.
- JACKSON, L. (1950) *Brit. J. Med. Psychol.* XXIII, 87.
- KANNER, L. (1943) *Nerv. Child*, II, 3, 217.
- Ibid.* (1957) *Child Psychiatry* (3rd Edit.) Oxford, Blackwell Scientific Publications.
- KRAEPELIN, E. (1919) *Textbook of Psychiatry* (trans.) Livingstone, Edinburgh. Section on Dementia Praecox.
- MAHLER, M. S. (1952) *Psychoanalytic Study Child* 7, 286.
- MINSKI, L., and EVANS, M. J. (1961) *Journ. Ment. Def. Research.* Vol. 5, Pt. 2, 77.
- DE SANCTIS, S. (1908) *Folio neuro-biol.* 2, 9-12.
- SHERIDAN, M. (1961) *Arch. Dis. Child.* 36, No. 185, 11.
- SODDY, K. (1963) *Tredgold's Textbook ment. Def.* (Tenth Edit.) Edit. Tredgold, R. F., Soddy, K. London, Bollière, Tindall and Cox. p. 194.
- SPITZ, R. (1947) *Grief, a Peril in Infancy.* 16 mm. film.
- WINNICOTT, D. W. (1960) *Intl. Journ. Psycho. Anal.*, XLI, 585.
- YAKOLEV, P., WEINBERGER, M., CHIPMAN, C. (1948) *Am. J. Ment. Def.*, LIII, 2, 318.
- ZAPPERT, J. (1938) *Zeitschr. Kinderpsych.*, IV. 161.

CHAPTER 4

Problems in Assessing the Later Effects of Early Experience

by A. D. B. CLARKE

INTRODUCTION

Most people have at least a sneaking regard for the view that there is something special about early human learning, that this has a potent and disproportionate effect on later personality. Indeed those who testify to this thesis make strange bed-fellows—Freud, Watson, Ribble, Adler, Hebb, Ferguson, Klein, and Montessori are examples. While many consider that the first 5 years of life do have this potent effect, there is disagreement in ascribing to one period, or even to one type of learning or another, a particularly critical rôle. Klein, for example, believed that events during the first year had this function, whereas Freud's special emphasis was on the 3-5 year-old period. On the other hand, there is some agreement that learning depends on previous learning. As Hebb puts it, "all learning tends to utilise and build on any earlier learning, instead of replacing it, so that much early learning tends to be permanent". But beyond these rather broad views, and sometimes ingenious theories, there are relatively few certain facts; nativist and environmental psychologies have thus been able to flourish together happily, and in total disharmony, both groups usually ignoring the need to control for the other side's hypothesis. Cultural anthropology, however, makes it abundantly clear that the immense variety of human behaviour patterns can only be accounted for in terms of learning.

We must accept, then, that variation in human behaviour is at least partly determined by life experience; and experiences which have more or less permanent effects must, by definition, involve learning in a broad sense. Hence it is obvious that the rôle of early learning in man remains a fundamental problem for psychology and psychiatry. This chapter aims to show that, equally, we have hardly advanced beyond its fringe in the present situation. Moreover, as Yarrow (1961) puts it, "the significance of early infantile experience for later development has been reiterated so frequently and so persistently that the general validity of this assertion is now almost

unchallenged". The time seems ripe, therefore, for a re-evaluation of the evidence.

Both Hebb and also Piaget from a rather different angle indicate that early learning is *at least* foundational, that it involves well-marked stages which must be passed through in sequence before higher ones are attained. Freud, with his combination of instinct and learning theory, would have certainly subscribed to this view, but with Hebb would have urged that more than this is involved. The crucial question, to pose the analogy, is how far the foundations determine the later structure and dimensions of the building. Do they determine that a particular building must inevitably result, or can it be modified and re-structured as it proceeds? If early learning has the rôle merely of being the first course of bricks, then it is important. If the first course of bricks also determines completely the structure of all above it, then it is ultra-important. This, then is our problem.

PROBLEMS OF METHODOLOGY

Before turning to the evidence, it will be useful to outline some of the problems of research methodology in this field. Indeed, much published work is of such poor quality as to be scientifically inconclusive, so that an examination of common errors may also be useful.

Scientific method has been described somewhere as the application to data of *systematic doubt*; its essential features include the initial observation, hypotheses to account for the fact, the testing of each in a controlled manner and thus the step-by-step elimination of variables thought to be possibly relevant. Failure to follow such a procedure is bound to lead to error. Uncontrolled trials of the effects of new drugs are perhaps the supreme example, and reviews (e.g. Foulds, 1958; Fox, 1961) show clearly that the weaker the controls used in such trials, the more positive the claimed results. It seems that the human being is adept at finding what he seeks.

Turning from the general to the particular, it is now proposed to outline the various problems associated with attempts to build up developmental psychiatry and psychology:

1. Clinical Experience

The alleged link between early adverse experience and later personality disorder is often supported by appeal to clinical experience. The psychiatrist or clinical psychologist indicates that most of his patients have suffered unusual conditions of nurture; hence such conditions have initiated the maladjustment.

Two points need to be made. First, that clinical experience relates to a highly selected sample of the population, those who have both suffered early adversity and who exhibit disorders later. There may well be a substantial number of children who suffer the first but do not have the second.

Evidence for this view will be presented later. In the meanwhile, it may be a fair summary of the argument to say that clinically we are dealing with a particularly vulnerable group. Whether such vulnerability arises from genetic causes, or reflects common but minor brain injury, or arises from particular types of early adversity, or a combination of these, are open questions. The second point relating to clinical experience has a wider connotation and is discussed below:

2. Correlational Data

Much research is based upon correlational data, and certainly such information is a necessary starting point. Yet correlation does not necessarily imply a causal relationship between the variables. It is fairly likely, for example, that over the last decade there has been a substantial correlation between the annual consumption of bananas, and the issue of television licences. Obviously, here a third factor affects both.

Goldman-Eisler's (1950) paper is often quoted as an example in this connection (Eysenck, 1952). This investigator demonstrated a link between early weaning and oral pessimism in later life. In other words, one aspect of a constellation of child-rearing practices was selected in isolation from others. With the usual inter-correlation of such practices it is arguable that others than early weaning were responsible, or indeed a combination of them all. A more potent criticism can also be advanced. The environments of most children tend to be more or less constant during their development. Hence there is likely to be an intercorrelation of experience over many years. It could be argued, therefore, that what happens at the time of weaning is of no significance, but the correlated happenings at, say, age 4 may be causally related to adult personality, while the earlier ones have no causal link. In learning terms, early experiences tend continually to be reinforced. Thus if a correlation between early learning and some pattern of adult behaviour is shown, this could be the result of the later reinforcement rather than the early learning as such.

Or again, a child-rearing behavioural correlate—for example, "psychopathic mothering" (a somewhat loose term referring to mothers who show affectionless, rejective or neglectful behaviour towards their offspring) and psychopathic traits in the child—could both be due to the common influence of heredity, the third variable; or it could result from the distortion of the child's personality by this particular upbringing. Such a view could be tested by studying the careers of children of psychopathic mothers who had been adopted at birth by normal adopters, in contrast with non-adopted children of psychopaths, and with a further control group of adopted children with normal mothers. This may indeed be difficult to do, but is by no means impossible.

It is not enough, however, to leave such a finding merely as an established causal relationship. Scientifically we would want to know exactly what

processes in the mothering resulted in damage, and indeed what processes in the child are damaged by that mothering. Just so long as it is realized that correlational data represent starting rather than end-points in research then they are useful and essential, but as end-points they obscure our knowledge of processes.

3. Cross-sectional Versus Longitudinal Data

Cross-sectional studies must always be of rather limited value compared with longitudinal research. By definition, cross-sectional data are limited to the particular group and the particular measurement at one point of time. Knowledge of the dynamics of development then depend on inference based on inadequate early data on the group, often followed by unchecked forecasts of the future. Thus we might study a group of ten-year-old orphanage children, finding that they were on the average rather backward and emotionally unstable, presenting a rather poor general picture. There would commonly be rather little information concerning early history and parentage, and little light would be thrown on the reasons for differences between such children. Then, if we happened to believe that personality characteristics are relatively constant, we would predict a poor outcome for such children. To oversimplify a little, this is really what has happened in the study of deprivation (e.g. Bowlby, 1951). Clearly cross-sectional studies are necessary and useful in the preliminary study of any field, and economize in time (e.g. Dennis and Najarian, 1957; Dennis, 1960) but these should always be supplemented by longitudinal study as soon as is practicable. For a summary of such investigations see Bloom (1964).

4. Retrospective Versus Prospective Studies

Linked with 3 above, it is obvious that retrospective studies may fail to reveal subtle selective factors never noted in data collected for different and often administrative reasons. Again, hind-sight may produce an apparently plausible explanation for certain events, but as noted earlier, cannot reveal the number of those where the particular effect was not produced because for administrative reasons these never came to notice. Thus those children attending Guidance Clinics may be the vulnerable ones, and we can have little idea of the number less severely damaged by various forms of deprivation. But what little evidence there is (e.g. Howells and Layng, 1955; Douglas and Blomfield, 1958) suggests that this number may well be very considerable. Again, studies during adolescence of children with some early adverse background must take into account that adolescence is anyway an emotionally unsettling period for many children who have not suffered such adversity. The prospective study is, therefore, on all counts preferable to the retrospective study, although the latter must often be a starting point for later work.

5. *Sampling*

As always, a major research problem is that of sampling, with its corresponding danger of generalizing findings from one sample to another. There are, however, certain obvious safeguards to be taken: (a) adequate sample description. It is of little use, for example, to discuss findings on 100 adolescent high-grade defectives, without giving data about the varying aetiologies within the group, without a mention of length of institutionalization, without giving data on early experiences and so forth, and without mentioning relevant factors in the institutional regime; and (b) adequate sample size. There is nothing against the use of very small samples provided (1) the usual and more stringent statistical methods are used, and (2) the relationship of the small sample to the population from which it is drawn is carefully investigated. Samples must be chosen as nearly randomly as possible from the particular population in which the researcher is interested; and there are obvious and common sense techniques available for such sampling. It may well be that full investigation of a small group is far more valuable than superficial examination of a very large one.

6. *Controls*

It should be unnecessary to labour the need for controls, particularly after the discussion in the earlier part of this section, but at least one very eminent writer on deprivation in recent years has honestly admitted his misconception about the nature of a control group. Suffice it to say here that a control group should be as nearly identical as possible with the experimental group except for the variable with which the experiment is concerned. In the case of population which has experienced some dramatic environmental change, provided there is good documentation before and afterwards, the group may be used as its own control with a fair level of confidence.

7. *Semantics*

It is again an elementary truth that a given word does not always mean the same thing to different people, and that therefore definitions are important. Worse still, a given word may be given an unfortunate connotation and become a "dirty" word. Thereafter, whenever employed it carried with it that odour; an excellent example is the word "institution". Both the institutions described by Skeels and Dye (1939) or Klackenberg (1956) or by Bowlby (1956) were correctly so described. But this has led to the error of supposing that the qualities of those reported by Skeels and Dye would be replicated in that of Bowlby (an excellent tuberculosis sanatorium) and Klackenberg (a Swedish children's home with one member of staff to every three children) whereas manifestly they were not. Or again, as we shall see, in some circles the word "deprivation" has itself become synonymous with "emotional deprivation" or "maternal separation". Many similar words

which add to confusion unless operationally defined can be found in the literature. It is a matter of surprise that so few attempts have been made to classify different forms of deprivation (cf. Clarke and Clarke, 1960).

These problems have been considered at length because an understanding of them will assist the progress of later discussion, and because there exist so many imperfect studies in the whole developmental field.

ANIMAL STUDIES

It seems clear that the lower one goes down the phylogenetic scale, the smaller the part played by learning in development. With the dangers to the young organism so apparent in the animal kingdom, a short period of immaturity obtains, and it must be equipped with ready-made and unlearned responses. Correspondingly, if learning is to play any important part, it is biologically desirable for it to occur early and to be achieved with minimal practice. Hence one would expect to find early learning laying down fairly rigid patterns of behaviour which would persist over long periods. This expectation is fulfilled so far as imprinting in birds is concerned. Lorenz and Tinbergen and others have shown that certain stimuli trigger off unlearned patterns of behaviour at critical periods of development. In a sense this can be regarded as single trial learning.

This section will be concerned with work on mammals where some continuity with findings in the human field is to be expected, and a brief outline of some of the best investigations will be presented.

In a very useful review, which reveals the complexity of the problems in this area, Fuller and Waller (1962) outline two factors which must underlie the presumed importance of early experience. Firstly, such effects are considered by most to be far less readily reversible than those of later experience: "somehow or other . . . the behaviour mechanism jells at a certain age . . . the jelly is not rigid—but the essential form cannot be changed". Secondly, generality of reaction rather than specificity may characterize early learning. The adult rat, shocked for eating from a white dish learns only to avoid white dishes; the young rat similarly shocked may react with excessive emotionality in other situations. Fuller and Waller here express a view closely akin to that of McGeoch and of Hebb who implied that learning transfer must be more important earlier than later in life. Another matter usefully discussed by Fuller and Waller is whether early experience is important primarily because it is *prior* experience. Prior responses may pre-empt the nervous mechanisms and thus continue throughout life. Alternative responses are not tried when such prior responses are reinforced. Prior learning at any age must therefore be critical, and this may be the simplest way of explaining the effects of early experience. On balance these authors believe that young animals are indeed more sensitive to various kinds of treatment than older ones.

Beach and Jaynes (1954) review work on the effects of early experience in animals, considering such processes as sensory discrimination and perception, feeding behaviour, reproduction and filial behaviour, emotion and temperament and learning. In particular, they believe that animals which have had a large amount of perceptual experience early in life will prove better learners than those deprived of such experience. This point seemed particularly true of primates which depend so heavily upon visual cues. In summing up, however, these authors considered that at the time of writing much of the evidence was equivocal and of undetermined reliability. They suggest, however, three answers concerning the way in which early experience in animals influences later behaviour:

1. Persistence in Adult Behaviour of Habits Formed Early in Life

The fact that a young animal learns a particular response may "prevent the acquisition of other types of behaviour which would compete with the original one."

2. Early Perceptual Learning Affecting Adult Behaviour

This theory is quite distinct from the retention theory discussed under 1. Certain types of early experience are held to structure the organism's perceptual capacities which serve as a basis for subsequent. This is in effect a transfer theory.

3. Critical Periods of Development

Much work by the ethologists is relevant here, but Beach and Jaynes are rightly cautious in extending this concept to human development. This field has been recently reviewed by Sluckin (1964), who indicates the growing interest in imprinting in animals. Although he considers it unwise to concentrate mainly on early experience, he nevertheless stresses that in man there may be imprinting-like processes.

In the decade following the Beach and Jaynes classic review, an immense amount of work has been published on early animal learning in relation to adult characteristics. The summaries which follow are designed merely to sample this field.

Thompson and Heron (1954) and Melzack (1954) have reported the short- and long-term outcome of the effects of early restriction on puppies. The questions raised by these experimenters were whether early upbringing in a barren environment would have permanent effects on the dogs' intelligence, activity, emotional reactions and social behaviour.

At the age of 4 weeks, when weaned, each litter of Scottish terriers was divided into two groups. One group was reared in the ordinary way, either as domestic pets or in the laboratory; the other animals were each confined

to an opaque-sided cage consisting of a main compartment separated by a sliding door from an eating compartment. Thus the dog never saw its keeper. They were confined in this way for between 7 and 10 months, and upon release were given the same handling as the controls. Both groups were then studied.

The profound effect of this restriction was at once obvious; but the behaviour of these dogs was almost the opposite of what one might expect. They were exceptionally active and puppy-like. Several experiments shed light upon this finding. For example, each dog was put into a small room for half-an-hour to establish how much time was spent in exploration and how much in more passive activities. This test was repeated four times with seven normal control and eleven experimental animals. The controls rapidly became bored and quietly relaxed, while each experimental animal continued exploration for a much longer period. Older dogs became bored more readily than the younger, indicating that the experimental animals' reaction was a sign of immaturity. Similar tests several years later showed the same difference between the groups.

Detailed studies were made of the dogs' emotional behaviour, about three weeks after their release. Seven innocuous but emotion-provoking objects were at different times shown to the animals and moved towards them slowly in a zig-zag fashion (e.g. a live rabbit, a slowly swelling balloon, or an opening umbrella). The control subjects usually ran away from these objects without showing much excitement, but the experimental animals became highly agitated, jumping back and forth, and showing much excitement but little purposeful activity. They exhibited in fact a diffuse emotional excitement. These tests were repeated after a year, the normal dogs now showing playful aggression while the others continue to show diffuse excitement and a new, purposeful pattern of avoidance. They were in some respects at the same level as their matched controls a year earlier.

From harmless stimuli, the experimenters turned to painful ones. In such an experiment a toy car pursued each dog by remote control and gave an electric shock when it made contact. The normal dogs rapidly learned avoidance, and after six shocks the experimenter was no longer able to touch them. The dogs which had been restricted, however, behaved wildly. They averaged twenty-five shocks before learning avoidance, and even then became excited whenever they saw the test object. Moreover, their response to pain-producing stimuli was often bizarre; they frequently remained close to the object or toyed with it. The experimenters concluded that pain avoidance is by no means the simple protective instinct it was long thought to be. The appropriate response to pain, they write, is acquired at least in part by learning, and failure to learn in infancy apparently prevents the achievement of the calm, precise response of the adult animal.

Other experiments clearly showed the lack of intelligence of the previously restricted animals. Maze problems and delayed response situations showed the consistent superiority of the normally-reared dogs. Such retardation

appeared to be more or less permanent. In the social sphere, too, differences existed. The experimental subjects showed a general lack of interest in other dogs, as compared with their controls.

The authors conclude by pointing out that their studies have little specific bearing on human beings, for the environmental situations are drastically different. It is clear, however, that for normal development the organism needs varied sensory stimulation. Especially during the early, plastic period of life they must receive a good deal of stimulation; if they do not, they may remain forever immature (see Thompson and Melzack (1956) for a joint review of their studies).

A number of research workers have been concerned with the long-term effects of early handling or "gentling" of animals. Compared with controls reared under ordinary laboratory conditions, such animals consistently showed adult superiority.

In an outstanding series of papers, Seymour Levine has shed light upon such findings. His researches have sought answers to the general question of how the changing pressures and sudden challenges of early environment affect the behaviour and physiology of the adult animal.

A group of young rats were subjected to mild electric shocks each day, and compared with controls which were placed in the same cage but which did not receive shocks. A third group was left in the nest and not handled at all. It was anticipated that the shocked animals would exhibit emotional disorders at adulthood, as measured operationally by objective response to given situations. The main finding was that the shocked rats did not differ from the unshocked but handled controls. On the contrary, it was the animals left undisturbed in the nest that behaved with later undue emotion. The results of this research caused a re-framing of the original question; no longer was the experimenter interested in the effects of stressful early experience (which, after all, tends to be the norm) as in the absence of such experience.

A variety of stresses or different modes of handling were tried, but invariably the unhandled and unstressed controls showed both unusual behaviour and a deviant physiology. For example, Levine and Lewis (1959) compared at the age of 14 days rats which have received stimulation from manipulation by the experimenter and shock, with those which had been moved and shaken by mechanical means without direct handling by the experimenter. These groups were also compared with controls in terms of adrenal ascorbic acid depletion to 90 minutes experience of 5°C cold. No difference was found between experimental groups, these differing from controls in the rate of depletion. The data indicate that experimenter handling is not a major variable but that stimulation in infancy accelerates the maturation of the physiological response to stress.

As implied above, Levine's research programme has yielded both physiological and behavioural differences associated with early stimulation or

non-stimulation. Direct evidence of the former, for example, is also found in cholesterol studies of brain tissue. The higher cholesterol content suggests that maturation of structure parallels the maturation of function. Indeed, in all respects the manipulated infants exhibited a more rapid rate of development, opening their eyes earlier and achieving motor-co-ordination earlier. Their body hair grows faster and at weaning their body weight is significantly greater. It may well be, writes Levine, that some degree of stressful experience in infancy is necessary for successful adaptation of the organism to the environment it encounters later in life (for a general review, see Levine, 1960).

The most comprehensive series of investigations in the animal field of special relevance to the subject of early learning has come from Harlow in Wisconsin. His classic paper (1949) on the formation of learning sets criticized the *blitzkrieg* approach of the ordinary laboratory experiment, and suggested that the gradual build-up of learning abilities, studied longitudinally, was likely to be more rewarding. Evidence was presented showing that the monkey slowly achieved a flexibility of response which enabled it to tackle new problems more and more easily.

Harlow's well-known experiments on the rearing of infant rhesus monkeys with artificial "mothers" made of cloth or wire has shown that the primary factor in the infant's attachment is contact stimulation as opposed to feeding behaviour. For us, however, there is greater interest in the adult outcome for monkeys reared under these early conditions.

Harlow (1963) has reviewed his recent experiments and gives information on the maternal behaviour of four monkeys, three of which had been reared on cloth surrogates and one in a bare wire cage. With their own infants these "unmothered mothers" showed behaviour strikingly unlike that of the normal monkey. They were either completely indifferent or violently abusive to their offspring. One of the things, writes Harlow, that would unnerve the experimenters was to watch the desperate efforts of these babies to make contact with the abnormal mothers. "She would beat them and knock them down; they would come back and make contact; the mothers would rub their face into the floor; they would wriggle free and again attempt to make contact. The power, insistence and demandingness of the infant to make contact and the punishment the infant would accept would make strong men reach the point that they could hardly bear to observe this unmaternal behaviour."

The adult sex behaviour of unmothered monkeys was also investigated, and the effects of different types of early experience were evaluated. The following permutations of early experience existed: babies reared on wire surrogates; on cloth mothers; on cloth mothers but given short daily playroom experience with other infant monkeys; infants reared with real mothers in the play-pen situation, and others with cloth mothers in the play-pen situation.

29/5/63
 R. Spence

In the case of the infants reared in isolation or on cloth mothers and which had never had an opportunity to play with other infants, none of the males has ever bred. Although all normal signs of sexual development were present, these monkeys were described as heterosexually hopeless. It seemed that a similar situation obtained for the females. Many attempts to breed from these failed, although ultimately impregnation was achieved. With the monkeys reared by real mothers in the play-pen situation, sex behaviour developed normally. With those reared on cloth surrogates but given opportunity to play with other infants, normal sex behaviour was apparent.

Harlow concludes this review by stating that normal sex behaviour both in the male and female is greatly facilitated by a normal mother-infant relationship but that the importance of another affectional system, the infant-infant, should not be underestimated.

In these studies, then, we have a clear indication of the adult effects of severe and prolonged early adverse experiences. Indeed, Mason and Riopelle (1964), reviewing the whole field, believe that the severity of such effects is roughly proportional to the amount and duration of restriction. Other useful reviews are by Thorpe (1961), Rheingold and Stanley (1963) and Maccoby (1964). Nevertheless some at least of these studies fail to make clear what happened to the animals following the period of experimental deprivation and before follow-up in adulthood. Were some living in conditions which further reinforced the earlier effects, and is such fixation of disturbed behaviour as inevitable as it seems? The answer is not by any means clear, but in a well-controlled study by Woods (1959) it was shown that the effects of early sensory and motor deprivation could be markedly reduced by subsequent exposure to an enriched environment. Later as well as early experience is shown to be important for problem-solving behaviour. A rather similar note of caution is offered by King (1958) who outlines seven parameters relevant to the effect of early experience upon adult animal behaviour. He points out that most procedures run the risk of confounding the variables of early and late experience because the later may enhance or inhibit the effect of the earlier. King concludes that, until the effects of the seven variables are further analysed, it is only possible to accept the general thesis that some early experiences affect later behaviour.

The animal studies sampled here are in fair agreement in showing the persistent effects of early experience. This early experience was, however, extremely adverse and of relatively long duration. Indeed, what many of these subjects experienced could not be survived by human infants in natural calamities. The findings are thus of interest in suggesting lines of research rather than necessarily having an immediate bearing upon man. Indeed, their relevance to human development could at this stage be either pressed or disputed, although phylogenetically one would expect work with the lower primates to be significant for psychiatry and human psychology. On

the other hand, as mentioned earlier, if learning is to play an important part during animal development then it must occur as early and as rapidly as possible. For ourselves, however, with a long period of protected immaturity, some flexibility of response would seem desirable. Teleologically, therefore, human early learning ought not to have an unmodifiable effect. We shall now see how far the data fit this hypothesis.

HUMAN STUDIES

Many studies purporting to show the potency of early human learning do no such thing. As pointed out in the Introduction, most children are reared in more or less constant environments and hence early learning is continually reinforced. Thus, for evaluating the later effects of early experience we need to study those quite rare cases where such learning has not been reinforced, that is, children in whom major life change has occurred. Studies of various forms of deprivation are therefore particularly relevant, but in such cases the effects of early learning might well be underestimated because the major change referred to is nearly always a change to something better. And the better environment may well militate against the personality distortions induced earlier.

Although there are dozens of papers on deprivation, we are confronted with the sad fact that most do not meet minimal criteria for scientific acceptance. Nor is it possible to make the excuse that human beings are too complex for scientific investigation, for the few studies which do conform to proper criteria in fact yield definite and consistent information.

Discussion will be mainly confined to two obvious areas; first, the effects of short periods of adversity breaking into normal early development—for example, entry into hospital, and second, the results of environmental impoverishment, neglect or cruelty in the early years. These both represent unusual early learning experiences of different durations.

The Effects of Short Periods of Adversity

First, then, short periods of adversity. Schaffer's (1958) work on infants who had spent about two weeks in hospital is a model here. Following up a large group on their return home, he found different reactions according to age. Most of those infants below 7 months showed a strange scanning behaviour, letting their eyes roam continually over every object in sight. This behaviour was very difficult to break through. By a further ingenious experiment Schaffer was able to show fairly conclusively that this global syndrome, as he called it, resulted from the perceptual monotony of the hospital. Most of those above 7 months showed the much more familiar over-dependent syndrome, characterized by clinging, and excessive crying when the mother was out of sight. Much of this could have been predicted from Piaget's theory which emphasizes the new cognitive structure at about

TABLE 1. SYNDROMES TYPICAL OF 72 PER CENT OF INFANTS FOLLOWING HOSPITAL EXPERIENCE
(After Schaffer, 1958)

Type	Global	Over-dependent
Features	Extreme preoccupation with environment, "scanning", little vocalization	Excessive crying when mother out of sight, clinging, fear of strangers
Age range	Below 7 months	Above 7 months
Average duration	3 days	14 days
Range	20 min-4 days	1-80 days

TABLE 2. PRE-HOSPITAL ADJUSTMENT AND THE REACTIONS OF CHILDREN TO HOSPITAL
(Data summarized from Prugh *et al.*, 1953)

Control group (Orthodox conditions)				Experimental group ("Humanized" conditions)			
Pre-hospital adjustment		Reactions to hospital		Pre-hospital adjustment		Reactions to hospital	
Maximal	56%	Minimal	8%	Maximal	34%	Minimal	32%
Limited	42%	Moderate	56%	Limited	54%	Moderate	54%
Inadequate	2%	Severe	36%	Inadequate	12%	Severe	14%

the seventh month. And Spitz, in drawing attention to the eighth month anxiety, is making much the same point. But what is of particular interest here is that the adverse effects faded with time, as Table 1 shows.

Prugh, Staub, Sands, Kirschbaum and Lenihan (1953) have studied reactions of children to hospitalization. A control and experimental group of fifty children each, the majority aged between 2 and 10 years, were selected. Most of these were admitted to hospital for fairly short periods and for relatively acute illnesses. Matching of the two groups was reasonably successful except that the control group contained before admission a rather larger number of well-adjusted children.

The control group experienced ordinary ward routines and were assessed before, during and after their hospital experience. The experimental group, however, enjoyed special ward routines with visiting by parents at any time, psychological preparation, and support for unpleasant procedures, special play activities and so on. Table 2 shows some of the main results; it should be noted that Prugh's terms "maximal, limited, inadequate" for pre-hospital

adjustment and "minimal, moderate, severe" for reactions to hospital, are really synonymous.

It will be seen that the control group showed a shift in the direction of moderate and severe maladjustment under orthodox conditions compared with pre-hospital adjustment. The experimental group under special conditions, however, showed a similar pattern of maladjustment and adjustment before and during their hospital experience. The younger children were more disturbed than the older, and there was a correlation between previous adjustment and adjustment in hospital.

So far as follow-up is concerned, 92 per cent of the controls and 68 per cent of the experimental group showed significant disturbance of behaviour immediately after discharge. Three months later, the figures had dropped to 58 per cent and 44 per cent respectively. After 6 months 15 per cent of the controls and none of the experimental group showed continued disturbance. The authors have demonstrated without doubt the psychological value of the "humanized" hospital. This study is, like Schaffer's, concerned with a short period of unusual and unpleasant experience, and once again we see the immediate and long-term effects of such modification of behaviour. Indeed, we can now summarize the situation as follows: short and intense learning experiences have an immediate effect upon the child, but when they cease (i.e. are not reinforced) there is a gradual fading of such effects, the rate and amount of such fading being roughly proportional to their intensity and duration, and inversely to age and amount of previous maladjustment. For the previously maladjusted child the hospital experience in the Prugh study is a reinforcer which is further reinforced by return to the conditions which originally gave rise to the maladjustment. Even so, experiences at home are clearly less traumatic, so that the fading of reactions in the control group is less rapid and complete. These data, therefore, yield no support to the theory that the single traumatic incident early in life has long-term effects upon development. (See also Ainsworth *et al.*, 1962, who believe, however, that there may remain "hidden" impairment that prevents the reversibility from being complete.)

Prolonged Early Experiences

The main sources of evidence for the effects of prolonged early experiences may be found in the better studies of the long-term outcome of early institutionalization. The first people to draw attention to the harmful effects of early institutional upbringing were psycho-analysts such as Spitz, who documented what they saw to be highly abnormal personality development in infants deprived of maternal care and attachment. Their own theoretical background led them, in the writer's view, to overlook the unusual material and social factors present in the institutions, which a careful analysis of their papers will reveal. These children not only lacked maternal care; they lacked care. (Cf. Wootton, 1959.)

Of the several studies from the nineteen-thirties and early nineteen-forties, one of Goldfarb's (1943) is perhaps the most relevant and suffers less than the others from methodological weaknesses. This research was concerned with the long-term effects of early institutionalization. Fifteen children aged between 10 and 14 years had been placed in an institution at the average age of 4 months, remaining there for about three years and thereafter being transferred to foster homes. A control group of fifteen foster children who had always lived with families was equated as far as possible on the major variables. The history of the true fathers was lacking but the educational and occupational histories of the true mothers showed them to be significantly superior to the foster mothers. Goldfarb's general conclusion based on detailed data which he presents, was that institutionalization for the first three years of life results in wholesale blunting of cognitive and affective development, which was not made good by the time early adolescence had been reached, in spite of the better situation of the foster homes. There existed, for example, a twenty-two-point difference between the average I.Q.s of the two groups. Differences in educational attainment, disavouring the ex-institution group, were equally impressive. Although there is little doubt that this is one of the best of the early studies, its interpretation is not unequivocal. It is not clear, for example, why the institution group were retained for so long before being fostered. This suggests that there existed selective differences between the groups at an early age, and it may well be that institutionalization as such was not the most relevant variable. In addition, even accepting long-term effects of early experience, the oldest child was only 14 when studied. We shall return to this point later.

The findings of Trasler (1960) have sometimes been taken as confirmatory of Goldfarb's researches. This worker investigated the causes of failure in foster home placements which in Britain appear to amount to between a third and two-fifths of all long-term placements. The technique employed was an intensive and detailed study of a limited number of cases and the collection of statistical information; the author regarded his study as exploratory and believed that his findings must be interpreted with caution. More than three-quarters of those children admitted into public care before the age of five years, who subsequently failed in foster homes, spent at least half of the first three years of life in institutions whereas only 40 per cent of the successful placements had this background. No straight-forward interpretation is, however, possible for the following reasons: (1) as Trasler implies, it is not known what selective factors delayed the different proportions of institutional children from being adopted; (2) there is little evidence concerning hereditary factors, and (3) above all, an examination of the data presented by Trasler shows that forty-four out of fifty-seven unsuccessful first placements were known to have been with foster parents who were regarded as unsuitable in a variety of ways. Hence disturbance

induced by early institutionalization may have been cumulatively reinforced in those foster homes. Moreover, comparable data regarding the foster homes of the controls, the successful placements, were not presented. If, indeed, these were better parents it is small wonder that their foster children were better adjusted. The institutional background in the early years may thus have been of small relevance by itself.

A well controlled study by Bowlby and his colleagues (1956) has demolished or modified some of Bowlby's earlier conclusions. Sixty children reared in a good but orthodox tuberculosis sanatorium for an average of 18 months below the age of 4 years were followed up between the ages of 7-13 years. As a group their intelligence was average, as was their capacity for friendship. They were, it is true, more maladjusted than their controls, but, according to these authors, maladjustment in ordinary children is common (42 per cent), and their excess maladjustment (63 per cent) might equally be an effect of the sort of homes from which the tubercular child has come—often overcrowded and with a background of death or disablement in close relatives. Contrary to expectation, these children had not become affectionless, warped characters of dull intelligence. In other words, unusual and seemingly adverse experiences of long duration during the first few years had not diverted the whole course of development subsequently in most cases. One must conclude that the apparent contradictions between Goldfarb and Bowlby *et al.* (1956) are resolved if one takes into account the great differences between the institutions.

A case of extreme social isolation has been reported by Davis (1947). One might be reluctant to pay too much attention to details of a single case study were it not for the fact that the report is carefully documented, and that there also exists an independent article by Mason (1942) giving corroborative details. This illegitimate child was locked in an attic with her deaf mute mother until the age of 6, when the mother and daughter escaped. Though severely rachitic and mute, and functioning at low-grade imbecile level initially, she was taken on by a University clinic. Two months intensive effort by Dr. Marie Mason had her speaking in sentences, in 9 months she was reading and writing, and in 16 months her vocabulary was 2000 words. Her I.Q. trebled in 18 months, and by the age of 8 she was considered normal. A final follow-up at age 14 confirmed this conclusion. But this girl had at least been with her mother in the silence and darkness of the attic. Another similar case noted by Davis (1940) failed to progress but the maternal history suggested congenital deficiency, and, moreover, the child received no skilled treatment.

Some of the most careful studies of the effects of early institutionalization have been carried out by Dennis and his colleagues in the Middle East. For example, Dennis and Najarian (1957) studied infant development in a foundling home in Beirut, Lebanon. Here, owing to inadequate financial support, little more than essential physical care could be provided. The

Wild
Boyok

authors reported on the developmental status of two groups of children, those between 2 and 12 months of age, and those between $4\frac{1}{2}$ and 6 years of age. This study will be presented in considerable detail because of its unusual interest and because of the care with which it was carried out.

The foundling home was run by a religious order of nuns; all children are taken into care shortly after birth, and came either from the order's maternity hospital or were found on the doorstep of the institution. The vast majority of the children were illegitimate. The home possesses an excellent new building and equipment is modern, but it exists on a meagre and inadequate income. Hence, understaffing is a direct outcome; there is only one person directly concerned with child care to every ten children. This results in hurried procedures and long hours of work for the staff.

During infancy individual children were not assigned to particular attendants, although at later ages each group was assigned to a supervisor and an assistant. During the first 2 months the baby was taken out of his crib only for his daily bath and change of clothes. For feeding, the bottle was propped up on a pillow and the nipple placed in the baby's mouth. All procedures were hurried and no mothering could be given. The child was tightly swaddled until about 4 months old, although the hands were freed after about 2 months. Cribs were linen-sided and the child's perceptual field was consequently very limited.

At the age of 4 months, the infant was placed in a larger crib and moved to a room for older children, but for several months his care remained similar. When ultimately the child had advanced sufficiently to attempt to climb out of his crib he was placed with several others in a play pen or in a baby chair.

Scheduled feeding was given and at about 4 months the first solids were introduced. Efforts were made to give special feeding to those who were not gaining weight properly but average weight was appreciably below what is ordinarily considered desirable.

From about 1-3 years the children played in groups of about twenty with a supervisor and assistant, but play equipment was very limited. From 3-4 years much of the day was spent seated at small tables, the children being more or less occupied with slates, beads and sewing boards. At 4 years, kindergarten training was commenced with an emphasis on naming things, writing, reading and numbers. Instruction in both Arabic and French was given.

Dennis and Najarian used, as a comparison group, children from the poorer section of the Beirut population who were tested at the Baby Clinic of the American University. For infants in both groups the Cattell infant scale was used and at later ages ($4\frac{1}{2}$ -6 years) the Goodenough draw-a-man test, the Knox cube test and the Porteus Maze Test. The infant tests were given to forty-nine of the foundlings and to forty-one comparison cases.

The results showed that at the 2-months age-level little difference existed between the foundling and the comparison group, the mean scores being 97 and 107. These means were based on only eight cases each, and the difference was not significant although of course in the expected direction. Beyond the age of 3 months, however, all the institutional mean scores were significantly lower than those of the comparison group or the normative group. For the 3-12 month period, the mean institutional score was 63 (S.D. 13) while the comparison mean was 38 points higher (101, S.D. 15). Overlap of scores was not great; all comparison subjects scored above the institutional mean, and all foundlings were below the mean of the comparison group.

The authors then turn to the results of testing children between 4½ and 6 years of age. They first indicate that there was no reason to believe that these children earlier in life were in any way different from the groups discussed above; no change in admission procedures had occurred during recent years and the two age groups must therefore be considered genetically similar. Moreover, no changes in methods of child care had occurred during the previous six years.

Goodenough and Porteus Maze D.Q's were 93 and 95 respectively, with standard deviations of 20. Knox Cube results could not be given in full because some of the subjects scored below the norms, but the mean was probably a little higher. Thus it must be concluded that on these tests the retardation among the 4- and 5-year-olds is very slight. (The authors report that on the Goodenough test Lebanese children at 5 years make scores equivalent to American norms.)

*90% of
100% of
average*

In summary, the data indicate normal development in the foundlings during the second month of life, considerable retardation between 3 and 12 months, and almost normal average development between 4½ and 6 years of age. The authors believe that their results can be fitted into a coherent view. They believe that no work has indicated adverse effects of stimulus deprivation during the first 2 months of life; even Spitz had reported above-average scores on the infants whom he had investigated. Two alternative explanations are relevant here; either post-natal behavioural growth during the first 2 months is due only to neural maturation, or, while sensory experience is essential for development, the swaddled and "unmothered" infant had received sufficient for normal development at this period. The authors favour the latter hypothesis.

The poor showing of the infants between 3 and 12 months of age is almost certainly a result of their restricted experience. Most of the Cattell items require manual skills and adjustment to visually presented objects, and the circumstances of life of these children had given them little opportunity for learning these basic processes. The authors go on to consider apparent discrepancies between the results of this study and others, and refer particularly to the work of Dennis and Dennis (1951) and to many

researches reported by Spitz (1945; 1946a; 1946b). They reach an important conclusion in stating that infants with restricted learning opportunities will be normal on "observational" items (e. g. the noting when the child first laughed, first brought hand to mouth, etc.) but will be retarded on "test" items which require the infant to respond to a particular stimulus. The present study and the earlier one by Dennis and Dennis are thus seen as different sides of the same coin.

The Spitz studies show some similarities with this research. In particular both agree that environmental conditions can depress infant test scores after the second month of life. There is, however, a disagreement over interpretation; Spitz attributes the retardation in his infants to a break in mother-child attachment. The foundlings of Dennis and Najarian never had the opportunity of forming emotional ties, and thus the authors consider that the interpretation of both Spitz's data and their own must be in terms of restricted learning opportunities. These latter are not an inevitable accompaniment of institutional upbringing if the adult-child ratio is 1 to 2 or 3, and Klackenberg (1956) is cited in this respect.

The authors finally discuss the findings with the 4½-6 year-old children. They believe that had certain tests (e.g. of language development) been applied then certain areas of retardation would have become evident. But it can be stated that the retardation found to exist at 3-12 months of age did not produce a permanent and general intellectual deficit which might have been expected to reflect itself in lowered Goodenough, Porteus Maze and Knox Cube scores. The assumption that early retardation produces permanent retardation is thus not supported by this study.

A further paper by Dennis (1960) is also of very great interest, but once again is mainly concerned with motor development. Both studies were superbly controlled, but one wishes that it had been possible to provide wider areas of assessment. It seems very likely, anyway, that motor development is the most resilient process following artificial restriction, and that one cannot, therefore, expect recovery of other processes to be so dramatic. Moreover, the very processes which are of greatest interest in connection with current views on the importance of early experience were not assessed.

It is well-known that cruelty and neglect may have very profound effects on young children, but there have been rather few systematic studies. An exception is Hilda Lewis's (1954) research on 500 deprived children in the county of Kent who had been sent to a reception centre. She showed the linkage between the child's background and the form of maladjustment exhibited, but Table 3 shows even more interesting data.

This shows the children's condition as assessed on reception and on follow up. In spite of gross deprivation, 40 per cent were in good or fair psychological condition at reception, and, even more striking, this had increased to 75 per cent 2 years later. Not all children are equally damaged

TABLE 3 ONE HUNDRED CHILDREN INCLUDED IN SPECIAL FOLLOW-UP INQUIRY

(After Table 50, Lewis, 1954)

Condition of children	At reception	2 years later
Good	15	39
Fair	25	36
Poor	39	22
Very poor	21	3

by similar experiences, and once again a fading of the effects of adversity is shown to occur.

Wittenborn (1956), a most careful worker, failed to find differences in outcome between those adopted in the first few months of life and those who spent their first year in rather poor institutions. He felt unable to draw conclusions on those who had spent more than their first year in this way, because of the complex selective contamination of all variables. He indicates that damaged children may well have been omitted from his study, and does not deny that long-term damage may arise from institutionalization during the first year but, he says, "our data do provide one indisputable and practically important fact: children who have suffered these experiences are not invariably harmed".

Some of the most excellent investigations in the whole field have been reported by Rheingold (1956) who makes a similar point. She studied, within a good babies' home, the effects of 8 weeks' mothering by one person in contrast with multiple mothering which turned out to involve thirteen persons per baby per day. The babies with one substitute mother had much more done for them than the others, who were more often on their own. Differential effects in terms of sociability towards the experimenter were increasingly apparent, but for us the main interest lies in the fact that (a) all the babies in the institution, regardless of the type of mothering, tended to be friendly to all comers, and not to develop the usual sensitivity and the fear response to strangers, and (b) on follow-up about a year later, when the children were either in foster, adoptive or their own homes, no great differences existed between the two groups (Rheingold and Bayley, 1959). Even though all the children had had a major separation and had been cared for in an institution for the first half of their lives, they were healthy and of normal development, appearing more friendly to strangers than children brought up in their own homes. In no way did they resemble the children from the classic studies allegedly on the effects of maternal separation but in fact probably mirroring the effects of grossly impoverished early environments. Rheingold's evidence shows at least that unusual learning

experiences for much of the first year do not greatly alter normative development at that time or later, and this again is in line with Bowlby (1956).

Gardner, Hawkes and Burchinal (1961) have reported an excellently controlled retrospective study of twenty-nine children aged between 8 and 17 years, who had experienced an average of 5 months' care by 20-30 house mothers during the second half of their first year. These infants lived during that period in a University home management house prior to local adoption. Various measures were made in such areas as school achievement, personal and social adjustment, anxiety level and response to frustration. In none of these variables, which were compared with similar measures derived from matched control subjects, could differences be attributed to differing early experience in the first year of life.

Our own data (Clarke and Clarke 1954, 1959; Clarke, Clarke and Reiman, 1958) from longitudinal studies of very deprived and retarded adolescents and adults who, following *gross* deprivation in the form of neglect or cruelty, were further deprived in often poor institutions, are also relevant. And here we encounter yet another variable—length of follow-up. There are only two or three properly controlled studies with really long-term follow-up. We found evidence of recovery processes reflected in, among other things, I.Q. increments in late adolescence and early adult life, (See Fig. 1).

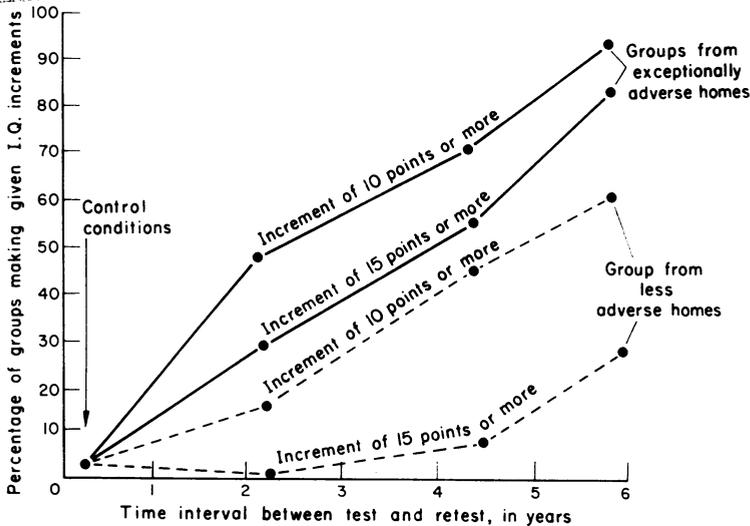


FIG. 1. Cognitive recovery from deprivation. This shows the increasing proportion of different but comparable groups of feeble-minded patients exhibiting increments in I.Q. of 10 and 15 points with increase in time interval between test and retest. Increments of 20 points or more are not shown, but for the 6-year interval 33 per cent of the group from exceptionally adverse homes and 5 per cent of those from less adverse homes made gains of this order. I.Q. assessments and social history ratings were carried out independently.

These experiments were independently confirmed by Roswell Harris at Monyhull Hospital, Birmingham. We do not suggest complete recovery from the most gross forms of deprivation our society produces; rather we indicate a slow shift in the degree of damage—a partial but considerable reversibility of early learning effects. Our subjects were quite as impaired in early adolescence as Goldfarb's and both groups had a background of adversity. The apparent contradiction between his findings and ours may well be in the length of follow-up. Our follow-up started at the age when his ended—14-15.

So, on Goldfarb's evidence, 3 years of unusual environmental impoverishment and adversity *does* divert the whole course of development until adolescence. Our evidence is so far in agreement, but from adolescence onwards we have found a slow but progressive reversion towards what would have been the normal course, even though this may never be fully achieved.

There are a few other studies of a rather different type which are relevant to the theme of early learning. For example, Schlaegel (1953) contrasted the imagery employed by blind and sighted adolescents. He quotes work from the last century which suggested that in studying visual dreams in the blind, the age of onset of blindness was important. Those who lost their vision before age 5-7 did not experience visual dreams. In other words, non-reinforcement of early experience resulted in extinction of visual imagery. Schlaegel's own study supports this early work; of thirteen subjects, blinded before the age of 6, only three had any visual imagery. The loss was most pronounced in those subjects with the poorest vision.

An imaginative, yet little known, experiment was conducted by Burt (1932) on the retention of early memories, demonstrating the progressive extinction of early learning which is not reinforced. Burt read aloud twenty-nine selections from Sophocles' "Oedipus Tyrannus" in the original Greek to his son, beginning at the age of 15 months. The sessions occurred daily, and every 3 months the material was changed to a different set of similar selections. The procedure was continued till the age of 3, when Greek disappeared entirely from the child's life. Testing for retention started at the age of 8½, when the boy learned some of the original material by a modified prompting method, and also material which he had never heard before. Similar experiments, using, of course, different selections, were conducted at ages of 14 and 18 years.

At the age of 8½ the subject learned the material heard in infancy significantly faster than new material of a similar nature. At the age of 14 only a slight effect could be discerned, and by the age of 18 the effect had altogether disappeared.

In summary, therefore, daily experiences from the age of 15 months to 3 years had a persistent and considerable effect 5 years later. Thereafter, this early learning became extinguished.

Finally it should be mentioned that there have been many studies attempting to relate specific aspects of early child rearing to particular adult qualities. Quite apart from the logical error, discussed in the Introduction, which these approaches involve, it should be no surprise that negative findings usually emerge (e.g. Orlansky, 1949). A much more profitable approach is to relate the general constellation of child-rearing practices (i.e. prolonged early learning experiences) to measurable cognitive or personality outcomes (e.g. Whiting and Child, 1953; Sears, Maccoby and Levin, 1957). Even so, such work may be bedevilled by what Wittenborn (1956) terms the "confounding third variable", heredity. It seems to be generally accepted that parental behaviour towards their children is very largely determined by their own needs, and if heredity plays a major part in their own personality structure, then a spurious correlation between child-rearing practices and child personality characteristics is not surprising. Wittenborn, however, goes on to show that the study of child-rearing practices of adoptive parents and the characteristics of adoptive children do yield small but significant correlations on items not commonly thought to possess any direct genetic basis. This latter is most important, for processes, such as intelligence, with known genetic links, are commonly correlated with the intelligence both of true and adoptive parents for reasons of selective placement, and do not yield, therefore, unequivocal evidence.

The Stability of Personality Characteristics

A necessary correlate of a belief in the long-term importance of early human learning is that personality characteristics are formed very early in life and should remain relatively stable. How far do the data confirm or dispute this view?

Let us first consider cognitive development, as measured by intelligence tests. It is generally conceded nowadays that intelligence results from the interaction of learning (i.e. experience) and genetic factors, and that anomalies in either or both are therefore bound to be reflected in the results. Long-term studies of ordinary children living at home show that early in the pre-school years there is no significant relationship between intelligence test results and ability in early adult life. As age increases, however, there emerges a growing correlation with adult status (e.g. about 0.4 at age 4; and about 0.5 at age 5). Yet the early test results do not measure irrelevant or highly fluctuant behaviour, for their short-term test reliability is very high. In brief, therefore, during the pre-school years and during childhood, mental, like physical, growth tends not to proceed in a linear fashion in the individual case but as age increases so does the relationship with adult status. The most reasonable interpretation of these well attested facts is that they reflect the cumulative effect of nature and nurture. Hence experience in early life does not accurately predestine cognitive development.

In recent years there has been a growing interest in the stability of the more orectic aspects of personality. The most ambitious work is by Kagan and Moss (1962), who report the results of a 30-year longitudinal study of a large number of normal persons from birth to maturity. A very large number of behavioural variables were investigated using techniques as widely different as projective tests, interviews, ratings and physiological measures. The most dramatic and consistent finding was that many of the behaviours exhibited by the child during the period 6–10 years, and a few during the period 3–6 years were “moderately good predictors of later behaviours during early adult life.” This statement summarizes correlations averaging about 0.5, which are not very different from those found with intelligence test scores. The authors point out, however, that not all of the childhood responses displayed long-term continuity. Compulsivity and irrational fears were not predictive of similar reactions at adulthood. And such measures as task persistence and excessive irritability during the first 3 years showed no relationship with similar responses during later childhood.

As with intelligence, the most reasonable explanation of the main findings is that they represent the cumulative influence of nature and nurture and highlight the early school years as being particularly critical. For general reviews of other recent work the reader should see Thompson (1959), Becker (1962), Bloom (1964) and Maccoby (1964).

DISCUSSION AND CONCLUSIONS

This chapter has been concerned with reviewing the better controlled studies concerning the long-term effects of early experience. There can be no doubt that this is a central problem for developmental psychology and psychiatry, and that a better understanding of its dynamics would enable an effective preventive psychiatry to be established. Equally, and quite apart from problems of mental health, a proper understanding of the rôle of experience in development could lead to the better realization of human potentials.

Our first and, regrettably, firmest conclusion must be that at the moment valid scientific knowledge is sadly lacking. Indeed, dogmatism about either the long-term effects or non-effects of early experience is at the present time entirely misplaced. Nevertheless, this review has been able to identify certain consistencies in the data, and these will now be outlined and discussed.

1. There is little reason to suppose that infant learning is acquired more easily than later learning. Nor is there any indication that it is better retained or more resistant to extinction. Experiments in fact suggest that infants and young children are strikingly inferior to adults in many dimensions of learning. Why is it, therefore, that it is commonly believed that the basic

pattern of fears and anxieties originate in infant and childhood experiences? In raising this question, Campbell and Campbell (1962) suggest as a possible hypothesis that learned fears and anxieties, involving massive autonomic reactions, function differently in infancy and childhood from instrumental conditioning and higher forms of learning. Nevertheless, the long-term effects of short, traumatic incidents seem to be negligible both in the rat and the young human being (Schaffer, 1958; Prugh *et al.* 1953, Clarke, 1962; Campbell and Campbell, 1962). Only when early learning is continually reinforced do long-term effects appear, and these may well be more the result of the later reinforcement than of the original learning as such (Clarke, 1962). It is worth noting that the animal experiments which fairly consistently indicate the potency of very unusual experiences, involve relatively long experimental periods (Thompson and Melzack, 1956; Levine, 1960; Harlow, 1963).

In particular, with human infants the specific effects of experiences before 7 months of age appear to be of very short duration. Indeed, it is experiences after the first year of life which appear to have a longer-term effect, and even so, extinction occurs unless there is reinforcement.

2. Surveys of ordinary children will tend to yield equivocal information on this problem, because of the reinforcement of early learning in the home, and because genetic association between parent and child may yield non-causally induced correlations between parent and child behaviours. Hence, children who have experienced a major life change are the best subjects for research.

3. Apparent discrepancies between some of the classic studies of the effects of institutional upbringing are largely resolved if (a) differences in institutions, (b) differences in later placement and (c) differences in length of follow-up are taken into account (cf. Goldfarb, 1943; Klackenberg, 1956; Clarke and Clarke, 1959).

4. It is unwarranted to assume that all psychological processes are affected to an equal extent by early experiences. Indeed, Stone (1954) pointed out that apparent discrepancies between the "maturational" or "nativist" schools versus the "environmentalists" resulted from both sides tackling different problems. This was elaborated by Clarke (1962) who indicated that different functions appeared to show different degrees of recovery following early adversity, with the motor processes being the most resilient (e.g. Dennis and Najarian, 1957; Dennis, 1960) and emotional functions (with perhaps massive autonomic modification induced by early learning) least so.

5. The extinction of early learning effects, referred to in 1. above, may not be complete but following all types of non-reinforced adverse early learning there seems at least to be a shift in the degree of damage as age increases, even well on into adult life.

6. There seem to be large individual differences in vulnerability to early adverse experiences, and in resilience thereafter (Clarke and Clarke, 1960).

This may be due to genetic factors, or indeed as Stott (1962) has urged, to minimal brain injury which could be very common.

7. The rigidity of character structuring during infancy appears to have been exaggerated by some authorities, and early learning experiences appear not to set for the child a necessarily fixed and invariable path. As Orlansky (1949) writes: "It is important to stress that the neonate and young infant is an immature animal organism, culturally 'neuter' and psychologically uncommitted, which can only slowly and with much parental effort and the gradual maturation of its faculties, be socialized".

8. Implicit in the belief that very early learning exercises a powerful adult effect is the view that personality characteristics remain relatively stable. For normal children this appears not to be the case with most areas of behaviour until the early school years are reached. Only then do moderate correlations with adult behaviours emerge (Kagan and Moss, 1962). An analogous situation exists with intelligence test scores. The view commonly held by workers in the field of mental health that early characteristics remain relatively unchanged seems therefore either to be true only of a specially vulnerable section of the population, or to be the result of selection of evidence based on hindsight. Research will ultimately have a bearing on this problem.

9. Evidence suggests that early learning is of importance mainly for its foundational character. Development proceeds at different rates through a sequence of well-marked stages. Each stage depends on the integrity of previous stages, but it seems better to talk of optimal rather than critical periods of learning in man. Deficits arising from early environmental handicaps can to varying extents be made good. Nature interacting with nurture appear to exercise gradually cumulative effects.

10. As Huxley has pointed out, in science it is almost impossible to avoid teleological thinking. And in this sense, with man's slow maturation, some degree of plasticity and resilience in comparison with the animal kingdom would seem biologically desirable. Inadequate though much of it is, the data seem to be in correspondence with such a theory.

It would of course be wrong to risk leaving any impression that the child is seen as a passive organism whose character is moulded solely by the impact of environment upon genetic predispositions. As a number of writers indicate, the child may himself act indirectly as a reinforcer of his own behaviour. This Kagan and Moss (1962) indicate that "the mother-child dyad is a feed-back system, and the degree to which the child's actions have the power to change the mother's behaviour increases with development". (*Op. cit.* p. 279). The institutional child, for example, may in foster care show an irritating immaturity of behaviour which changes the foster-parent's mode of handling and makes matters worse, thus reinforcing immature or aggressive responses. (See also Rutter, Birch, Thomas and Chess, 1964.)

In conclusion, it must be re-emphasized that precise knowledge is lacking on most of the questions discussed in this chapter. Yet, some, like Bloom (1964) hold that "the most vital research problem in the behavioural sciences are those centred round the effects of early learning and early environments on humans". The present writer, however, is in only part agreement with this statement; the vital problem in broad terms is surely to determine more exactly the modes in which behavioural characteristics are generated, the circumstances which create, maintain or modify them, and the extent to which a given developmental path may be diverted or restructured. Such an endeavour seems unlikely, as has been shown, to isolate early experience as the main determinant.

SUMMARY

It seems that satisfactory scientific evidence gives no support to theories of the long-term importance of traumatic incidents early in life (unless reinforced), nor to the later effects of specific as opposed to general child-rearing practices. Indeed, early learning is relatively inefficient, is slowly acquired and extinguishes more rapidly than in older children. No doubt basic foundational cognitive, affective and conative structures are laid down early in life but to varying extents these are modifiable by later experience. In the normal family, however, these characteristics will tend to be cumulatively reinforced so that by school age moderate correlations with adult status will emerge.

In reviewing the field, Vernon (1964) writes that "it seems more probable that fantasies regarding early child-parent relations are later fabrications and projections of present defence mechanisms. Indeed, a likely reason for the emphasis on early experience in depth-psychological theories is that patients like to talk about such experiences as a defence against facing their current difficulties (much as a mother ascribes her son's backwardness in school to his falling on his head when he was a baby)". One might add that the current uncritical belief by many psychiatrists and psychologists in the potency of early experiences reinforces the patient's readiness to discuss these, and in turn by a circular process the professional workers' faith is further strengthened.

This chapter thus suggests that the rôle of very early experience has been greatly exaggerated. If this is so, therefore, perhaps it does not really matter very much what happens to the child early in life? In the writer's view such a conclusion could hardly be justified. The emphasis throughout has been on the continuity of learning experiences and their usual reinforcement. Thus the maladjusted, unhappy pre-school child may tend to grow into the maladjusted adult not so much because of what happened at the age of 3, but rather because what occurred then will in the normal course of events continue to recur unless the clinician can break the link in the situation.

ACKNOWLEDGEMENT

I am very grateful to my wife, Dr. A. M. Clarke, to my colleague Mr. M. H. Sheldon, and to Professor W. Sluckin for critical comments and many suggestions.

REFERENCES

- AINSWORTH, M. D., ANDRY, R. G., HARLOW, R. G., LEBOVICI, S., MEAD, M., PRUGH, D. G., and WOOTTON, B. (1962) *Deprivation of Maternal Care: a Reassessment of its Effects*. Geneva: World Hlth. Org.
- BEACH, F. A. and JAYNES, J. (1954) Effects of early experience upon the behaviour of animals. *Psychol. Bull.* **51**, 239-262.
- BECKER, W. C. (1962) Developmental psychology. *Annual Review of Psychology* **13**, 1-34.
- BLOOM, B. S. (1964) *Stability and Change in Human Characteristics*. New York: John Wiley.
- BOWLBY, J. (1951) *Maternal Care and Mental Health*. Geneva: World Hlth. Org.
- BOWLBY, J., AINSWORTH, M., BOSTON, M., and ROSENBLUTH, D. (1956) The effects of mother-child separation: a follow-up study. *Brit. J. med. Psychol.* **29**, 211-247.
- BURTT, H. E. (1963) The retention of early memories in Dennis, W. *Readings in Child Psychology*, Second Edition, 341-352. Englewood Cliffs, N. J.: Prentice-Hall.
- CAMPBELL, B. A., and CAMPBELL, E. M. (1962) Retention and extinction of learned fear in adult rats. *J. comp. physiol. Psychol.* **55**, 1-8.
- CLARKE, A. D. B. (1962) Problems in assessing the role of early human learning. Unpubl. paper in Symposium on Early Learning. Annual Conference of the British Psychological Society.
- CLARKE, A. D. B., and CLARKE, A. M. (1954) Cognitive Changes in the feeble-minded. *Brit. J. Psychol.* **45**, 173-179.
- CLARKE, A. D. B., and CLARKE, A. M. (1959) Recovery from the effects of deprivation. *Acta Psychologica* **16**, 137-144.
- CLARKE, A. D. B., and CLARKE, A. M. (1960) Some recent advances in the study of early deprivation. *J. Child Psychol. and Psychiat.* **1**, 26-36.
- CLARKE, A. D. B., CLARKE, A. M., and REIMAN, S. (1958) Cognitive and social changes in the feeble-minded—three further studies. *Brit. J. Psychol.* **49**, 144-157.
- DAVIS, K. (1940) Extreme social isolation of a child. *Amer. J. Sociol.* **45**, 554-565.
- DAVIS, K. (1947) Final note on a case of extreme isolation. *Amer. J. Sociol.* **52**, 432-437.
- DENNIS, W. (1941) Infant development under conditions of restricted practice and of minimum social stimulation. *Genet. Psychol. Monogr.* **23**, 143-189.
- DENNIS, W., and DENNIS, M. (1951) Development under controlled environmental conditions. In Dennis, W. (Ed.) *Readings in Child Psychology*. New York: Prentice-Hall.
- DENNIS, W. (1960) Causes of retardation among institutional children. *J. genet. Psychol.* **96**, 47-59.
- DENNIS, W., and NAJARIAN, P. (1957) Infant development under environmental handicap. *Psychol. Monogr.* **71**, 1-13.
- DOUGLAS, J. W. B., and BLOMFIELD, J. M. (1958) *Children under Five*, London: Allen and Unwin.
- EYSENCK, H. J. (1952) *The Scientific Study of Personality*, London: Routledge and Kegan Paul.
- FOULDS, G. A. (1958) Clinical research in psychiatry. *J. ment. Sci.* **104**, 259-265.
- FOX, B. (1961) The investigation of the effects of psychiatric treatment. *J. ment. Sci.* **107**, 493-502.
- FULLER, J. L. and WALLER, M. B. (1962) Is early experience different? Chapter 16 in *Roots of Behaviour*. Ed. E. L. Bliss. New York: Harper & Bros.

- GARDNER, D. B., HAWKES, G. R., and BURCHINAL, L. G. (1961) Development after non-continuous mothering. *Child Developm.* **32**, 225-234.
- GOLDFARB, W. (1943) The effects of early institutional care on adolescent personality. *J. exp. Educ.* **12**, 106-129.
- GOLDMAN-EISLER, F. (1950) Breast feeding and character formation. *J. Person.* **19**, 189-196.
- HARLOW, H. F. (1949) The formation of learning sets. *Psychol. Rev.* **56**, 51-65.
- HARLOW, H. F. (1963) The maternal affectional system. In Foss, B. M. (Ed.) *Determinants of Infant Behaviour*, London: Methuen.
- HOWELLS, J. G., and LAYNG, J. (1955) Separation experiences and mental health. *Lancet* **ii**, 285-288.
- KAGAN, J., and MOSS, H. A. (1962) *Birth to Maturity*, New York: John Wiley.
- KING, J. A. (1958) Parameters relevant to determining the effect of early experience upon the adult behaviour of animals. *Psychol. Bull.* **55**, 46-57.
- KLACKENBERG, G. (1956) Studies in maternal deprivation in infants' homes. *Acta Paediatrica* 451-512.
- LEVINE, S. (1960) Stimulation in infancy. *Scientific American*, May issue.
- LEVINE, S., and LEWIS, G. W. (1959) The relative importance of experiment contact in an effect produced by extra-stimulation in infancy. *J. comp. physiol. Psychol.* **52**, 368-369.
- LEWIS, H. (1954) *Deprived Children*. London: Oxford Univ. Press.
- MACCOBY, E. E. (1964) Developmental psychology. *Annual Review of Psychology* **15**, 203-250.
- MASON, W. A., and RIOPELLE, A. J. (1964) Comparative Psychology. *Annual Review of Psychology* **15**, 143-180.
- MASON, M. K. (1942) Learning to speak after years of silence. *J. Speech and Hearing Disord.* **7**, 295-304.
- MELZACK, R. (1954) The genesis of emotional behaviour: an experimental study of the dog. *J. comp. physiol. Psychol.* **47**, 166-168.
- ORLANKSY, H. (1949) Infant care and personality. *Psychol. Rev.* **46**, 1-48.
- PRUGH, D. G., STAUB, E. M., SANDS, H. H., KIRSCHBAUM, R. M., and LENIHAN, E. A. (1953) A study of the emotional reactions of children and families to hospitalization and illness. *Amer. J. Orthopsychiat.* **23**, 70-116.
- RHEINGOLD, H. L. (1956) The modification of social responsiveness in institutional babies. *Monogr. Soc. Res. Child Developm.* **21** (63), 1-48.
- RHEINGOLD, H. L., and BAYLEY, N. (1959) The later effects of an experimental modification of mothering. *Child Developm.* **30**, 363-372.
- RHEINGOLD, H. L., and STANLEY, W. C. (1963) Developmental psychology. *Annual Review of Psychology* **14**, 1-28.
- RUTTER, M., BIRCH, H. G., THOMAS, A., and CHESS, S. (1964) Temperamental characteristics in infancy and the later development of behavioural disorders. *Brit. J. Psychiat.* **110**, 651-661.
- SCHAFFER, H. R. (1958) Objective observations of personality development in early infancy. *Brit. J. med. Psychol.* **31**, 174-183.
- SCHLAEGEL, T. F. (1953) Visual experience and visual imagery. *J. genet. Psychol.* **83**, 265-277.
- SEARS, R. R., MACCOBY, E. E., and LEVIN, H. (1957) *Patterns of Child Rearing*, New York: Row, Peterson & Co.
- SKEELS, H. M., and DYE, H. B. (1939) A study of the effects of differential stimulation on mentally retarded children. *Proc. Amer. Assoc. ment. Defic.* **44**, 114-136.
- SLUCKIN, W. (1963) *Imprinting and Early learning*. London: Methuen.
- SPITZ, R. A. (1945) Hospitalism: an inquiry into the genesis of psychiatric conditions in early childhood. *Psycho-analytic Stud. Child.* **1**, 53-74.

- SPITZ, R. A. (1946a) Hospitalism: a follow-up report. *Psycho-analytic Stud. Child.* **2**, 113-117.
- SPITZ, R. A. (1946b) Anaclitic depression. *Psycho-analytic Stud. Child.* **2**, 313-342.
- STOTT, D. H. (1962) Abnormal mothering as a cause of mental subnormality—I. A critique of some classic studies of maternal deprivation in the light of possible congenital factors. *J. child. Psychol. Psychiat.* **3**, 79-91.
- THOMPSON, G. G. (1959) Developmental psychology. *Annual Review of Psychology*, **10**, 1-42.
- THOMPSON, W. R., and HERON, W. (1954) The effects of early restriction on activity in dogs. *J. comp. physiol. Psychol.* **47**, 77-82.
- THOMPSON, W. R., and MELZACK, R. (1956) Early environment. *Scientific American*, January issue.
- THORPE, W. H. (1961) Comparative psychology. *Annual Review of Psychology*, **12**, 27-50.
- TRASLER, G. (1960) *In Place of Parents*, London: Routledge & Kegan Paul.
- VERNON, P. E. (1964) *Personality Assessment: a Critical Survey*, London: Methuen.
- WHITING, J. W. M., and CHILD, I. L. (1953) *Child Training and Personality: a cross-cultural study*, New Haven: Yale Univ. Press.
- WITTENBORN, J. R. (1956) *The Placement of Adoptive Children*. Springfield, III.: Charles C. Thomas.
- WOODS, P. J. (1959) The effects of free and restricted environmental experience on problem-solving behaviour in the rat. *J. comp. physiol. Psychol.* **52**, 399-402.
- WOOTTON, B. (1959) *Social Science and Social Pathology*. London: Allen Unwin.
- YARROW, L. J. (1961) Maternal deprivation: toward an empirical and conceptual re-evaluation. *Psychol. Bull.* **58**, 459-490.

CHAPTER 5

Social Problems of Mental Subnormality

by A. KUSHLICK

In England and Wales at the 31st December, 1963 there were known to be 64,622 mentally subnormal people in psychiatric hospitals. There were also 85,628 (1/4 under the age of 16, and 3/4 over 16) being supervised at home by mental welfare officers from the Mental Health Departments. Of these, 27,932 (1/2 under 16, and 1/2 over 16) were attending day-training centres provided by the Mental Health Department; 4908 (30 per cent under 16, and 70 per cent over 16) were on the waiting list for admission to training centres. Another 1352 (1/5 under 16 and 4/5 over 16) were receiving training at home. 1957 (30 per cent under 16 and 70 per cent over 16) were in residential hostels or homes. There were 5350 people on the waiting list for admission to hospital (Ministry of Health, 1964).

Classification

These figures constitute the recognized or administrative prevalence of mental defect, that is the existing numbers at one time. However, mental defect is not a homogeneous entity; indeed it covers a wide range of abilities. Table 1 shows the I.Q. range of the mentally subnormal and the terms which are used to describe the differing degrees of handicap.

In this chapter we will use the classical terms idiot, imbecile and feeble-minded or severely and mildly subnormal to mean people in the I.Q. ranges shown in the table.

There are no further details about the degree of handicap of all the known mental defectives in England and Wales, and the figures given often reflect administrative practice rather than the "true" prevalence of the condition. We are, however, able to make some generalizations about the "true" prevalence of the condition in this country from the results of detailed studies conducted in smaller areas. These show that there are important differences between the severely subnormal (I.Q. under 50) and the mildly subnormal (I.Q. over 50). For this reason we will discuss these two major categories separately.

TABLE 1. DIFFERENT TERMS USED TO CLASSIFY THE DEGREE OF MENTAL HANDICAP WITH THE APPROXIMATE I.Q. RANGES OF THE SUBJECTS IN EACH GRADE (MEAN I.Q. OF THE POPULATION APPROXIMATELY 100)

I.Q. Range	Classification used in this chapter		Other terminology sometimes used	Mental health act 1959 classification	S U B N O R M A L
0-20 or 25	Idiot	Severely	Low-grade	Severely	
20 or 25-50 or 55	Imbecile	Subnormal	Medium Grade	Subnormal	
50 or 55-70 or 75	Feeble Minded	Mildly Subnormal	High-grade Debile Moron	Subnormal and Psychopathic	

The Prevalence and Prognosis of Severe Subnormality (I.Q. under 50)

In England and Wales about 3.7/1000 of the people who survive to the age of 15-19 are likely to be severely subnormal. Kushlick (1961) examined the records of all mental defectives known on the 1st January, 1961 to the Mental Health Department in Salford, a Northern English industrial city of 153,000 people. Goodman and Tizard (1962) examined the records of all mental defectives known in 1961 to the Mental Health Department of Middlesex County, a major English conurbation with a population of 2,231,100. They also collected details of children of I.Q. under 50 who were of school-age but who were not known to the Mental Health Department because they were still attending schools within the ordinary educational system, private schools and private homes. Kushlick (1964) examined the records of all mental defectives known on the 1st July, 1963 in the area served by the Wessex Regional Hospital Board. The three county boroughs Southampton, Portsmouth and Bournemouth and three counties Hampshire, Dorset and the Isle of Wight had a total population of 1,740,000 people. The records were obtained from the Mental Health Departments of the Local Health Authorities, the psychiatric hospitals for the subnormal and the mentally ill and from registered private homes serving the people in the Region. The prevalence of severe subnormality found in these surveys in comparable age-groups is shown in Table 2. The rates are very similar for both urban and rural areas.

Prevalence rates of severe subnormality in the U.S.A. are similar to those found in this country but differences in survey methods render comparisons with English results difficult. Lemkau *et al.* (1943) examined in 1936 the records of children known as imbecile or idiot in a part of Baltimore with a

population of 55,000. He found a prevalence rate in the age-group 10-14 of 3.3/1000. A survey in the urban area of Onondaga County, New York, in 1955 found the prevalence rate of children of I.Q. under 50 in the age group 5-17 to be 3.6/1000. The total population of children of 17 years and

TABLE 2

COMPARISON OF THE PREVALENCE RATES OF SEVERE SUBNORMALITY IN THE YOUNGEST AGE-GROUPS WHERE ALL SUBJECTS ARE LIKELY TO BE KNOWN

	Age-group	Severe subnormality rate/1000	Mongol rate/1000
Middlesex (Goodman and Tizard, 1962)			
1960	7-14	3.45	1.14
1960	10-14	3.61	
Salford (Kushlick, 1961)			
1961	15-19	3.62	0.90
Wessex (Kushlick, 1964)			
1964 County Boroughs	15-19	3.54	1.15†
Counties	15-19	3.84	1.18†

† The Wessex Survey suggested that 10 per cent of mongols have I.Q. scores of more than 50.

under in this urban area was 116,000. Åkesson (1961) tested all the children and a sample of adults in 10 rural Swedish parishes with a total population of 11,500. He found the high rate of 5.8/1000 subjects of all ages with scores of I.Q. under 50.

The English studies suggest that distinct clinical entities are now contributing similar proportions to the condition of severe subnormality. Thus, Table 2 shows that the prevalence of mongolism at the age of 15-19 is very similar in all the surveys; most mongols are severely subnormal. Dunsdon *et al.* (1960) have estimated that 6-7 per cent. of mongols scored I.Q.'s of over 45 while 1-2 per cent. scored 55 and over. From this it can be seen that mongolism at present accounts for about a quarter of all cases of severe subnormality in this age group.

The means of identifying severely subnormal subjects is similar in all industrialized countries. In this country most of them are excluded from school because they are deemed "unsuitable for education" in the ordinary school system by teachers, head teachers, educational psychologists and school medical officers. The most severely handicapped children are notified at very early ages and may be excluded from even starting school from the age of 2 years. Some of these children may have been diagnosed as mentally subnormal in the first few years of their lives because of the presence of clinical signs like mongolism or microcephaly which are often associated

with future severe subnormality. They may be referred by their general practitioners or paediatricians to the Mental Health Department if the departments provide appropriate services.

The author found in the Salford Survey that a third of the idiots (I.Q. under 20) had been notified to the Mental Health Department before the age of 5 and that 93 per cent had been notified by the age of 9. Among imbeciles (I.Q. 20-49) the corresponding percentages were 7 and 45 respectively. Most of the remaining severely subnormal children are excluded from the ordinary school system after a trial at school. However, Kushlick (1961) found that no less than a quarter of the severely subnormal children continued in the ordinary school system in special or ordinary schools and were notified to the Mental Health Department for supervision only on leaving school at 15 or 16.†

In this country nearly all severely subnormal people who have survived to the age-group 15-19 have been notified to Mental Health Departments. Kushlick (1961) found that only a very small proportion of these subjects were notified for the first time after the age of 19. The reason for this appears to lie in the prognosis of people with severe subnormality. Only about 10 per cent of these subjects are able to hold employment in open industry. The remaining 90 per cent appear at the present time to remain permanently economically dependent and become, for this reason, known to the social agencies dealing with subnormality.

Tizard (1958) reviewed the available follow-up studies of severe subnormality. He suggested that between 10 and 20 per cent may be capable of becoming economically independent. Ferguson and Kerr (1955) followed up 207 girls who had left Glasgow schools for the educationally subnormal six years previously. Only 2 out of 11 girls of I.Q. under 50 (range 40-49) had been employed since leaving school—one had worked for 2 years and one for 3 years. None of these girls had married. There is further indirect evidence that the severely subnormal are permanently economically dependent. Kushlick (1961) found that the prevalence rates of recognized severe subnormality in Salford remained constant from the age-group 15-19 until the age of 40 when it began to fall due to deaths among these subjects (see Table 3). In the same study the author was able to analyse all of the notifications to and deletions from the Salford register of mental defectives between 1948 and 1960. Subjects were deleted from the register when they died, emigrated to another area, when they could no longer be traced or when, because they made stable adjustments in the community and were no longer seen as being in need of supervision, they were discharged from care.

† Other industrialized countries with universal compulsory education have selection processes for segregating severely subnormal children either by providing them with special education within the ordinary school system as is done in Holland and Scotland or by excluding them altogether as is done in England and Wales. (In England and Wales the lower I.Q. limit for children in special schools is generally 50.)

Stable employment and marriage were the main reasons for discharge. Only 7 per cent of the subjects discharged during 12 years were severely subnormal. The remainder had I.Q.'s of over 50.

The same study suggested that severely subnormal subjects who survived childhood were eventually admitted to hospitals for the subnormal. Thus while the numbers of severely subnormal people living at home declined with increasing age, the fall in numbers living at home was accompanied by a rise in numbers among those in hospital. Leeson (1962) found in the Manchester Region that the waiting list for admission to hospitals for the subnormal consisted largely of severely subnormal subjects and that once admitted to hospital they were seldom, if ever, discharged.

Summary

Severely subnormal individuals are mainly identified in countries with compulsory universal education when they are found unsuitable for education within the ordinary school system. In England and Wales the majority of these children are excluded from school and become the responsibility of the Mental Health Department of the Local Health Authority. About a quarter remain within the ordinary school system in special schools, and are notified to the Mental Health Departments after leaving school for supervision or when they fail to hold employment in open industry. In some countries like Holland, a large proportion continue within the ordinary school system in schools for the severely subnormal. By the age of 15-19 nearly all severely subnormal subjects who have survived to this age are known to Mental Health Departments of Local Health Authorities in England and Wales. At this age the proportion of severely subnormal in the population is about 3.7/1000 in both urban and rural areas of England. Between a quarter and a third of these people have the clinical condition of mongolism. An I.Q. of under 50 appears at present to be a severe incapacity leading to permanent dependence among about 90 per cent of affected individuals. Those subjects who do not die at an early age appear eventually to be admitted to hospitals for the subnormal. Once admitted they tend at present to remain there until they die.

The Prevalence and Prognosis of Mild Subnormality

The I.Q. range 50-70 or 75 has been suggested as diagnostic of the grade of mild mental subnormality. This has not proved useful either clinically or administratively. There are many people in this I.Q. range who are never dealt with as subnormal and who do not appear to have problems arising from their low intelligence, and there are people of I.Q. well over 70 who are being dealt with by the services for the subnormal. In this country there has never been, nor is there now, an upper psychometric limit to this degree of subnormality. On a test standardized to give a mean of 100 and standard

deviation of 15, the proportion of the population scoring between 50 and 70 would be nearly 20/1000. In the Salford survey the highest prevalence rate for mild subnormality was found among those aged 15-19; it was 8·7/1000 or under a half of the rate expected on the criterion of I.Q. alone.

Although the Mental Health Act of 1959 included for the first time the criterion of low intellect in the diagnosis of subnormality there is no sign that this has led to a lowering of the I.Q. level of people admitted to hospitals for the subnormal. A Working Party of the British Psychological Society (1963) examined the Wechsler I.Q. levels of 876 people admitted to these hospitals since the Act became operative. The average Wechsler I.Q. of those graded "subnormal" was 71·4; that of admissions categorized "severely subnormal" was 60·4. These levels are very similar to those reported by O'Connor and Tizard (1956) among patients in hospitals for the subnormal in 1954.

Nor is the I.Q. level the sole determinant of who is to be classified as Educationally Subnormal (E.S.N.) and given special education within the ordinary school system.† The total number of children in special schools seldom exceeds half of the 2 per cent to be expected, if all children of I.Q. 50-70 were to attend, and the Report of the Chief Medical Officer (Ministry of Education 1963) shows that nearly 40 per cent of children in the special schools scored over 70.

Unlike the severely subnormal, most of whom are excluded from the ordinary school system, the majority of the mildly subnormal first become so classified in this country when they are notified by the Education Authority to the Mental Health Department as in need of supervision on leaving school. Thus, 90 per cent of the mildly subnormal people referred to Salford Mental Health Department between 1948 and 1960, were notified between the ages of 15-19 (Kushlick, 1961). This also explains why Mental Health Department registers have very few mildly subnormal people aged under 15 and why there is a sharp rise in their numbers in the age-group 15-19.

There is much evidence that unlike severe subnormality, mild subnormality is a temporary incapacity related largely to educational difficulties experienced at school. After leaving school the majority of these people become socially and economically independent and are indistinguishable from the rest of the community.

Some of the evidence is indirect. Kushlick (1961) found that the prevalence rate of mild subnormality dropped precipitously after the age range 15-19. This rapid fall was due to the discharge of subjects from the register when they were judged by the service not to require supervision because they were in stable employment or because they had married. By adding to

† In this country, before the Education Act of 1944, children who received special education had first to be "certified" mentally defective of the feeble-minded grade. It is now possible for children to receive special education on the recommendation of the Education Authority without being classified as E.S.N.

the 1961 Salford Register all of the subjects who had been discharged in the period 1948–1960 it was found that at the time of the survey discharges had been achieved by two-thirds of the people who were in the age range 25–29, nearly 40 per cent aged 20–24 and over 10 per cent aged 15–19. Over 90 per cent of those discharged were mildly subnormal. It may be assumed that these people were making reasonable adjustments within the community because those who subsequently became social failures were likely to have been discovered by the social agencies like the National Assistance Board and the Labour Exchange, and minatory agencies like the Police, the Courts and the National Society for the Prevention of Cruelty to Children, and to have been re-notified to the Mental Health Department. These agencies do refer people to the Department.

The rapid decline in the prevalence of mild subnormality after the initial peak at school-leaving age was first observed by Penrose (1949). He calculated age-specific prevalence rates from Lewis's (1929) data obtained in the classical survey of mental defect in 3 rural and 3 urban areas in England and Wales. This phenomenon has since been observed in many surveys of subnormality in England and in other countries. The results of some of these surveys are summarized in Table 3. The methods used and criteria of grading are summarized in the Appendix. In the Salford Survey the highest prevalence rates of mild subnormality were found in the age-group 15–19 because the subjects were only referred to the Mental Health Department when they had left school; as the remaining surveys included children still at school, their highest prevalence rates were found in the age-group 10–14.

There is other indirect evidence of the favourable prognosis of the mildly subnormal. Unlike the severely subnormal subjects, only a minority of the mildly subnormal subjects are ever admitted to hospital. Kushlick (1961) found that the decline in numbers living at home with increasing age was not accompanied by a rise in hospital numbers.

There are no adequate follow-up studies in this country of complete samples of mildly subnormal subjects. However, the favourable prognosis among the majority of these subjects is confirmed in a number of longitudinal studies reviewed by Tizard (1958). One outstanding study is summarized by Tizard in this review. Baller (1936) began a follow-up study of 206 people (nearly every child) who had been in the "opportunity rooms" of the Lincoln, Nebraska public schools up to the time of the research for at least one year, had an I.Q. of not above 70 and were considered mentally deficient by the teachers and psychologists. Charles (1953) located 150 (three quarters) of these people. Of this number 24 had died—17 through illness and 7 from accidents or violence. (The death rate was above the average for the population as a whole). Ten per cent of those still alive had been successfully discharged from institutions or were on parole. Nine subjects were in institutions. Eighty per cent of the sample had married — 21 per cent of these were divorced. (The divorce rate was lower than the average

TABLE 3. PREVALENCE RATES OF SUBNORMALITY PER 1000 IN EACH AGE-GROUP†

	Grade				All Grades				
	Severely S/N		Mildly S/N		Salford 1961	England 1926-29 (From Penrose)	Baltimore 1936	Onondaga 1955	Rural Sweden 1955
	Salford 1961	England ‡ 1926-29	Salford 1961	England ‡ 1926-29					
0-4	0.89	0.69	0.15	0.51	1.13	1.2	0.7	4.5	12.5
5-9	1.62	3.09	0.36	11.41	1.98	15.5	11.8	39.4	18.4
10-14	2.55	4.35	0.29	21.25	2.84	25.6	43.6	77.6	37.2
15-19	3.62	2.84	8.63	7.96	12.27	10.8	30.2	—	14.2
20-29	3.44	2.07	4.16	6.33	7.66	8.4	7.2††	—	19.7
30-39	3.77	1.49	1.83	4.21	5.59	5.7	8.1††	—	22.7
40-49	2.47	1.22	2.56	4.18	5.04	5.4	8.3††	—	17.7
50-59	1.70	0.90	1.04	4.00	2.83	4.9	6.4††	—	17.6
60+	0.52	0.48	0.6	2.42	1.13	2.9	2.6††	—	8.4
Total:	2.24	1.87	2.06	6.73	4.38	8.6	12.2	—	17.4

† See Appendix for methods used in the surveys.

‡ Calculated from Lewis (1929) Tables 17(A) and (C), and Penrose (1963) p. 23.

†† Age groups are 20-24; 25-34; 35-44; 45-54; 55-64; 65+.

for the whole population). Eighty per cent of those married had children—the average number of children per family was 2.62. (This was lower than the population average.) School records were available for 73 of the children. Two were in mental deficiency institutions; another was crippled. The I.Q.'s available for 46 of the children ranged from 50 to 138 (Mean 95; S.D. 16). The majority of the homes were adequate and they ranged from "filthy shacks" to costly new houses with landscaped gardens. All but 7 of the non-institutionalized people had at least part-time jobs; most were regularly employed and 83 per cent (as in 1935) were self supporting. Half of those gainfully employed had been in the same type of occupation for from 3 to 30 years. Their occupations ranged from managerial to unskilled labour. The I.Q.'s of 24 retested subjects had increased from a mean of 58 (Stanford-Binet, 1915) to 81 (Wechsler Bellevue). Forty per cent of subjects still in Lincoln and 60 per cent of the men had violated the law since 1935, one quarter were traffic and three quarters were civil offences, (one half of these were for drunkenness and none were serious). Throughout the period 1935-50 20 per cent had been admitted to institutions; under a half had required public assistance; over a third had been self sufficient. The proportion requiring public assistance decreased from one quarter in the period 1936-40 to under 10 per cent in the following years up to 1950. Similarly, the proportion who were self-supporting increased from 40 per cent in the period 1936-40 to 65 from 1946-50. In 1935, Baller had found only one quarter self-sufficient and one half were receiving assistance.

A favourable prognosis has also been shown among E.S.N. school leavers in Scotland. Ferguson and Kerr (1955) found that 6 years after leaving school, 55 out of 207 such girls were already married (26.6 per cent compared with the 1951 Census figure of 39.6 per cent for all 22-year-old women in Glasgow). There was a tendency for them to marry men of a higher social class than that of their own fathers; thus, 30 per cent married skilled tradesmen whereas only about 10 per cent were the daughters of skilled tradesmen. Nor was the rate of illegitimacy among these women much greater than that in the rest of the population for this age-group; thus 7.9 per cent of survey women still single were known to have borne children compared with 6.0 per cent of Glasgow women aged 22. Their work histories since leaving school were also good; thus, of 145 women still unmarried, 7 had worked for less than 2 years; 4 for 2 to 3 years; 8 for 3 to 4 years; 17 for 4 to 5 years; and 89 for 5 years or more. Physical disability was partly responsible for their poor work performance in 10 out of 19 cases where women had worked for some period less than 4 years. Of 11 girls with I.Q.'s of less than 50 only 2 had done any work since leaving school. Only 10 of the girls were in institutions at the time of the survey.

Brandon (1960) has described a follow-up study of 200 mildly subnormal women who were discharged from a small unit of the Fountain Hospital.

They constituted 70 per cent of all such patients ever admitted. They had been admitted when they were in their early twenties and discharged some 15 years later. The follow-up assessment took place between 1 and 36 years after their discharge. The mean I.Q. of this sample was 84.1 on the Wechsler Bellevue, and 65.0 on the Terman-Merrill scales. Most of the subjects came from grossly disrupted families and 75 per cent had personality disorders diagnosed at admission. 12.5 per cent were admitted through the courts. Out of 171 contacted, "20 have returned to the hospital for short periods. Roughly a third each are living independently, or are living with relatives, only 10 per cent are not working or housewives, 46 are married". Seven unmarried women have had children since their discharge.

Inconstancy of the I.Q.

It has also been shown that people categorized mildly subnormal or educationally subnormal continue to make I.Q. increments for some years after it is believed that I.Q. growth is complete. This observation is important because it questions the concept of the constancy of I.Q. as an assessment of innate "intelligence" among the mildly subnormal. Second, it complicates further any attempt to measure the prevalence of mild subnormality on the criterion of I.Q. Third, this phenomenon appears to be characteristic of mild subnormality in the absence of brain damage and may partially explain the good prognosis of these subjects after they leave school. Fourth, it suggests that the ability of the mildly subnormal to profit from education may indeed improve from the time they leave school and emphasizes the need to provide them with adult education on leaving school.

Clarke and Clarke (1953 and 1954) re-tested with the same test some two years later 59 hospitalized patients whose initial I.Q.'s had ranged from 35 to 98 with a mean of 66.2 (S.D. 14.0). The range at re-testing was 40-97 and the mean had risen 6.5 points to 72.7 (S.D. 13.4). The 59 subjects were divided independently of their score into two groups, those from "very bad homes"† and the remainder. The former showed a mean increment of 9.7 (S.D. 6.3) and the latter a mean of 4.1 (S.D. 4.9). Clarke, *et al.* (1958) re-tested 6 years later 28 of the subjects who were still in hospital — the other 31 patients had already been discharged. Nine of the 28 came from the very bad homes; their mean I.Q. had risen to 75.8 (S.D. 10.3), a mean increment over the 6 years of 16.2 (S.D. 6.1). Among the 19 from less adverse homes the mean I.Q. had risen to 72.5 (S. D. 13.3), a mean increment over the period of 10.2 (S.D. 6.6). The average age at the final test was nearly 27.

Stein and Susser (1960) examined a stratified sample of 50 of a total random sample of 106 subjects aged 20-24 years who had been "ascertained"

† The twelve criteria used were: "N.S.P.C.C. intervention, parental attitude antagonistic, no fixed abode, 'Fit Person' Order, home conditions bad, considerable neglect, irregular school attendance due to neglect, home dirty and neglected, gross poverty, crime in parents, rickets, child found begging."

as educationally subnormal while at school in Lancashire County and Salford City. (Four cases were subsequently excluded—one because he was found to have been mis-diagnosed originally, and had an I.Q. of 114, and three others because they had severe hearing defects). Comprehensive social and psychiatric histories were obtained, medical examinations were done and the subjects were given Wechsler Adult Intelligence Tests. The results of these tests were compared with those of their previous Terman Merrill tests given at ages ranging from 7 to 16 (mean 11) years. Both the uncorrected and corrected (Roberts-Mellone corrections) Terman Merrill scores were compared with the Wechsler scores. Sixteen subjects with definite or assumed signs of brain damage showed a mean I.Q. decrement of 1.2 (based on the uncorrected TM score) and of 5.25 (based on the corrected TM score); on the other hand, 30 subjects who were clinically normal (all of lower working class origin) had a mean increment of 8.3 (uncorrected) and of 4.3 (corrected).

These authors found no differences in the I.Q. increments of the clinically normal subjects among those who came from grossly disrupted families, intact multiple agency families or intact families with another backward child. The increments observed were smaller than those found by Clarke and Clarke (1954) and Clarke *et al.* (1958). Stein and Susser point out, however, that their subjects were younger at the re-test than those of the Clarkes. They also suggest that the small size of their sub-groups may have accounted for the absence of differences between the increments of the sub-groups.

Finally, it has been shown that lack of motivation may cause working class normal and mildly subnormal children to under-score in intelligence tests. Thus, Zigler and de Labry (1962), compared the test performances of a group of clinically normal retarded subjects, of normal working class boys and of normal middle class boys all matched for mental age. In response to the promise of a tangible reward the retarded and working class boys performed better than the middle class boys on a concept switching task. In response to an intangible reward the middle class boys were superior.

Summary

Mildly subnormal persons are mainly identified in countries with universal compulsory education as a result of educational difficulties. In this country and in many others, special education is provided for children specially selected within the ordinary school system. The prognosis after leaving school for the majority of these children is good as is the prognosis for those who in this country have in the past been classified as mentally subnormal when they are referred by the education authorities to the Mental Health Department after they have left school. There is some evidence for a good prognosis among mildly subnormal women discharged from hospitals for the subnormal.

Mild subnormality appears to be a temporary incapacity characterized mainly by educational difficulties experienced at school. Only a small proportion of subjects categorized as mildly subnormal in this country are ever admitted to hospitals for the subnormal.

There are no consistent prevalence rates of mild subnormality. This appears to reflect the somewhat arbitrary criteria employed in the diagnosis. Before the 1944 Education Act, children presently classified as E.S.N. were certified as mentally defective. Since 1944 only those children notified to the Mental Health Departments for supervision on leaving school are classified as mentally subnormal.

While the data show that most of the severely subnormal subjects who do not die at an early age are eventually admitted to hospitals for the subnormal, this should not be taken to mean that this is the only or the best way to cater for their or their families' needs. It is merely demonstrated that they appear, at the present time, to have a type of incapacity requiring a form of special provision for the whole of their lives in contrast to the mildly subnormal whose incapacities and needs are largely temporary. Second, the respective prognoses illustrated for the two grades are valid only for large numbers of cases whereas the prognosis in an individual case requires the skilled consideration of many factors other than the I.Q. Third, while it is clear that the people in the I.Q. over 50 category merge imperceptibly with the community at large, the medium grade I.Q. range 20-49 contains within it a wide variation of capacity which overlaps at the upper end with that of the category of I.Q. over 50.

The Causes of Mental Defect

We have seen that mental defect is not a distinct clinical entity. It is largely a social and administrative concept which enables complex industrial societies to deal with a form of abnormal or deviant behaviour. The extent to which biological factors on the one hand and social or cultural factors on the other are responsible for this deviant behaviour is different for the severely subnormal and the mildly subnormal. Thus, the primary cause of the social and intellectual incapacity of the severely subnormal appears to be observable pathology in the brain; on the other hand, in only a small proportion of the mildly subnormal is such pathology demonstrable. There is evidence that social and cultural factors are very important in the aetiology of mild subnormality occurring in the absence of obvious or presumptive brain pathology. In the absence of detailed clinical and pathological investigations on complete samples of mental defectives, we have at present to rely on studies of hospitalized subjects. These must be interpreted cautiously because of the possible bias of these samples.

Crome (1960) examined the brains of 272 hospitalized imbeciles and idiots. Definite abnormalities were found in 267. Our knowledge of the causes of brain damage among these subjects is still very limited and a definite cause

is identifiable in only a minority of cases. Berg and Kirman (1959) examined the records of 200 imbeciles and idiots, consecutive admissions to the Fountain Hospital. A "definite" causal factor was found in only 9.5 per cent of cases, e.g. iso-immunization and prematurity kernicterus, tuberculous and influenzal meningitis, post-immunization encephalopathy and recessive genetic conditions such as phenylketonuria, galactosaemia and cerebral lipidoses. "Probable" factors were suggested in 4 per cent and "possible" factors in 56 per cent. Twenty-three per cent of the subjects were mongols; these were included among the subjects with "possible" factors. In 31 per cent no causal factor was identifiable. There are no comparable intensive studies of the clinical and neuropathological lesions among the mildly subnormal. Investigations of complete samples in defined populations face the problem of definition and we have seen (pages 373 and 378) that in mild subnormality, unlike severe subnormality, the criterion of I.Q. is not very helpful.

Lewis (1929) observed in his survey for the Wood Committee that most of the mildly subnormal people were clinically "normal". Penrose (1938) found that of 1280 hospitalized mental defectives 627 (49 per cent) were mildly subnormal. Of these he found no organic pathology in 198 (32 per cent) but a further 148 (24 per cent) were classified as "psychopaths". Penrose uses the term to mean psychoneurosis and psychosis. Stein and Susser (1960b) found among 106 subjects born between 1933 and 1937 and selected at random from all subjects classified as E.S.N. in Salford and Lancashire County only 25 per cent had presumptive or obvious signs of brain damage or severe sensory handicaps.

Social Class and Mental Subnormality

The concept of social class can be a useful means for examining the complex interrelations between social and biological factors causing subnormality. It has long been known that in industrial societies parents of severely subnormal children are evenly distributed among all the social strata in the society whilst those of mildly subnormal subjects are predominantly from the lower social classes. This has been shown in surveys of mental subnormality occurring within whole communities (Lewis, 1929; Lemkau, 1943) as well as in surveys of hospital patients (Penrose, 1938; Sabagh *et al.* 1959; Saenger, 1960).

There is now evidence which suggests that mild subnormality in the absence of abnormal neurological signs, epilepsy, electroencephalographic abnormalities, biochemical abnormalities, chromosomal abnormalities or sensory defects occurs only among the lower social classes. Indeed, there is evidence that almost no children of higher social class parents have I.Q. scores of less than 80 unless they have one of the pathological processes mentioned above.

Stein and Susser (1960b) classified the families of their 106 subjects into "demotic" (of the people)—the parents were manual workers and

neither parents nor siblings had attended grammar or technical schools, and "aspirant"—the fathers were white collar workers or of higher social standing or, if manual workers, where a member of the family had been to a grammar school or technical school. They examined all of the children from "aspirant" families and 50 from "demotic" families. All 7 of the children from "aspirant" families showed clinical abnormalities—one had neurological signs, one had a severe hearing defect, one had an abnormal electroencephalograph and four were classified as imbeciles on the criterion of a Wechsler Adult Intelligence Quotient of under 55 and the clinical finding of an "incomplete personality". Of the 50 from "demotic" families 30 were clinically normal.

Stein and Susser (1963), believing that they might have missed clinically normal subjects of "aspirant" families because of a possible bias in the selection of E.S.N. subjects, examined the medical and psychological records of all children referred as "backward" to the Salford school health service from 1955–59. The social standing of the schools which had referred the children was rated independently as of High, Low and Intermediate Standing using "such factors as occupation of parents, residential rating and educational levels in the areas surrounding the schools". The rates of referral for backwardness were found to decrease from the schools of Low Standing (25/1000 children at risk) to those of High Standing (8·7/1000). Thus the schools of High Standing were indeed referring backward children although in smaller proportions. However, 85 per cent of children referred from schools of High Standing scored I.Q.'s of 90 or more whereas 79 per cent of the referrals from schools of Low Standing scored less than 90 and 45 per cent scored less than 79.

In the I.Q. range 50–79 schools of Low Standing referred 10·7 per thousand children at risk compared with 1·3 per thousand from schools of High Standing. In this I.Q. range the referral rates of children without any clinical abnormalities fell from 9·4 per thousand from schools of Low Standing to 1·3 per thousand from schools of High Standing. They also looked for high social class backward children elsewhere in Salford. The private schools in the city failed to reveal any children more than one class behind the average child of the same age. The investigators also examined the results in Salford of the 11-plus group intelligence tests used in the selection of children for secondary education. Among 694 examinees from schools of high standing only 0·9 per cent scored 50–79 compared with 10 per cent from schools of Low Standing. The clinically normal children in this I.Q. range represented only 0·4 per cent of the examinees from schools of High Standing.

The result of the Scottish Mental Survey of 1947 (see page 393) also confirm these findings. In this survey there were no children who scored less than the equivalent of an I.Q. of 86, whose fathers were in the professional class. Of children whose fathers were unskilled the proportion rose dramatically to 26 per cent (Scottish Council for Research in Education, 1953).

Summary

Severe subnormality (I.Q. under 50), a condition which occurs among all social strata of the community, is due largely to organic factors and abnormalities in the brain. The resulting social and intellectual incapacity is severe and leads at present to the subject's permanent dependence.

Organic factors are found to cause a proportion of cases of mild subnormality (I.Q. over 50). The proportion varies according to the definition of mild subnormality used. Thus, if the I.Q. range 50-70 is taken as the criterion of mild subnormality, the proportion of subjects where organic factors are involved is likely to be very small. These cases, like those of severe subnormality, occur in all social strata of the community. Mildly subnormal subjects without neurological signs, epilepsy, electroencephalographic, biochemical or chromosomal abnormalities or without sensory defects like blindness and deafness are almost entirely confined to the lower social classes.

Genetic Factors in Mental Subnormality

For a lucid account of the genetics of mental defect the reader is referred to Penrose's book *The Biology of Mental Defect* (1963). In this section we will discuss briefly the evidence for the genetic causes of mental defect.

There are some rare clinical entities which usually cause severe subnormality and in which the mechanism of inheritance is known to be a recessive gene. These include amaurotic idiocy and such metabolic disorders as phenylketonuria and galactosaemia. However, the genetic contribution to mild subnormality in the absence of clinical abnormalities is more difficult to estimate because of the complexity of the environmental variables known to be associated with mild subnormality.

The theory that this grade of subnormality is due to the additive effect of multiple genes is based on a number of types of evidence. First, Pearson and Jaederholm (1914) and Roberts *et al.* (1938) have shown that the intelligence scores above 50 of complete populations of children assume a Gaussian or Normal distribution. The Gaussian distribution is a random distribution assumed when the quality in question is the resultant of multiple factors, some of which may be genetic. As the I.Q.'s of 50-70 contribute to this distribution it is reasoned that they are part of the normal distribution. By the same reasoning the subjects of I.Q. under 50 are said to be pathological in origin because there are more than would be expected from a Gaussian distribution. This evidence has been questioned by O'Connor and Tizard (1956) who point out that many I.Q. tests have been specially constructed to assume such a distribution.

The second type of evidence is that while the mean I.Q. of the siblings, parents and other relatives of the severely subnormal have normal intelligence, the I.Q.'s of the relatives of mildly subnormal patients are below

average (Penrose, 1938; Halperin, 1945). This might also be due to environmental factors associated with low social class. We have seen (page 381) that the proportion of low social class children with low intelligence quotients is very much higher than in those from the higher social classes. As most of the mildly subnormal have low social class parents the low I.Q.'s of the subjects may be due to an environmental factor common to the lower social classes.

Third, Penrose (1963) has summarized the evidence that the degree of correspondence between the I.Q. levels of the relatives and those of mildly subnormal patients increases with their degree of relationship to the patient in the proportions predicted by the multiple gene theory. He points out, however, that these predictions assume that mating in the population is random. There is evidence (see page 386) however, that people tend to marry within their own social class and to some extent within their I.Q. level. This assortative mating would be expected to produce even higher correspondences than those observed if the additive gene theory were correct.

The other evidence relates to the inheritance of measured intelligence rather than to subnormality. The I.Q.'s of fostered children have been shown to be more closely related to that of their biological parents than that of their adoptive parents. There is also evidence to the contrary. The latter observations may be the result of the administrative policy of placing children of high I.Q. with parents of high I.Q. and vice versa. The problems of assessing this evidence are discussed by Penrose (1963) and Clarke (1958).

It has been shown that the concordance between the I.Q.'s of monozygotic twins is higher than that observed among dizygotic twins, and that the concordance of I.Q.'s of monozygotic twins separated from one another is greater than that among dizygotic twins reared together. This is also critically appraised by Clarke (1958) and by Penrose (1963) who show that even these studies do not exclude environmental factors. A further difficulty in interpreting these results arises because the proportion of subnormal subjects among twins is higher than that among singletons (Berg and Kirman, 1960) and because the birth weight of twins is lower than that of singletons. The relationship of low birth weight to intelligence is discussed on pages 386 and 389.

Cultural Factors and Mental Subnormality

The evidence just summarized suggests the presence of a genetic factor which determines the social and intellectual capacities of individuals. However, the importance of non-genetic environmental factors has also emerged and it has become possible to investigate their contributions. One of these is the cultural factor. In this context the term culture means the social and material way of life. Characteristic ways of life of subsections of a community are called subcultures. Thus, if one uses the categories

of social class within the community it is possible to speak of a working class, middle class or upper class subculture.†

There is indirect evidence that mild subnormality of I.Q. 50-70 in the absence of clinical abnormalities is to a large extent the result of the working class subculture. This theory suggests that given children of the same limited genetic potential from unskilled and semi-skilled working class homes on the one hand and from skilled working class, white collar and professional families on the other, the children from the unskilled and semi-skilled working class subculture will develop to an I.Q. level below that of their genetic equals from the higher social class subcultures. First, the virtual absence of clinically normal children of I.Q. 50-70 from higher social class homes (see page 381) is not easily explained on the basis of genetic factors alone (Susser and Watson, 1962). It has been shown that inter-marriage does indeed take place between the upper and lower social classes (Glass and Hall, 1954). Thus, if inheritance was largely responsible for this condition, it would be expected to occur among the higher social classes although to a lesser degree because of assortative mating.

Second, the effect of the subculture on intelligence appears also to account for the ethnic differences observed of mean intelligence as well as of prevalence of mental subnormality. Klineberg (1940) showed that among U.S. army recruits the average Negro I.Q. in the whole country was lower than that of the Whites but that Negro units from the Northern States scored higher than White recruits from the Southern States.

The higher prevalence rates of subnormality among non-whites than among whites found by Lemkau *et al.* (1943) and the Onondaga Survey (1955) were reduced when the factor of income or area of residence was considered. The lower the income and the poorer the area of residence, the higher the prevalence of subnormality among both whites and non-whites. Lemkau *et al.* also showed that it was much more difficult for negroes than for whites to gain admission to special schools. (These surveys do not give separate rates for severe and mild subnormality. However, it is likely that the preponderance is mainly among the mildly subnormal). Sabagh *et al.* (1959) have shown that the proportion of white and non-white first admissions of severely subnormal subjects to the Pacific State Hospital was equal to their representation in the population among the highly educated but over-represented among non-whites who had been poorly educated. However, mildly subnormal subjects were under-represented among the high and medium-educated whites and non-whites but were over-represented among the poorly educated of both ethnic categories.

† Until recently the term subcultural has been used in the mental deficiency literature to imply inferiority. As there is no objective way of measuring the values implied by this use of the term and as it lacks precision the sociological usage outlined very briefly above will be used in this Chapter. For a detailed review on this subject see Sarason and Gladwin (1958) and Susser and Watson (1962).

The importance of social class appears also to outweigh that of low birth weight as a cause of mild subnormality among clinically normal children. Only among children of birth weight under 3 lbs. is the mean I.Q. lowered (McDonald, 1964; Douglas, 1960). The proportion of these children who are mildly subnormal (I.Q. 50-69) appears to be increased among the boys from the expected 29/1000 (Scottish Council for Educational Research, 1953) to the observed 41/1000. Among the girls the rate observed is only 11/1000 (McDonald, 1964). However, among children born to fathers of social classes I and II McDonald found no decline in the mean I.Q. even of children with birthweights of less than 3 lbs. Both Douglas (1960) and McDonald (1964) demonstrated that within each social class, the mean I.Q. of children of birth weights under 4 lbs and without gross physical abnormalities was not significantly lower than the mean I.Q. of mature children.

Drillien (1961) has found within all social classes that the mean I.Q. of children of 3½ lbs. and less was lower than the mean I.Q. of mature children. However, she appears to have included the I.Q.'s of grossly abnormal children in her computation of the mean I.Q. whereas McDonald and Douglas did not. Douglas, McDonald and Drillien all agree that at every level of birth weight under 4 lbs. (and Douglas shows that at any level of birth weight) the mean I.Q. of children without gross abnormality declines from high to low social class. The incidence of babies weighing less than 5½ lbs or 2500 grams rises from higher to lower social classes (Baird (1962); Registrar General, 1958).

For a full discussion on the relationships between prematurity and social class the reader is referred to the article by Baird and to Susser and Watson. Some of these will be mentioned briefly here. Lower social class mothers who are tall tend to have higher I.Q.'s than those who are small, and are also more likely than the short women to marry husbands from a social class higher than that of their fathers'. On the other hand, short mothers tend to be of lower I.Q. and to marry men of a lower social standing than their own (Illsley, 1955; Scott, 1956). The incidence of the highest prematurity rate in Aberdeen was found among the low social class women who are also short (Baird, *op cit.*).

A mechanism exists by which the unskilled and semi-skilled working class subculture could possibly result in the lowering of the Intelligence Quotient in the absence of brain pathology. Luria (1961) has suggested that language, besides enabling the child to reason in abstract terms, allows it to achieve a high degree of specificity in all of its actions. He has devised ingenious experiments which illustrate the importance of language to the total development of the child at different stages of its development. Bernstein (1960) has suggested that children of unskilled working class parents have a distinct language structure which is lacking in certain components present in that of middle class language structure. Moreover, he has suggested that this form of language might contribute to the social cohesion of its users

and that it is therefore likely to persist. There are also other reasons why the lower working class subculture and many of the social and material disadvantages associated with it are perpetuated in this country. More children of unskilled and semi-skilled than of skilled and professional fathers live in overcrowded homes without standard amenities, go to slum, overcrowded schools (Ministry of Education, 1963), and fail to gain a grammar school place for higher education in spite of their adequate scores at the 11-plus selection examination (Douglas, 1963). They are also likely eventually to do semi- and unskilled work and to find a spouse from these social classes. (Berent, 1954.)

In any attempt to compare the social prognosis of mildly subnormal subjects with that of a control population it is important that the factor of social class is taken into account lest the subnormality is used to explain phenomena which are part of the subculture from which the mildly subnormal arise. Thus, in the United Kingdom lower social class girls marry earlier, their fertility is greater and they have larger families than their higher social class peers (Glass and Grebenic, 1954). More of the former are pregnant at the time of marriage or have children before they are married (Thompson, 1956). The boys from lower social status homes appear to have a higher chance of being convicted of a criminal offence and sent to borstals (Gibbens, 1963).

It is known that the mean I.Q. declines with increasing family size. The results of the Scottish Mental Survey (see page 393) showed that this phenomenon occurs within all social classes. This may also be explained by a cultural factor because the highest means were found among the youngest and the oldest children, that is those children who were likely to have had the greatest degree of contact with adults (Susser and Watson, 1962). Because lower social class families are, on average, larger than those of the higher social classes, this could also lead to a lowering of the mean I.Q. among working class subjects.

Social Class and Minimal Brain Damage

Another environmental explanation for the association of mild subnormality and low mean I.Q. with low social class has been suggested by Lilienfeld and Pasamanick (1955). They presented evidence that the mildly subnormal, although showing no obvious signs of neurological impairment may have "minimal brain damage" due to peri-natal complications. This subject is reviewed by Masland (1958), Masland et al. (1958), MacMahon and Sawa (1961), Knobloch and Pasamanick (1962). In this country peri-natal complications are known to occur far more commonly among wives of lower than among those of higher social class husbands, and there is no sign that these disadvantages are decreasing. The peri-natal mortality survey of all births occurring in this country during a week of 1958 (Butler and Bonham, 1963) showed that unskilled and semi-skilled working class wives were

much less likely than were higher social class wives to have adequate ante-natal care or to be confined in hospital even if this was indicated on clinical grounds. More of their children were of low birth weight (see pages 386 and 389) and they lost more babies as still births, neo-natal and post-neo-natal deaths. A study of 691,640 single legitimate live and still births that occurred in England and Wales in 1949 showed that the lower social classes experienced consistently higher mortality rates even after biological factors like maternal age and parity and social factors like area of residence had been taken into account (Scott *et al.* 1956; Morris and Heady, 1955; Daly *et al.* 1955; Heady *et al.* 1955). Morris (1959) has shown that the gap between the neo-natal mortality rates of the high and low social classes appears to have widened since the last war. Thus, although the mortality rates among all classes have declined, the lower social classes appear to have benefited less than the higher classes from the gains that have been made.

These disadvantages appear to persist into childhood. Working class children, because of the larger size of their families, are more likely than higher class children to acquire infections (Cruickshank, 1958). Douglas and Blomfield (1958) showed that among all single legitimate children born, in a week of March 1946 in England, Wales and Scotland the lower social class mother made less use of welfare clinics than her higher social class peer and that her child was more severely ill than the higher social class child before she consulted the general practitioner.

Summary

Although there is evidence that the social and intellectual capacity may to some extent be determined by additive effect of multiple genes, the cultural factors, i.e. the social and material way of life, appear to be crucial in determining the extent to which the child's genetic potential will be realized. The lower working class subculture appears to be the main factor responsible for the occurrence of clinically normal individuals with I.Q.'s in the mildly subnormal range 50-70. The genetic theory cannot account adequately for the virtual absence of this condition outside of the lower working class although it is known that inter-marriage between the social classes does indeed take place.

The absence of certain components in the structure of lower working class language might be a possible cultural mechanism by which children of I.Q. 50-70 could occur in the absence of brain damage. There are many factors tending to maintain the distinctive lower working class way of life.

It is possible that some of the clinically normal subjects of I.Q. 50-70 may have "minimal brain damage" as a result of peri-natal complications which are known to affect lower working class children more often than those from the higher social classes. These peri-natal disadvantages among the lower social class mothers appear to be persisting in spite of advances

in social and medical welfare. It must, however, be remembered that only a small proportion of children falling into the I.Q. range of mild subnormality (50-70) are ever identified as presenting educational problems of an order requiring special education (see page 373), and decreasing proportions respectively are classified in this country as E.S.N. and mildly subnormal. The social prognosis of the majority of even these categories is good. A still smaller proportion present social problems and are eventually admitted to institutions for the subnormal from which they may yet be discharged and take up their positions in society.

Social Factors Influencing the Incidence of Severe Subnormality

The incidence (that is the inception rate of new cases) of severe subnormality must be distinguished from its prevalence (that is the rate of existing cases). The prevalence is determined by the incidence as well as the duration of the condition and its mortality rates. It is likely that the incidence of severe subnormality is higher among the lower than among the upper social classes although the difference is not as great as among the mildly subnormal. We have seen from prevalence studies of severe subnormality in whole populations that the condition is distributed throughout all social strata in the community (see page 381) but all of these studies show that it is more prevalent among the lower social classes. However, the infant mortality rate is higher among the lower social classes. Thus the preponderance of severe subnormality observed in prevalence studies probably underestimate the excess that probably exists at birth. The reasons for this are likely to be the same as those given in the discussion of peri-natal complications and social class. One of these is low birth weight.

Low Birth Weight and the Incidence of Severe Subnormality

We have seen that low birth weight itself does not appear to be associated with mild subnormality and that the association observed is due to the common factor of low social class. It appears, however, that low birth weight may cause severe subnormality although it is possible that the factor causing the low birth weight also causes the severe subnormality. McDonald (1964) showed that of single children of birth weight 4 lb or less, excluding those with cerebral palsy, blindness or deafness, the proportion of severely subnormal exceeded that expected in the normal population—18/1000 instead of about 3·7/1000. At 3 lb or less the proportion rose to 36/1000. Among singleton children weighing 4 lb or less at birth with cerebral palsy, blindness or deafness, the proportion who were severely subnormal rose to 144/1000. Of all children (twins and singletons) under 4 lb (including blind, deaf and cerebral palsied) 26/1000 scored I.Q.'s of under 50. Because low birth weight is more common among lower social class births (Baird, 1962) this is one possible cause of the excess of severely subnormal subjects among children from low social class families. It is

unlikely in this country to be a numerically important cause of severe subnormality because only 7/1000 of all live births weigh less than 3 lb 4 oz. and just over one third of these (344/1000 in 1962) survive for 28 days (Ministry of Health, 1963). It may, however, become more important because there is no sign that very low birth weight is decreasing but the survival rate of such children is increasing. In 1953 in England and Wales only 313/1000 children of under 3 lb 4 oz. survived 28 days (Ministry of Health, 1954) and Baird (1962) has shown that in Aberdeen between 1948 and 1959 the survival rate in the first week of single births weighing under 3½ lb at birth increased from 346 to 552 per 1000 live births.

Other Social Factors Affecting the Incidence of Severe Subnormality

Both the age of the mother and the birth rank have been shown to influence the stillbirth rate, and the age of the mother at the birth has been shown to influence the incidence of a number of clinical entities associated with severe mental defect. Thus, Heady, *et al.* (1955) showed that primiparity was associated with higher rates of stillbirth at all maternal ages but that at all birth ranks the stillbirth rate increased with maternal age.

The most striking association of a rise in incidence with increasing maternal age is shown by the clinical condition of mongolism. The incidence is low, less than one per thousand births, until the maternal age group 30-34. It then rises rapidly to reach proportions of 2 or 3 per cent in the age group 45-49. The crude incidence of mongolism at birth appears to have remained over a number of years at about 1.5/1000. The evidence is reviewed by Penrose (1963). The association of increasing maternal age with other chromosomal abnormalities and some forms of non-mongol severe subnormality is present but much less pronounced.

Important social consequences may arise from this association with the incidence of mongolism. First, half of all cases of mongolism are born to mothers aged over 36, an age by which most families will have been completed and this is likely to mean that the most difficult stage of child rearing, the early years, will continue well into the parents' middle age. On the other hand, it means that mongol children will be more likely than other severely subnormal children to be born to experienced mothers who have raised other normal children. This may be a possible explanation for the suggestion that most mongol children have an easy and happy disposition. Rollin (1946), Blacketer-Simmonds (1953) investigating hospitalized mongols and Tizard and Grad (1961) on home and hospitalized mongols have questioned this generalization but none of these studies have examined the effect of maternal age and birth rank on behaviour.

Advances in therapy also affect the incidence and the prevalence of severe subnormality. The advent of penicillin as a cure of syphilis has contributed towards the decrease in the incidence of severe subnormality due to syphilis. However, the availability of streptomycin has resulted in an

increase in the incidence of severe subnormality due to tuberculous meningitis, previously a fatal condition (Penrose, 1938; Berg and Kirman, 1959; McLaren Todd and Neville, 1964).

However, the increased survival rates of conditions, the incidence of which has remained constant, may also lead to an increase in the prevalence of subnormality. The increased survival rates at birth of children of very low birth weight has been discussed. The survival rate of mongolism has also increased. Carter (1958) showed that among 700 mongol children attending the Hospital for Sick Children between 1944 and 1955, 30 per cent of live born mongols lived less than 1 month, 53 per cent less than 1 year, and 60 per cent less than 10 years. These findings agree with those of Record and Smith (1955) who found that among 252 mongols born in Birmingham in the years 1942-52, nearly 40 per cent lived less than 1 month, over 50 per cent less than 1 year, and nearly 60 per cent less than 5 years. Carter showed that the mortality for children attending hospital from 1949 to 1955 was 40 per cent lower than those attending from 1944 to 1948. Assuming that the incidence of thongolism has remained constant at about 1.5/1000 live births, the increased survival rates are shown by the increase in prevalence of mongolism in this country. Lewis (1929) found the prevalence of mongolism in the age-group 7-14 to be 0.34/1000. Comparable recent rates are given by Kushlick (1961) in Salford in the age-group 15-19 (0.9/1000), Goodman and Tizard (1962) in Middlesex in the age-group 7-14 (1.14/1000) Kushlick (1964) in the South of England in the age-group 15-19—Counties (1.18/1000) and County Boroughs (1.15/1000). Laurence (1964) has suggested that the survival rates of hydrocephalus may also be improved as a result of early treatment of the associated spinal defects like meningocoele.

*Is the Prevalence of Severe Subnormality (I.Q. under 50)
Increasing or Decreasing?*

It has been shown that the prevalence of this incapacity depends on trends in the incidence, the survival rates and the prognosis of children with this condition. Differences between current prevalence rates and those found by Lewis in 1929 must be cautiously interpreted because the expansion of services for the subnormal since then may have rendered the identification of such cases easier now than in 1926 to 1929, and the standardization of the I.Q. tests used then and now may differ. Such comparisons of current prevalence rates of severe subnormality at comparable ages in surveys in this country suggest that in spite of increased survival rates of mongolism the prevalence of severe subnormality has fallen since 1929. The apparent fall in prevalence may, however, be masking a real increase in the prevalence of severe subnormality as we now see it, i.e. characterized by permanent severe incapacity.

Thus, Tizard (1962) showed that the prevalence of severe subnormality in the age-group 7-14 had decreased from Lewis's figure of 3.71/1000 in the urban areas to 3.45/1000 in Middlesex in 1961; in the same period the prevalence of mongolism increased from 0.34 to 1.14/1000. They interpreted their findings cautiously as reflecting an apparent decrease in the prevalence of non-mongol severe subnormality. Similar apparent decreases have been found by Kushlick. The prevalence of severe subnormality in the age-group 15-19 in Salford in 1961 was 3.62/1000 and in the Wessex County Boroughs in 1963 it was 3.54/1000. Kushlick (1964) found the apparent decrease in the rural areas to be even higher. Lewis's 1926-29s rate in the rural area was 5.61/1000 in the age-group 7-14 compared with the 1963 rate of 3.84/1000 in the Wessex Counties in the age-group 15-19 in spite of the increased prevalence in 1963 of mongolism.

On the other hand, there is also evidence of an increase in prevalence. The total prevalence rates of severe subnormality and the rates for those aged 15 and over were higher in Salford in 1961 than those found in Lewis's Survey in 1926-29 (See Table 4). Kushlick (1961) reconstructed the Salford Register of severe subnormality for 1948 and showed that between 1948 and 1960 the total prevalence of idiots had increased by 83 per cent and that of imbeciles by 38 per cent.

The author favours the explanation of this paradox that Lewis's severely subnormal subjects in the age-group 7-14 might have included a large proportion of non-brain damaged subjects with temporary incapacities similar to the subjects with mild subnormality whereas most of the severely subnormal children in the recent surveys are brain damaged and permanently handicapped.

TABLE 4. PREVALENCE RATES OF SEVERE SUBNORMALITY
PER 1000 IN EACH AGE-GROUP
(Salford 1961 and England and Wales 1926-29)

Age	Salford 1961	England † 1926-29
0-4	0.89	0.69
5-9	1.62	3.09
10-14	2.55	4.35
15-19	3.62	2.84
20-29	3.44	2.07
30-39	3.77	1.49
40-49	2.47	1.22
50-59	1.70	0.90
60+	0.52	0.48
Total:	2.24	1.87

† Calculated from Lewis (1929) Tables 17 (A) and (C), and Penrose (1963), p. 23.

Table 4 shows that the prevalence of severe subnormality in Salford remains fairly constant between the ages of 15 and 40 suggesting that these subjects continue to require supervision in or out of hospital until they die. However, the 1926–29 rates drop immediately after school-leaving age like the rates for the subjects with mild subnormality. This suggests that some of Lewis's severely subnormal subjects in the age-group 7–14 might have adjusted sufficiently well to the demands of society and that Lewis's rates in the subsequent quinquennium 15–19, are a truer reflection of the prevalence of severe subnormality characterized by permanent incapacity. It is, of course, possible, as Lewis himself suggests, that there were large numbers of severely subnormal people aged 15–19 unknown to the agencies used as sources by Lewis. Such agencies as the Labour Exchanges and the Public Assistance Committees might have been expected to know of the large numbers of unemployed imbeciles anticipated from the difference in rates between the age-groups 7–14 and 15–19—the unemployment rate was very high at the time of this survey.

As the prevalence is likely to continue to increase until the survival rates have reached a maximum, the already overcrowded facilities for the severely subnormal will have to be enlarged to meet their needs because it appears at present that all severely subnormal (I.Q. under 50) subjects are to some extent permanently handicapped.

Is the Prevalence of Mild Subnormality (I.Q. over 50) Increasing or Decreasing?

It is much more difficult to estimate the trends of mild subnormality because unlike severe subnormality in which an I.Q. of under 50 appears to have considerable predictive value, the majority of people in the I.Q. range of mild mental subnormality (50–70) appear to adjust to the demands of society after leaving school and the criterion of the I.Q. in this range has little predictive value.

However, the social policy of most Western countries towards the mildly subnormal has been based on the prediction that only by their sterilization and/or segregation in colonies during the child-bearing period of their lives would an increase in the incidence and prevalence of mild subnormality be prevented. This prediction was based on the observations that these subjects came from families of above average size and the theory that the qualities which led to their social failure were both inherited and permanent. We have seen (page 383) that the theoretical basis of these predictions has been questioned by later investigations. The prediction of a fall in national I.Q. level has also been shown to have been incorrect.

The results of the Scottish Survey of the intelligence of 87,498 11 year-old children in 1932 and of 70,805 children in 1947 showed that the mean I.Q. had, if anything, increased from 34·5 points (S.D. 15·5) to 36·7 (S.D. 16·1)

due to the reduction in the proportion of low scorers (Scottish Council for Research in Education, 1949).

For other assessments of the trend of the problem of mild subnormality we must rely on numbers of people receiving the services for this category of person. This is an unsatisfactory method as there has always been a shortage of these provisions and increasing provision is more likely to reflect improvements in the quality of the services than real increases in the extent of the conditions for which services are being provided. Thus, in this country provision for E.S.N. children has increased. Whereas there were 11,000 in E.S.N. schools in 1946, the present number is 40,000 and estimates suggest that 40 per cent of these children have I.Q.'s of over 70 (Ministry of Education, 1963). There are 10,000 children on the waiting list. It has been suggested that the number of places be increased to 54,000 (Ministry of Education, Circular 11/61, 1961). Assuming that all children of I.Q. 50-70 should have special education and that they constitute 2 per cent of the school population the number of places required will be about 140,000 for these children alone.

In the only study which has measured the change in prevalence of mild subnormality known to a whole community, Kushlick (1961) found that between 1948 and 1961 there had been no change in the prevalence of mild subnormality known to the Mental Health Department in Salford. The changes envisaged in the Mental Health Act of 1959 will undoubtedly cause a decrease of the known mildly subnormal because it is no longer necessary for Local Education Authorities to refer cases for supervision after leaving school.

The proportion of mildly subnormal people in hospitals for the subnormal has decreased since 1938, and there is evidence that the absolute number may also have declined since 1951. Thus, Penrose (1938) found that half of the cases in his investigation were mildly subnormal. O'Connor and Tizard (1956) found 52 per cent of all cases and 58 per cent of those of 16 and over in their survey of London, Surrey and Kent hospitals were mildly subnormal. The Board of Control (O'Connor and Tizard, 1956) found in 1949 among long-stay cases 60 per cent of mildly subnormal among those aged 16 and over. In 1954 Cross (quoted in O'Connor and Tizard, 1956) found 50 per cent of mildly subnormal among those aged 16 and over. Leeson (1962) found in 1959-60 among Manchester Regional Hospital Board inmates of hospitals for the subnormal 38 per cent at all ages and 40 per cent of those aged 16 and over were mildly subnormal. Kushlick (1961) found that both at all ages and among those aged 15 and over, the mildly subnormal from Salford in hospitals for the subnormal accounted for 36 per cent of the inmates. Kushlick (1965) found among the Wessex subnormal people in hospital in 1963 that the mildly subnormal accounted for 37 per cent of all ages and 40 per cent of those aged 15 and over. There is also some evidence that while the number of hospitalized mental defectives in England

and Wales has risen from 62,927 in 1951 (Registrar General, 1955) to 64,622 in 1963 (Ministry of Health, 1964) the absolute number of mildly subnormal adults appears to have fallen. O'Connor and Tizard (1956) found that 88 per cent of the hospitalized subjects in their 1954 survey were over 16 and we have seen that at that time about 58 per cent of all adult inmates were mildly subnormal. Applying these rates to the 62,927 inmates in 1951, 55,300 would have been adults and of these 32,000 would have been mildly subnormal. Later surveys have shown that the proportion of adults in hospital is now 86 per cent and we saw that the proportion of mildly subnormal adults has fallen to 40 per cent. Applying these rates to the 64,622 inmates in 1963, 55,600 would be adults and of these 22,200 would be mildly subnormal.

A similar result of a fall in the number of hospitalized mildly subnormal is obtained by applying the average hospitalization rate for mildly subnormal adults in Wessex and Salford to the 1963 population of England and Wales. Thus, the rate of 65/100,000 hospitalized mildly subnormal applied to a population of about 47 million gives a figure of 30,500 such inmates.

The fall in these numbers is probably due to a number of factors. The discharge rate of subnormal patients doubled in 1956 and has remained high ever since. The length of stay of people discharged has also decreased (Registrar General's Supplement on Mental Health, 1960-61). Unless there is a high re-admission rate, the numbers of chronic mildly subnormal patients should continue to fall.

Many of them were compulsorily hospitalized in the past because of the wide definitions of mental defect and the large number of conditions which rendered mental defectives "subject to be dealt with" under the Mental Deficiency Act. When such problems arise today they are probably handled by social agencies not specifically concerned with mental defect.

The proportion of legally detained patients is now comparatively small. On the 31st December, 1963 in England and Wales 5323 (8.2 per cent) of the 64,622 subnormal people in psychiatric hospitals were legally detained and 1112 (1.7 per cent) were detained in the special security hospitals, Rampton and Moss Side (Ministry of Health, 1964). There has been very little systematic study of this problem. It is likely that if the recent liberalizing of custodial regimes in the hospitals for the mentally ill is adopted by the hospitals for the subnormal, the difficulty of meeting the requirements of a minority of the subjects may be passed on to the state security institutions. Systematic epidemiological studies into the reasons for, and the effects of, custodial care of subnormal subjects are urgently needed.

At present in this country people of limited capacity are, like everyone, benefiting from reasonably full employment. If, however, the introduction of automation is allowed to create problems of mass unemployment, as it has in the United States, it is clear that the mildly subnormal and the people in the social classes from which they come will be severely hit.

Social Factors Leading to the Classification of People as Mildly Subnormal

We have seen that only a minority of subjects in the I.Q. range 50-70 and others of even higher I.Q. are classified and dealt with as mildly subnormal. This selection appears to depend largely on their having behaviour disorders which create disturbances outside of the family. It also appears that these behaviour disorders are caused by the subjects' child-rearing experiences in profoundly broken homes and multiple placements in residential institutions or foster homes.

Burt (1937) observed that there was a much higher preponderance of boys to girls in the special classes and special schools than in the population from which the children were drawn. He also showed that there was an excess of such children from lower social classes and from broken homes.

Stein and Susser (1960) found in their follow-up study of E.S.N. school leavers that those children who had lived in a family which provided them for the first 10 years of their lives with a set of enduring relationships had significantly better occupational histories than those who had spent their first 10 years of life in foster or children's homes. Even children from intact families known to one or more social agencies as problem families had favourable prognoses. Thus, 7 out of 10 male subjects reared for almost the whole of their first 10 years of life in children's homes or foster homes had legal charges against them compared to 17 out of 50 from normal intact families and 5 out of 8 from problem families. 6 out of 22 subjects of both sexes who came from broken homes had been admitted to hospitals for the mentally subnormal. Only 1 of the remaining 84 was so admitted. Saenger (1960) found that only 23 per cent of mildly subnormal subjects in institutions had both parents compared with 56 per cent of subjects living in the community. The corresponding percentages among imbecile subjects (I.Q. 20-49) were respectively 56 per cent and 92 per cent. Saenger (1960) and Leeson (1962) have also shown that in contrast to imbecile subjects who were admitted to hospital on parental initiative because of problems within the home, (either the subjects made heavy demands on an intact family, or the death or illness of a family member made it impossible to care for the subject at home) mildly subnormal subjects were admitted on the initiative of minatory agencies such as the police acting on their own initiative or with the support of parents because of disturbances caused by the subject outside the home. Leeson (1962) found that there were comparatively few mildly subnormal subjects on the Manchester Regional Hospital Boards' waiting list because most of these cases were admitted as emergencies directly from the courts.

These findings suggest that the social inadequacies of those subjects who fall into the hands of the social agencies and are classified as subnormal may arise from a lack of social skills normally acquired by children within their own families (Parsons and Bales, 1956). Their problems may also arise from the possession of social skills learned in and appropriate to large authori-

tarian institutions, but which prove dysfunctional when the subjects have to adjust to the complexities of social relationships outside of institutions (Goffman, 1957; Coser, 1962).

Social Factors Affecting the Degree of Incapacity of the Severely Subnormal

We have seen that most severely subnormal subjects will be to some extent socially and economically dependent for the whole of their lives and that most of them will, at some time, require admission for residential care. The degree of their incapacities may be determined by the extent and nature of the organic brain pathology but social factors have been shown to be important in determining how far the limits set by the organic factors will be realized. The legal and clinical definitions of severe subnormality have implied a poor prognosis and have suggested that these children are "ineducable" and we have seen that in this country and in other Western European countries they are excluded from school. In the absence of well designed experiments which could assess the effect of highly qualified teaching on the prognosis of children suspected of being severely subnormal our knowledge of their potential comes from epidemiological studies of existing cases of recognized subnormality as it has been dealt with in the past and from small experimental studies. They suggest that these children are actually being retarded by some of our present methods of care either by being deprived of education by trained teachers or by institutionalization in hospitals which fail to provide the quality of care which has long been known to be necessary for the growth and development of normal children. However, the low standard of services may be maintained because designers of social policy feel that the inherent poor prognosis does not warrant the provision of better services.

The reason for the inadequacy of follow-up studies of children diagnosed as severely subnormal lies partially in the difficulty of making such a diagnosis at an early stage in the child's development. Doctors may also be reluctant to suggest such a diagnosis because of their fears as to the prognosis and because of the lack of adequate facilities to deal with the problem once a diagnosis has been made. Illingworth, who claims that a diagnosis of mental subnormality can be made in infants (1961) followed up 122 infants in whom he had made the diagnosis of mental inferiority in the first year of life (58 in the first 6 months and 64 in the second 6 months). Cases of mongolism, hydrocephalus and cretinism were excluded. Of the 122 cases, 30 died within 5 or 6 years of birth. All 10 cases who had post mortems showed gross abnormalities of the brain. Of the 92 survivors, 4 could not be traced and one was severely deaf. Of the remaining 87, 6 had an I.Q. of 100 or more on follow-up examinations; 3 had a score of 90-99; 9 had a score 80-89; 8 had a score of 70-79; 10 had a score of 50-69;

and 51 had an I.Q. score of less than 50. It was known that 3 who died were idiots. Thus, apart from obvious conditions like mongolism, hydrocephalus and cretinism, Illingworth was able to identify 65 out of 87 (75 per cent) survivors scoring I.Q.'s of under 70. However, only 51 out of 87 (59 per cent) were severely subnormal (I.Q. below 50); 41 per cent proved not to be severely subnormal and 21 per cent were not intellectually subnormal by any standard.

There is a wide range of incapacities among those classified as severely subnormal. Kushlick (1961) found that 0.72/1000 (20 per cent) of 3.62/1000 severely subnormal subjects surviving to the age-group 15-19 were idiots (I.Q. under 20). Tizard and Grad (1961) measured the Vineland Social Ages of a random sample of 250 idiots and imbeciles at home and in hospital. Of those aged 16, over 23 per cent had social ages of 0-2 years, 18 per cent of 3-5 years, 43 per cent of 6-9 years and 14 per cent had social ages of 10 years or more. Similar proportions were found among children aged 11-15 but among the younger children the proportion with low social ages was increased both as a result of their lower chronological ages and because they included a higher proportion of idiots. The authors point out that the scores obtained by subjects in hospital may underestimate their abilities because they had no opportunity to do the things assessed in the Vineland test. This lack of opportunity may also have actually retarded the subjects. Severe motor impairment, due largely to spasticity was present in 15 per cent of children and about 10 per cent of adults. Behaviour problems rated as "uncontrollable" and "too low grade to rate" were present in a quarter of the children. However, among adults the main problem was "underactivity". This was present in nearly 30 per cent. The wide range of I.Q.'s obtainable by mongols who constitute almost a third of the severely subnormal subjects was shown by Dunsdon *et al.* (1963). They estimated that 6-7 per cent scored I.Q.'s of 45 while 1-2 per cent scored 55 and over. Rare mongols due to chromosomal mosaics may have normal I.Q.'s. (Dent *et al.*, 1963.)

Adult imbeciles previously believed unemployable have been taught fairly complex industrial skills (O'Connor and Tizard, 1956; Clarke and Clarke, 1958). Tizard (1962) has reviewed the subject of treatment of subnormality in its broadest sense.

The retarding effect of traditional institutional placement on severely subnormal subjects has been demonstrated. Lyle (1959, 1960a and b) and Shotwell and Shipe (1964) have shown that admission of imbecile children to large hospitals for the mentally subnormal depresses their verbal I.Q. scores compared with those who live at home. Tizard (1960 and 1964), has shown that this may be due to the social structure of the institution rather than to the institutional placement itself. He removed a sample of imbecile children from a large institution where they had had daily formal education, to a residential unit where the children lived in small family groups, learned informally through play and close contact with adults and had their own

supply of clothes and toys. These children not only lost many anti-social features of behaviour and signs of psychoneurosis, but they also gained significantly in verbal I.Q. over a matched control sample who stayed in the institution where they received formal education. The increment in performance I.Q.'s of the control group was slightly greater than among the experimental group but the difference was not statistically significant. Tizard (1964) has described the possible harmful effects on such children produced by the "conveyor-belt" systems of feeding, dressing and toileting them in large institutions.

The importance of social contact to the development of the child and the retarding effect of isolation has also been shown. Clarke (1960) has reviewed a number of cases of illegitimate children locked up in extreme isolation by their mothers until they were rescued at ages varying from 6-10 years. With the exception of one child who continued to function at idiot level, their performance appears to have improved dramatically as did their ability to speak, and in one case, to read and write.

Even within their families severely subnormal children are likely to be at a disadvantage. The parental problems may lead to anxiety and conflict in their dealings with the child. Parents may also find it very difficult to tolerate behaviour appropriate to the child's mental age, and to adjust their own expectations accordingly. Thus, they may be intolerant of, and discourage in a 7 year-old child with a mental age of 2, behaviour which is acceptable in a child of chronological age of 2, but embarrassing in one of 7. In this way, the child may be deprived of indulging in experimental behaviour which is important to its socialization (Hulme, 1964). On the other hand, infantile behaviour may also be encouraged either because parents under-estimate the capacities of the child or because infantile behaviour is more easily manageable than that of a robust active child. Woodward (1963) has shown that adverse factors at home were associated with behaviour disorders of severely subnormal children admitted to hospital.

The Uses of Epidemiology in Assessing and Developing the Services for the Subnormal

The epidemiological approach lends itself to the development of a service which can both anticipate and deal with problems which are known to be present a long time before they come to the notice of the existing services, often worsened by delays (Morris, 1957). Many studies suggest strongly that much of the therapeutic and social pessimism which surrounds the subject of subnormality is the result on the one hand of ignorance, and on the other, of lack of adequate facilities.

There are systematic studies which have investigated the extent to which, and the reasons why, our sophisticated diagnostic genetic counselling and social work services are failing to meet the needs (Holt, 1958; Tizard and

Grad, 1961; Deisher *et al.* 1962; and Hudson, 1963) or failing to accept responsibility for long-term guidance (Rutter, 1964). Indeed, one of the most exciting fields for advance in modern medical care awaits the incorporation of the existing body of knowledge into the existing services for the chronically ill in general, and the mentally subnormal in particular.

Sociological studies of the changing structure and function of the "normal" family in industrial societies (Parsons and Bales, 1955; Young and Wilmott, 1957) have revealed important mechanisms for the stress created by a chronically handicapped (deviant) member of the family (Susser and Watson, 1961). Moreover, other studies (Hollingshead and Redlich, 1958; Bernstein, 1964) have focused attention on unrecognized difficulties of communication which arise between the professionals and their clients because of their different social class origins. These findings have led to systematic studies of the problems of families of the subnormal (Holt, 1958; Leeson, 1960; Tizard and Grad, 1961; and Susser and Watson, 1962) and these are now well understood. Katz (1961) has described the evolution and function of the voluntary organizations run by the parents of the mentally handicapped. It is now possible to deal with and relieve many of the family difficulties by the use of specialist services, whereas not long ago they were regarded as insoluble or remediable only by institutionalizing the subject.

Similarly, major advances have been made in the education and training of both the severely and the mildly subnormal (see Ministry of Health, 1962; Tizard, 1964). Two useful texts on the education of the severely subnormal are Neale and Campbell (1963) and Gunzburg (1960).

There are still major administrative problems involved in integrating the available professional skills into a single service able to provide continuous care to the subject and his family. However, the availability in sufficient numbers of the basic facilities required may go a long way to meeting some of these difficulties. Moreover, adequate evaluation of these services should provide answers to some of the existing questions. The most recent prevalence rates of subnormality in this country are, therefore, offered as the basis for developing and assessing the adequacy of some existing services in this country and, perhaps, in similar highly industrialized countries.

We will now consider the type and number of day and residential facilities needed in a comprehensive service for all the mentally subnormal people arising in an area of 100,000 people. Because of the difficulties of defining mild subnormality in surveys (see page 373) the figures given will deal mainly with the severely subnormal. From these rates the requirements of demographically comparable populations of any size can be roughly estimated. The rates can be used not only to plan new services, but also to measure how far existing facilities in an area are meeting the community's needs.

There are also good reasons for actually developing such comprehensive services for areas of 100,000 people. First, in this country the medical, psychological, educational and recreational facilities used by the whole

community, and needed also by the subnormal, are being currently developed to serve catchment areas of about this size. Obvious examples are the district general hospitals which supply the highly specialized diagnostic and therapeutic services, the educational and training facilities of the Local Education and Health Authorities, the social work services of the Local Health and Welfare Authorities and the child guidance clinics. Catchment areas of this size make these services readily accessible to the people who need them and to one another. Second, the residential units needed for the severely subnormal subjects of these catchment areas, if situated in these areas, would, in addition to being accessible to the people needing them and the other services, be very much smaller than those currently in use in this country and in most other highly industrialized countries.

We have seen that the main function of long-term residential care is to provide a substitute family for those people whose own intact families are unable to cope with the subject's excessive demands, or whose families because of illness or death are unable to manage even the "reasonable" demands of the subjects. Smaller units may be better able to provide the care and socialization needed by them than the larger wards currently used in bigger institutions serving wider catchment areas. The advantages of small homes for normal children in need of such care has long been recognized in most advanced countries; the potential advantages of such units to the severely subnormal have also been demonstrated. Moreover, much is known of the disadvantages of the existing large institutions for the subnormal (Tizard, 1960, 1964).

There are also a number of sociological studies of the problems inherent in the management of large bureaucratic organizations in general (Blau, 1963; Goffman, 1957) and psychiatric hospitals in particular (Caudill, 1958; Belknap, 1956; Jones, 1953; Stanton and Schwartz, 1954; and Parsons, 1957). These show that many aspects of the complexity of the relationships in these organizations are often not understood by the people in authority, and that the explicit goals of the organizations are often deflected by unrecognized but inherent problems of management. In addition, isolation of these "total institutions" may lead them to develop a system of values different from that accepted as normal or humane in the society outside (Goffman, 1957).

Thus the estimates of the number of residential places needed by the severely subnormal arising from an area of 100,000 people provide not only the basis for developing small units as part of a comprehensive service, but also for evaluating them and discovering the disadvantages associated with them (Tizard, 1965; Kushlick, 1965).

We have seen that the prevalence of severe subnormality in both rural and urban England is at present about 3.7/1000 in the age-group 15-19. The prevalence at earlier ages must be at least as high because of the excess early mortality rate among these children. In a community

of 100,000 people with an annual birth rate of 16/1000 (the average in England and Wales from 1948-62), 1600 children would be born every year and there would be about 25,600 children aged under 16. We would expect to find in this community nearly 100 (25.6×3.7) severely subnormal children; 30 aged 0-4 and 66 aged 5-15. From these figures we can estimate roughly how many places would be required to serve the severely subnormal in a community of 100,000 people.

Crèche facilities are needed for the 3 and 4 year-olds: about 12 places. About 2 of these children were, in 1963 in institutions for the subnormal, a further 1 was awaiting admission and only one had training in day centres, leaving three quarters without special services. (Such facilities are also needed for the slow developing children of lower social class origin particularly those from broken homes. Kirk (1958) has shown that these children benefit from a pre-school education programme.)

The number of school-age children who require special schooling (training-centre places) will depend on the rate at which they are excluded from the ordinary school system. In the Wessex Region in 1963, of the 66 severely subnormal children estimated to be present in this age-group, about 20 were in the ordinary educational system, leaving 47 who were excluded and for whom alternative facilities were required. Of the 47, 16 were already in institutions and 3 were awaiting admission; 22 were attending day training-centres and about 7 were at home receiving no training. There were also about 12 children of I.Q. over 50 who had been excluded from school—3 were already in institutions; about 6 were attending day training centres and 3 were at home receiving no training at all.

These estimates, based on the results of surveys in London, Salford and the Wessex Region of Southern England, show:

1. That if each population area of 100,000 people were to provide about 25 places for the residential care of all grades of subnormal children aged under 16 arising in the area, there would be no children in the existing hospitals for the subnormal nor on the waiting lists for admission.†
2. That if these areas were to establish such units as part of a comprehensive service for the subnormal in the area, the present day-training centre facilities would have to be expanded over the present number of about 32. Additional places would be needed for the 20 children presently in hospitals as well as for the 10 children of school age and some of the 9 children aged 3 and 4 who are living at home receiving no training—a total of about 75 places.

The rate of junior training centre provision in England and Wales was 30/100,000 in 1963 (Ministry of Health, 1964). In 1962, 8 per cent of 145

† Of the 20 children then in institutions 6 were bedfast; 4 of the remaining 14 ambulant children had severe behaviour disorders—2 were also incontinent. Only 4 of the remaining 10 children who were ambulant and free of any behaviour disorders were incontinent (Kushlick, 1965).

Local Health Authorities had more than 70 junior training centre places per 100,000 of the population and only 17 per cent planned to have this level of provision by 1972 (Health and Welfare 1963).

Whereas the prevalence rates of severe subnormality at 15-19 years are likely to include nearly all cases surviving to this age (see page 372). Rates after this age are more likely to reflect the availability of services in the areas surveyed, i.e. 'administrative prevalence'. Thus, it is likely that there may be middle-aged subjects living at home unknown to the services because there were no services at the time they first presented problems. Such cases may, unknown to their Local Health Authorities, also be distributed among hospitals for the subnormal, chronic hospitals and hospitals for the mentally ill all over England and Wales because of the policies prevailing 20 to 30 years ago. The existing figures do, however, provide the best available rough guides to administrative needs.

These figures also reveal the existing lack of facilities. Thus, the number of known severely subnormal adults aged 16 and over per 100,000 of the population was 129 in Wessex and 184 in Salford (Kushlick, 1965). Of the Wessex subjects, 74 (58 per cent) were in hospital, and of the remaining 52 living at home only 19 were receiving training in adult training centres. 70 (61 per cent) of the Salford subjects were in hospital. The rate of adult training centre provision in 1962 was 24/1000,000 in England and Wales, 30/100,000 in Wessex and 55/100,000 in Salford. (Health and Welfare, 1963.) If each area of 100,000 people is to provide residential care for their severely subnormal adults presently in hospitals for the subnormal, they will need additional accommodation for about 75 people. Between 135 and 184 training centre places will be needed if every severely subnormal adult is to receive training.† We have no idea what proportion of the 75 subjects presently in hospital are receiving any training. Nor do we know the proportion of these subjects who are so retarded that they are 'untrainable'.‡ We are only likely to find out by experiment. Because the prevalence of severe subnormality appears to be relatively consistent throughout urban and rural areas of England (see page 370), there is an opportunity to compare, in demographically comparable areas of 100,000, the results of a comprehensive experimental service in one area with those of a traditional control service in the other area. (Kushlick, 1964 and 1965.)

The needs of the mildly subnormal adult are more difficult to estimate. We have seen that problems arise largely among those from broken homes and that they occur mainly during adolescence. Stein and Susser (1960)

† This is made up of the present 29 adults in Local Health Authority training centres, plus the 32 severely subnormal adults not receiving any training, plus the 74 adults in hospitals for the subnormal.

‡ Preliminary results of the Wessex Survey suggest that 70 per cent of severely subnormal adults in institutions are continent ambulant and free of behaviour disorders, and that 50 per cent are being trained or are usefully employed.

and Tizard (1964) have estimated their need for hostel places during this phase of their development. There are, however, between 60 and 70 mildly subnormal adult subjects per 100,000 of the population presently in hospitals for the subnormal (Kushlick, 1965). There is evidence, however, that when they are discharged or die, their places may not be taken up by other mildly subnormal people (see page 394).

Compulsion and Services for the Subnormal

The services for the mentally disordered have evolved from a stage where legal and bureaucratic authority was used to care for and control patients and their families, to the present time when it is possible to use skilled professional authority and personal relationships to achieve these ends (Susser, 1961). The aspects of legal compulsion which remain, such as exclusion from school, removal of children from their families and detention of patients in hospital, need to be continuously evaluated with the object of maximizing the place of skilled professional authority which is accepted voluntarily by patients and their families because of their confidence in the service. The possibility that persons may be unnecessarily detained and deprived of their rights as a result of being classified subnormal or severely subnormal has led the Working Party of the B.P.S. (1963), to recommend that among adults the upper level of subnormality should be fixed at a W.A.I.S. I.Q. of 70 points, and that of severe subnormality in which detention after the age of 25 years is easily effected, at 55 points. It is doubtful whether the implementation of this recommendation would do much to solve the problem. We have seen that the behaviour difficulties of the mildly subnormal (I.Q. 50-70) who are eventually admitted to hospitals for the subnormal arise largely from their lack of socialization within a family during the first 10 years of their lives, rather than from their low I.Q. level. Their needs, like those of children with higher I.Q.'s from similar backgrounds, would appear to require a combination of continuous, specialized social work, psychological, psychiatric, educational and recreational services within a substitute family until they have passed the critical stage of adolescence. In the absence of such a service the individuals of I.Q. over 70 now dealt with as subnormals would, because of the minor acts of delinquency committed by the men and the promiscuity of the women, merely be diverted to social agencies like the prisons and the welfare departments. At present, none of these agencies is staffed or equipped to meet these subjects' needs. Only the provision of alternative services relevant to the needs both of patients and their families is likely to prevent the inappropriate admission of such people to hospitals for the subnormal.

Thus, from our knowledge of the epidemiology of mild subnormality we can also see the limitations of the proposal in the early part of this century to lower the incidence of mild subnormality by a programme of compulsory sterilization. If every person in the I.Q. range 50-70 (about

2 per cent of the whole population) were sterilized, the resulting decrease in the incidence of mild subnormality might be of the order of less than 10 per cent. Thus, Penrose (1938) found that over 90 per cent of the mildly subnormal in his hospital survey had parents of normal or dull-average intelligence. The importance of family disruption as a cause of hospitalization of mildly subnormal subjects might even have led to an over-representation in his sample of subjects with mildly subnormal parents. No government other than that of the Nazi's has ever suggested a hideous programme of this sort. However, some countries still practice compulsory sterilization of "certified", "ascertained" or hospitalized mildly subnormal people. Such a programme is unlikely to make any real impact on the incidence of the condition because of the very small proportion of people in this I.Q. range who are ever "ascertained" or hospitalized. We have also seen that there has not been any decline in the national intelligence although social policy towards the mildly subnormal had been planned on the prediction of such a decline. Penrose (1963) has suggested that although environmentally induced increases in height and intelligence may be masking a genetic decrease, the risk of "national degeneration" is both speculative because the evidence is to the contrary and academic because we cannot predict now the human qualities which will be needed by future generations. There is little doubt, however, that voluntary sterilization to limit family size may often relieve family problems and this should, of course, be made available to people who choose it.

Finally, it has been shown by Belknap and Steinle (1963) that the quality of medical care in comparably staffed and equipped hospitals is very much higher in those hospitals where the influential political and economic figures in the locality participate in the hospital administration, and where the attitudes of these people favour the provision of a high standard of service to the community as a whole. This finding is probably of great importance to the services for the subnormal. In the present atmosphere of community tolerance of the subnormal and full employment it is likely that radical improvements to the service might be possible if there were to be a move in this direction by skilled and well-informed professionals in the field.

APPENDIX

(See Table 3)

Prevalence surveys of mental subnormality: References, dates of surveys, populations sampled, methods of identification and criteria of grading used.

Author	Area Investigated	Date	Population sampled
1. Lewis (1929)	England and Wales	1926-29	6 rural and 6 urban areas of 100,000 people each.
2. Lemkau <i>et al.</i> (1943)	Baltimore	1936	Urban area of population 55,000.

Author	Area Investigated	Date	Population sampled
3. Onondaga (1955)	Onondaga County	1955	Urban area of 116,000 children under 18 years.
4. Åkesson (1961)	Rural Sweden	1959	10 rural parishes of total population 11,500.
5. Kushlick (1961)	Salford	1961	Urban area of 153,000.
6. Goodman and Tizard (1962)	Middlesex	1960	Urban area of 451,800 aged 0-14.
7. Kushlick (1964)	Wessex County Boroughs Counties	1964	Urban area of 46,000 aged 15-19.
		1964	Urban and rural area of 90,000 aged 15-19.

How the Subjects were Identified

- Children — 1, 2, 3 and 4. All children both at school and known to social agencies.
5. Children known as mentally subnormal to Mental Health Department only.
6. As in 5 plus special schools, approved schools and private homes.
7. As in 5 plus hospitals, private homes and hostels.
- Adults — 1. All adults known to all social agencies — score I.Q. under 65.
2. All adults known to all social agencies diagnosed as mentally defective.
4. All adults in population scoring I.Q. under 70.
5. All adults known as mentally subnormal to M.H.D. only.

Criteria for Grades

- Only in 1 and 5 are grades recorded by age for all age-groups.
1. Children — I.Q. under 45-50; I.Q. 45-50 to 70.
Adults — I.Q. under 40-45; I.Q. 40-45 to 60-85.
- 5, 6 and 7. I.Q. under 50; I.Q. over 50.

REFERENCES

- (1929) Report of the Mental Deficiency Committee being a Joint Committee of the Board of Education and Board of Control (Wood Report). London: H.M.S.O.
- (1949) Scottish Council for Research in Education. The Trend of Scottish Intelligence. London: London Univ. Press.
- (1953) Scottish Council for Research in Education. Social Implications of the 1947 Scottish Mental Survey, XXXV. London: London Univ. Press.
- (1955) A Special Census of Suspected Referred Mental Retardation, Onondaga County, New York. Technical Report of the Mental Health Research Unit. (Mimeographed).
- (1955) The Registrar General's Statistical Review of England and Wales for the Two Years 1950-1951. Supplement on General Morbidity, Cancer and Mental Health. London: H.M.S.O.
- (1956) and (1963) Ministry of Health on the State of Public Health. The Annual Report of the Chief Medical Officer of the Ministry of Health for the Year 1955, 1962. London: H.M.S.O.

- (1958) Registrar General. Decennial Supplement. England and Wales, 1951. Occupation Mortality, Part II; Civil. London: H.M.S.O.
- (1961) Ministry of Education, Circular 11/61. London: H.M.S.O.
- (1961) The Registrar General's Statistical Review of England and Wales for the Two Years 1957-1958. Supplement on Mental Health. London: H.M.S.O.
- (1962) Report of the Chief Medical Officer of the Ministry of Education: The Health of the School Child, 1960 and 1961. London: H.M.S.O.
- (1962) Ministry of Health. Central Health Services Council Standing Mental Health Advisory Committee: The Training of Staff of Training Centres for the Mentally Subnormal. London: H.M.S.O.
- (1963) Ministry of Education. Half our Future. A Report of the Central Advisory Council for Education (England). London: H.M.S.O.
- (1963) Health and Welfare. The Development of Community Care (Cmnd. 1937). London: H.M.S.O.
- (1963) Report of the Working Party on Subnormality. Bulletin of British Psychological Society **16**, 53-66.
- (1964) Report of the Ministry of Health for the year ended 31 December 1963. The Health and Welfare Services. London: H.M.S.O.
- ÅKESSON, HANS OLOF. (1961) *Epidemiology and genetics of mental deficiency in a Southern Swedish Population*, University of Uppsala, Uppsala, Sweden.
- BAIRD, SIR DUGALD (1962) Environmental and Obstetrical Factors in Prematurity, with special reference to experience in Aberdeen, Bulletin of the World Health Organization **26**, 291-295.
- BALLER, W. R. (1936) A Study of the Present Social Status of a Group of Adults who, when they were in Elementary Schools, were Classified as Mentally Deficient, *Genet. Psychol.* **18**, 165-244.
- BELKNAP, I. (1956) *Human Problems of a State Mental Hospital*, New York: McGraw-Hill.
- BELKNAP, I., and STEINLE, J. G. (1963) *The Community and its Hospitals: A Comparative Analysis*, New York, Syracuse Univ. Press.
- BERENT, J. (1954) Social Mobility and Marriage: A Study of Trends in England and Wales, in *Social Mobility in Britain*, Ed. Glass, D. V., pp. 321-338.
- BERG, J. M., and KIRMAN, B. H. (1959) Some Aetiological Problems in Mental Deficiency, *Brit. Med. J.* **2**, 848-852.
- BERG, J. M., and KIRMAN, B. H. (1960) The Mentally Defective Twin, *Brit. Med. J.* **1**, 1911-1927.
- BERNSTEIN, B. (1960) Language and Social Class, *Brit. J. Sociol.* **11**, 271.
- BERNSTEIN, B. (1964) Social Class; Speech Systems and Psycho-therapy, *Brit. J. Sociol.* **15**, 54.
- BLACKETER-SIMMONDS, L. D. A. (1953) An investigation into the supposed differences existing between mongols and other mentally defective subjects with regard to certain psychological traits, *J. Ment. Science* **99**, 702-719.
- BLAU, P. M. (1963) *Bureaucracy in Modern Society*, Tenth Printing, New York: Random House.
- BRANDON, M. W. G. (1960) A survey of 200 women discharged from a mental deficiency hospital, *J. Ment. Science* **106**, 355-370.
- BURT, C. (1937) *The Backward Child*, London: London Univ. Press.
- BUTLER, N. R., and BONHAM, D. G. (1963) *Perinatal Mortality*, Livingstone, London and Edinburgh.
- CARTER, C. O. (1958) A life-table for Mongols with the causes of death. *J. Ment. Defic. Res.* **2**, 64-74.
- CAUDILL, W. A. (1958) *The Psychiatric Hospital as a small society*, Cambridge: Harvard Univ. Press.

- CHARLES, D. C. (1953) Ability and Accomplishment of Persons Earlier Judged Mentally Deficient, *Genet. Psychol. Monogr.* **47**, 3-71.
- CLARKE, A. D. B., and CLARKE, A. M. (1953) How constant is the I.Q.?, *Lancet* **ii**, 877-880.
- CLARKE, A. D. B., and CLARKE, A. M. (1954) Cognitive Changes in the Feeble-minded, *Brit. J. Psychol.* **45**, 173-179.
- CLARKE, ANN M., and CLARKE, A. D. B. (1958) *Mental Deficiency: the Changing Outlook*, Methuen, London.
- CLARKE, A. D. B., and CLARKE, ANN M. (1960) Some Recent Advances in the Study of Early Deprivation, *Child Psych. Psychiat.* **1**, 26-36.
- CLARKE, A. D. B., CLARKE, A. M., and REIMAN, S. (1958) Cognitive and Social Changes in the Feeble-minded—Three Further Studies, *Brit. J. Psychol.* **49**, 144-157.
- COSER, ROSE L. (1962) *Life in the Ward*, Michigan State Univ. Press, East Lansing, Michigan, U.S.A.
- CROME, L. (1960) The Brain and Mental Retardation, *Brit. Med. J.* **1**, 897-904.
- CRUICKSHANK, R. (1958) *A Survey of Respiratory Illness in a Sample of Families in London. Recent Studies in Epidemiology*, Eds. Pemberton, J., and Willard, H. Oxford.
- DALY, C., HEADY, J. A., and MORRIS, J. N. (1955) Social and Biological Factors in Infant Mortality, III The Effect of Mother's Age and Parity on Social Class Differences in Infant Mortality, *Lancet* **i**, 445-448.
- DEISHER, R. W., BALKANY, A. F., PREWITT, C. D., and REDFIELD, W. J. (1962) Phenylketonuric Families in Washington State, *Am. J. Dis. of Child.* **103**, 818-821.
- DENT, TESSA, EDWARDS, J. H., and DELHANTY, JOY, D. A. (1963) A partial mongol, *Lancet* **ii**, 484-489.
- DOUGLAS, J. W. B. (1963) *The Home and the School*, London: Macgibbon and Kee.
- DOUGLAS, J. W. B., and BLOMFIELD, J. M. (1958) *Children under Five*, London: George Allen and Unwin Ltd.
- DOUGLAS, J. W. B. (1960) "Premature" Children at Primary Schools, *Brit. Med. J.* **1**, 1008.
- DRILLIEN, C. M. (1961) A longitudinal study of the growth of prematurely and maturely born children. Part VII, *Arch. Dis. Child.* **36**, 233-240.
- DUNSDON, M. I., CARTER, C. O., and HUNTLEY, R. M. C. (1960) Upper end of range of intelligence in mongolism, *Lancet* **i**, 565-568.
- FERGUSON, T., and KERR, AGNES W. (1955) After-Histories of Girls Educated in Special Schools for Mentally-Handicapped Children, *Glasgow Medical Journal* **36**, 50-56.
- GIBBENS, T. C. N. (1963) *Psychiatric Studies of Borstal Lads*, London: Oxford Univ. Press.
- GLASS, D. V., and GREBENIC, E. (1954) *The Trend and Pattern of Fertility in Great Britain*, A Report on the Family Census of 1946, Papers of the Royal Commission on Population, Vol. VI, Parts I and II.
- GLASS, D. V., and HALL, J. R. (1954) Social Mobility in Britain: A Study of Inter-Generation Changes in Status, *Social Mobility in Britain*, ed. Glass, D. V., pp. 177-259. London.
- GOFFMAN, E. (1957) *The Characteristics of the Total Institution*, Walter Reed Symposium on Social Psychiatry, Washington, D.C.
- GOODMAN, N., and TIZARD, J. (1962) Prevalence of Imbecility and Idiocy among Children, *Brit. Med. J.* **1**, 216-219.
- GUNZBURG, H. C. (1960) *Social Rehabilitation of the Subnormal*, Plymouth: Ballière, Tindall & Cox Ltd.
- HALPERIN, S. L. (1945) A clinico-genetical study of mental defect, *Am. J. Ment. Defic.* **50**, 8.
- HEADY, J. A., STEVENS, C. F., DALY, C., and MORRIS, J. N. (1955a) Social and Biological Factors in Infant Mortality, IV The Independent Effects of Social Class, Region, the Mother's Age and her Parity, *Lancet* **i**, 499-502.

- HEADY, J. A., DALY, C., and MORRIS, J. N. (1955b) Social and Biological Factors in Infant Mortality, II Variation of Mortality with Mother's Age and Parity, *Lancet* **i**, 395-397.
- HOLLINGSHEAD, A. B., and REDLICH, F. C. (1958) *Social Class and Mental Illness*, New York: Wiley.
- HOLT, K. S. (1958) The Influence of a Retarded Child Upon Family Limitation, *J. Ment. Defic. Res.* **2**, 28.
- HULME, I. (1964) *A Comparative Study of the Play, Language and Reasoning of Severely Subnormal Children and Children of Similar Mental Age*, M. Ed. Thesis (unpublished), Manchester University.
- HUDSON, F. P. (1963) Phenylketonuria in the North of England, *The Medical Officer* **110**, 69-71.
- ILLINGWORTH, R. S. (1961) The Predictive Value of Developmental Tests in the First Year, With Special Reference to the Diagnosis of Mental Subnormality, *J. Child. Psychol. Psychiat.* **2**, 210-215.
- ILLSLEY, R. (1955) Social Class Selection and Class Differences in Relation to Stillbirths and Infant Deaths, *Brit. Med. J.* **2**, 1520-1524.
- JONES, M. (1953) *The Therapeutic Community*, New York: Basic Books.
- KATZ, ALFRED H. (1961) *Parents of the Handicapped*, U.S.A.: Charles C. Thomas.
- KIRK, S. A. (1958) *Early education of the Mentally Retarded*, Urbana, Univ. of Illinois Press.
- KLINEBERG, O. (1940) *Negro Intelligence and Selective Migration*, New York: Columbia Univ. Press.
- KNOBLOCH, H., and PASAMANICK, B. (1962) Medical Progress: Mental Subnormality, *New Engl. J. Med.* **266**, 1045-1051; 1092-1097; 1155-1161.
- KUSHLICK, A. (1961) *Subnormality in Salford*, pp. 18-48 in SUSSER, M., W. and KUSHLICK, A. A Report on the Mental Health Services of the City of Salford for the Year 1960. Salford Health Department.
- KUSHLICK, A. (1964) The Prevalence of Recognised Mental Subnormality of I.Q. Under 50 Among Children in the South of England, with Reference to the Demand for Places for Residential Care. Paper to the International Copenhagen Conference on the Scientific Study of Mental Retardation, Copenhagen.
- KUSHLICK, A. (1965) Community care for the Subnormal—A Plan for Evaluation, *Proc. Roy. Soc. Med.* **58**, 374-380.
- LAURENCE, K. M. (1964) The Natural History of Spina Bifida, *Arch. Dis. Child.* **39**, 41-57.
- LEESON, J. (1960) A Study of Six Mentally Handicapped Children and their Families, *The Medical Officer* **104**, 311.
- LEESON, J. (1962) *Demand for Care in Hospitals for the Mentally Subnormal*, Manchester Regional Hospital Board.
- LEMKAU, P., TIETZE, C., and COOPER, M. (1942) Mental-Hygiene Problems in an Urban District. Third Paper, *Mental Hygiene* **26**, 275-288.
- LEMKAU, P., TIETZE, C., and COOPER, M. (1943) Mental-Hygiene Problems in an Urban District. Fourth Paper, *Mental Hygiene* **27**, 279-295.
- LEWIS, E. O. (1929) The Report of the Mental Deficiency Committee being a Joint Committee of the Board of Education and Board of Control: Part IV—Report on an Investigation into the Incidence of Mental Deficiency in Six Areas, 1925-1927, H.M.S.O., London.
- LILIENFELD, A. M., and PASAMANICK, B. (1955) Association of maternal and fetal factors with development of mental deficiency. Relationship to maternal age, birth order, previous reproductive loss and degree of mental deficiency, *Am. J. Ment. Defic.* **60**, 557-569.
- LURIA, A. R. (1961) The Role of Speech in the Regulation of Normal and Abnormal Behaviour. *Zeitschrift für ärztliche Fortbildung* **51**, 1957, p. 503.

- LYLE, J. G. (1959) The Effect of an Institution Environment upon the Verbal Development of Imbecile Children: (1) Verbal Intelligence, *J. Ment. Defic. Res.* 3, 122-128.
- LYLE, J. G. (1960a) The Effect of an Institution Environment upon the Verbal Development of Imbecile Children: (2) Speech and Language, *J. Ment. Defic. Res.* 4, 1-13.
- LYLE, J. G. (1960b) The Effect of an Institution Environment upon the Verbal Development of Imbecile Children: (3) The Brooklands Residential Family Unit. *J. Ment. Defic. Res.* 4, 14-23.
- MACMAHON, B., and SAWA, J. M. (1961) Physical Damage to the Fetus, *Milbank Memorial Fund Quarterly* 39, 14-73.
- MCDONALD, ALISON D. (1964) Intelligence in Children of Very Low Birth Weight, *Brit. J. Prev. Soc. Med.* 18, 59-73.
- MCLAREN TODD, R., and NEVILLE, J. G. (1964) The Sequelae of Tuberculous Meningitis, *Arch. Dis. Child.* 39, 213-225.
- MASLAND, R. L., SARASON, S. B., and GLADWIN, T. (1958) *Mental Subnormality: Biological, Psychological and Cultural Factors*, New York: Basic Books.
- MASLAND, R. L. (1958) The Prevention of Mental Retardation: A Survey of Research, *J. Dis. Child.* 95, 3-111.
- MORRIS, J. N. (1957) *Uses of Epidemiology*, Edinburgh and London: E. and S. Livingstone Ltd.
- MORRIS, J. N. (1959) Health and Social Class, *Lancet* i, 303-305.
- MORRIS, J. N., and HEADY, J. A. (1955a) Social and Biological Factors in Infant Mortality: I. Objects and Methods, *Lancet* i, 343-349.
- MORRIS, J. N., and HEADY, J. A. (1955b) Social and Biological Factors in Infant Mortality: V. Mortality in Relation to the Father's Occupation, 1911-1950. *Lancet* i, 554-559.
- NEALE, M. D., and CAMPBELL, M. J. (1963) *Education for the Intellectually Limited Child and Adolescent*, Sydney: Novak.
- O'CONNOR, H., and TIZARD, J. (1956) *The Social Problem of Mental Deficiency*, London: Pergamon Press.
- PARSONS, T. (1957) The Mental Hospital as a Type of Organisation, in Greenblatt, M., Levinson, D. J., and Williams, *The Patient and the Mental Hospital*, Glencoe, Illinois: The Free Press.
- PARSONS, T., and BALES, R. F. (1955) *Family, Socialization and Interaction Process*, Glencoe, Illinois: The Free Press.
- PASAMANICK, B., and LILIENFELD, A. M. (1955) Association of Maternal and Fetal Factors with Development of Mental Deficiency. I. Abnormalities in Prenatal and Parana-tal Periods, *J.A.M.A.* 159: 155-160.
- PEARSON, K. (1931) On the Inheritance of Mental Disease, *Ann. Eugen., Lond.* 4, 362.
- PEARSON, K., and JAEDE RHOLM, G. A. (1914) *On the Continuity of Mental Defect*, London: Dulau.
- PENROSE, L. S. (1963) and (1949) *The Biology of Mental Defect*, Third Edition. Sidgwich and Jackson Ltd., London.
- PENROSE, L. S. (1938) A Clinical and Genetic Study of 1280 cases of Mental Defect (Colchester Survey), *Sp. Rep. Ser. Med. Res. Coun. No. 229*. London, H.M.S.O.
- RECORD, R. G., and SMITH, ALWYN (1955) Incidence, Mortality and Sex Distribution of Mongoloid Defectives, *Brit. J. Prev. Soc. Med.* 9, 10-15.
- ROBERTS, J. A. F., NORMAN, R. M., and GRIFFITHS, RUTH (1938) Studies on a Child Population: IV. The form of the Lower End of the Frequency Distribution of Stanford Binet Intelligence Quotients and the Fall of Low Intelligence Quotients with Advancing Age, *Ann. Eugen. Lond.* 8, 319-336.
- ROLLIN, H. R. (1946) Personality in Mongolism with Special Reference to the Incidence of Catatonic Psychosis, *Amer. J. Ment. Defic.* 51, 219,

- RUTTER, M. (1964) Intelligence and Childhood Psychiatric Disorder, *Brit. J. Soc. Clin. Psychol.* 3, 120-129.
- SABAGH, G., DINGMAN, H. F., TARJAN, G., and WRIGHT, S. W. (1959) Social Class and Ethnic Status of Patients admitted to a State Hospital for the Retarded, *Pacific Sociol. Rev.* 2, 76-80.
- SAENGER, G. S. (1960) *Factors Influencing the Institutionalization of Mentally Retarded Individuals in New York City*, A Report to the New York Interdepartmental Health Resources Board.
- SARASON, S. B. (1959) *Psychological Problems in Mental Deficiency*, New York: Harper and Brothers.
- SCOTT, E. M., ILLSLEY, R., and THOMSON, A. M. (1956) A Psychological Investigation of Primigravidae: II. Maternal Social Class, Age, Physique and Intelligence, *J. Obstet. Gynaec. Brit. Emp.* 63, 340.
- SHOTWELL, ANNA M., and SHIPE, DOROTHY (1964) Effect of out-of-home Care on the Intellectual and Social Development of Mongoloid Children, *Amer. J. Ment. Defic.* 68, 693-699.
- STANTON, A., and SCHWARTZ, M. (1954) *The Mental Hospital*, New York: Basic Books.
- STEIN, Z., and SUSSER, M. (1960) Families of Dull Children, Part II. Identifying Family Types and Subcultures. Part III. Social Selection by Family Type. Part IV. Increments in Intelligence. *J. Ment. Science* 106, 1296-1319.
- STEIN, Z., and SUSSER, M. (1960 a) The Families of Dull Children: A Classification for Predicting Careers, *Brit. J. Prev. Soc. Med.* 14, 83-88.
- STEIN, Z., and SUSSER, M. (1960 b) Estimating Hostel Needs for Backward Children, *Lancet* ii, 486-488.
- STEIN, Z., and SUSSER, M. (1963) The Social Distribution of Mental Retardation, *Am. J. Ment. Defic.* 67, 811-821.
- SUSSER, M. W., and KUSHLICK, A. (1961) *A Report on the Mental Health Services of the City of Salford for the Year 1960*, Salford Health Department.
- SUSSER, M. W., and WATSON, W. (1962) *Sociology in Medicine*, London: Oxford Univ. Press.
- THOMPSON, B. (1956) A Social Study of Illegitimate Pregnancies, *Brit. J. Prev. Soc. Med.* 10, 75.
- TIZARD, J. (1958) Longitudinal and Follow-Up Studies, in *Mental Deficiency: the Changing Outlook*.
- TIZARD, J. (1960) Residential Care of Mentally Handicapped Children, *Brit. Med. J.* 1, 1041-1046.
- TIZARD, J., and GRAD, J. C. (1961) *The Mentally Handicapped and Their Families*, London: Oxford Univ. Press.
- TIZARD, J. (1962) Treatment of the Mentally Subnormal, in *Aspects of Psychiatric Research*, pp. 125-153. Edited by Richter, D., Tanner, J. M., Lord Taylor, and Zangwill, O. I. London: Oxford Univ. Press.
- TIZARD, J. (1964) *Community Services for the Mentally Handicapped*, London: Oxford Univ. Press.
- TIZARD, J. (1965) Community Care for the Subnormal, *Proc. Roy. Soc. Med.*, 58, 373-374.
- WOODWARD, M. (1963) Early Experience and Behaviour Disorders in Severely Subnormal Children, *Brit. J. Soc. Clin. Psy.* 2, 174-184.
- YOUNG, M., and WILUOTT, P. (1957) *Family and Kinship in East London*, London: Routledge and Kegan Paul.
- ZIGLER, E., and DE LABRY, JAC. (1962) Concept-Switching in Middle-Class, Lower-Class and Retarded Children, *J. of Abnormal and Social Psychol.* 65, 267-273.

CHAPTER 6

School Phobia

by G. STEWART PRINCE

INTRODUCTION

The history of the concept of school phobia is in many ways paradigmatic of that of child psychiatry and child guidance as a whole, and reflects both their strengths and weaknesses in methodology (Miller, 1960) and nosology (Cameron, 1955). It can best be examined against the background of the relation between dynamic psychology and education. Adler was the first of the pioneers to emphasize the relevance of his thinking for the care and teaching of children in school (Adler, 1930) and Jung also lectured on Analytical Psychology and education in 1924 (Jung, 1954). Psychoanalysis has, however, made the outstanding contribution to the deeper understanding of the relation between the child's psychic development, his parental environment and his response to the school. Starting with Freud's recognition that in the fear of examinations the anxiety is displaced from something sexual onto something intellectual (Freud, 1913), many psychoanalysts contributed, and in 1923 Melanie Klein first published her classical paper *The Role of the School in the Libidinal Development of the Child* (Klein, M., 1948).

In this she points out that from the beginning school and learning are libidinally determined for everyone, since school compels the child to sublimate his libidinal instinctual energies. The sublimation of genital activity has a decisive share in learning, which will be correspondingly inhibited, therefore, by castration anxiety. Entry to school presents the child with new objects and activities on which he must test the mobility of his libido, and, she emphasizes, faces him with the necessity of abandoning a more or less passive, feminine attitude in order to put forth his activity. She goes on to illustrate, from material culled from the analyses of children, the sexual symbolic significance of the school, teachers, classroom impedimenta and subject matter, in a way which throws light on all manner of anxiety at school and learning inhibition, and points out how the mechanism of inhibition permits, owing to common sexual symbolic meanings, the progress of inhibition from one ego-activity or trend to another. From this point onwards psychoanalytic contributions have been frequent.

Child psychiatry was gradually, though by no means uniformly, influenced in its development by psychoanalytic thinking of this sort, and the slow growth of the child guidance movement, with the development of its team approach and the establishment of the educational psychology service, did much to enhance the interest of psychiatrists in the problems of children in relation to school. Of these, problems of disturbed behaviour, of inhibition of learning, and of persistent absence from school for other than reasons of physical illhealth have attracted most attention, and it is with the latter that this chapter is concerned.

The Absent Child

The Director of Education of a large English city has pointed out (Magenay, 1959) that whereas the percentage of school attendance there has risen from 87·2 per cent in 1920–1921 to 91·4 per cent in 1956–1957 the “Absence from school without the knowledge or consent of the parent or of the school authority” has remained about the same at just under 1 per cent. It is noteworthy that he described this absenteeism simply as truancy. His analysis by age of present-day “truants” shows that 62 per cent are of secondary school age (12 and above); the remainder are evenly spread through the eight-, nine-, ten-, and eleven-year-olds, and about 7 per cent are under the age of 7.

Published psychiatric studies of refusal to attend school started with that of Broadwin (1932) and have continued in increasing volume up to the publication of the recent monograph by Kahn and Nursten (1964). Broadwin (1932) and Partridge (1939) distinguished from truants a group called “neurotic”, and this distinction was taken further by Johnson *et al.* (1941), who coined the term “School Phobia” although insisting that the basic condition was one of separation anxiety. Controlled statistical studies planned more clearly to differentiate the “truant” from the “neurotic” group came from Warren (1948) and Hersov (1960a). The latter clearly describes his methodology and defines his purpose “to investigate the hypothesis that children referred for persistent non-attendance at school fall into one or other of the two groups: those whose behaviour is one facet of a psychoneurotic syndrome; and those whose attitude and behaviour indicate a conduct disorder. From this hypothesis predictions were made of significant differences in respect of environmental circumstances, parent-child relationships, and personality and intellectual level of the child”. The results on the whole confirm the hypothesis and the predictions. This piece of work, by the very excellence of its method and the sophistication of its technique, illustrates the way in which child psychiatry has to struggle with its immaturity and against its “inborn errors of metabolism”. Thus, in order to study a sufficient number of cases (fifty each of the neurotic, truant and control groups) to facilitate statistical handling, the use of case-

records compiled by a considerable number of psychiatrists, psychiatric social workers and psychologists was necessary, but this method of course increases the margin for error in the passing of value-judgements and even the recording of historical fact. To make but one further comment, the analysis of difference between the groups in terms of patterns of symptoms produced some of the clearest statistical findings. The neurotic group compared with the truant group and the controls in having a markedly higher incidence of eating disturbance; abdominal pain, nausea and vomiting; and sleep disturbance and fears; while the truant group was distinguished for the incidence of enuresis; juvenile court appearance; lying; wandering from home and stealing. This justifies placing the truants in the diagnostic category "conduct disorder" according to standard child psychiatric practice (Cameron, 1955). However, the limitations of this descriptive label have to be recognized, and the question cannot be answered as to what differences there were in the manner in which the two groups of children were studied. As Klein has pointed out, aggression and secondary gain are prominent in truancy, and neither the observer or the child is likely to be aware of the *anxiety* that is almost invariably present unless psychotherapeutic exploration is employed (Klein, E. 1945); without this also, the fantasy that may underly truancy cannot be reached, far less evaluated (Mason, 1959). Behaviour that will be described by an observer using one set of tools as "conduct disorder" is likely to be called by the user of another set "delinquent acting out in defence against psychotic anxiety".

The next step was an attempt at categorization. A small series of 27 cases is divided into a "neurotic" and a "characterological" group (Coolidge *et al.*, 1957). Of the former, mainly girls between 5 and 8 years of age, the authors state, "Although undertones of pregenital conflicts—oral or anal in nature—may persist, these children have attained a primarily phallic orientation; it is at this level of psychosexual development that they became blocked".

For the latter they postulate a deep character disturbance existing from an early age, and state "The children in this group appear to be fixated at a pregenital stage". Seven of these nine cases were boys between 9 and 12 years of age. Discussing this contribution Johnson (Johnson, 1957) rejects the validity of a division into "neurotic" and "characterological" groups, holding the latter to be merely examples of more insidious onset. She puts it "anxiety marks both groups, which vary in depth of origin of trouble with the mother". She summarizes her standpoint with a clarity which demands quotation in full:

"the syndrome of school phobia does not seem to us to be a qualitatively new and specific entity. It is a symptom developing under very definite circumstances. First, it appears to us that there is present a history of a poorly resolved, dependency relationship between the child and its mother. With this background, two specific factors now enter to initiate the phobia. There always occurs at the outset in the child some acute

anxiety, produced either by organic disease or some external situation which arouse conflict, and manifested in hysterical or compulsive symptoms. Simultaneously the mother must be suffering from some new threat to her security—marital unhappiness, economic deprivation, or demands that she resents. Newly frustrated in her satisfactions, she has need now to exploit the child's acute anxiety and his wish for dependence. On the basis of an early poorly resolved dependency relationship, both readily regress to that earlier period of mutual satisfaction. Now the cycle begins which soon results in the school phobia if the child is of school age, with the teacher, in her milieu, made the phobic object."

She follows this restatement of her earlier view (Johnson *et al.*, 1941) with the claim: "The concepts presented and the etiological factors in this form of behaviour have been adequately demonstrated, and require little, if any, further evidence to rest as *basic scientific principles*." This claim appears to be accepted by Kahn and Nursten (1964), but it has to be remembered that it was based on the successful return to school of seven out of eight children following collaborative therapy with child and mother (Johnson *et al.*, 1941). The note of dogmatism which may be detected suggests the presence of another problem which dogs the development of child psychiatry—an understandable resistance to modifying a theory which has seemed to produce clarity out of chaos and proven therapeutically useful, even if new observations challenge the total validity of its concepts.

The next step in the development of the concept of school phobia concerned its relationship to psychotic states. Thus two authors approach the subject from the viewpoint of constitutional factors and Burns (1952) considers it as a preschizophrenic symptom in preadolescence, while Campbell (1955) considers it as a manifestation of manic-depressive disorder. Coolidge *et al.* (1960) emphasize the gravity of the problem when it occurs in adolescence, saying that it can be associated "with widely varying degrees of emotional disturbance ranging all the way from transient anxiety states—reflecting a developmental or external crisis—to severe character disorders bordering on psychosis". Kahn and Nursten (1964) group cases of school refusal under three headings—(a) psychoneurotic, including phobic conditions; (b) character disorders; and (c) psychotic conditions.

Thus the result of continued clinical interest and study of school phobia has been the postulation of an ever-increasing range of psychopathology underlying the symptom of fearful avoidance of school. As has been mentioned, Johnson *et al.* (1941), who coined the term "school phobia", described it as a syndrome, and insisted that the underlying condition was one of *separation anxiety*. This view was reaffirmed fifteen years later (Estes *et al.*, 1956), and accepted by Eisenberg (1958), who gives graphic examples of the mode of communication of the anxiety from mother to child. This relatively simple view, however, does not allow for increasing sophistication and critical questioning amongst psychopathological theorists *as to the basic nature of separation anxiety*. In a recent critical review of the literature on this subject Bowlby (1961) opens frankly: "No concept is more central to

psychoanalytic theory than the concept of anxiety. Yet it is one about which there is little consensus of opinion, which accounts in no small measure for the divisions between different schools of thought. Put briefly, all analysts are agreed that anxiety cannot be explained simply by reference to external threat: in some way processes usually thought of as internal and instinctive seem to play a crucial role. But how these inner forces are to be conceptualized and how they give rise to anxiety has always been a puzzle".

Enumerating the *six main* theories currently held to account for separation anxiety, he makes his own position quite clear, postulating Primary Anxiety. He states: "the child is bound to his mother by a number of instinctual response systems, each of which is primary and which together have a high survival value (Bowlby, 1958). Soon after birth, it is held, conditions of isolation tend to activate crying and a little later tend to activate both clinging and following also; until he is in close proximity to his familiar mother figure these instinctual response systems do not cease motivating him. Pending this outcome, it is suggested, his subjective experience is that of primary anxiety; when he is close to her it is one of comfort".

Thus if the contemporary child psychiatrist, concerned with the practical problems of school phobia, and aware of its essential clinical connection with the phenomenon of separation anxiety, turns to current psychoanalytic theory for elucidation, he intrudes into an area of crucial theoretical conflict—a conflict which is reflected in the pages of the most recent psychoanalytic literature (Murphy, 1964; Bowlby, 1964). Even by turning to ethology psychoanalysis has not yet found a decisive resolution (Seay *et al.*, 1962).

Before a consideration of the intrapersonal psychopathology underlying the symptom is attempted, the general clinical features associated with school phobia must be considered, and also the family background against which it emerges.

SCHOOL PHOBIA. THE GENERAL CLINICAL PICTURE

Clinical experience, as well as an overview of the literature, suggest that, in spite of disagreements, differences of emphasis or description from the viewpoint of varied conceptual models, there is a clinical picture in which clearly morbid fear of school and fear of leaving home features, and which psychiatrists readily recognize as "school phobia". They then remind themselves that the phrase refers to a syndrome or a symptom, rather than a diagnosis.

Incidence

The true incidence of the condition is not known; although several authors report a rising rate of referral to clinics, this represents an increasing alerting of referring agents to the existence and possible significance

of the symptom. It is noteworthy that Hersov (1960b) following E. Klein (1945) remarks that most children experience many of the symptoms of school refusal at some time without requiring treatment.

Age and Sex Distribution

Although some of the early studies of small groups of cases suggested significant sex incidence, an overview shows that boys and girls are about equally liable. The question of age incidence is more controversial, and of more clinical significance. As was noted by Burns (1959) English writers record a higher age range than their American colleagues. His analysis of sixty-four cases in Birmingham suggests that equal numbers were found on either side of the age 11, at which age transfer from junior to senior school is common in Britain; Warren (1948) suggests a shift towards a higher mean age, and Hersov (1960) found that of his fifty cases the range was from 7–16 years, but forty-two were between 10 and 16. Davidson (1961) states that the commonest time of onset is about the age of 11, while all the thirteen case-histories quoted by Kahn and Nursten (1964) are of children above the age of 9. Of American authors, Johnson *et al.* (1941) found an age range of 6–14 years in their small series of eight cases, whilst amongst his group of twenty-six children, Eisenberg (1958a) had only four of Junior High School age, but included no fewer than eleven preschool children, on the basis of their demonstrating separation anxiety in a nursery for disturbed children.

The prognostic importance of the age factor is emphasized in the American literature. Thus Eisenberg (1958a) stated that in younger children psychiatric disturbance was less prominent than anxiety in their parents, while in adolescence the intrafamilial pathology had been translated into intrapsychic pathology. The same author (Eisenberg, 1958b) also claims that when school phobia occurs in adolescence it represents a much more serious intrinsic disturbance of general adjustment—a view reinforced by Coolidge *et al.* (1960) and apparently confirmed by the follow-up study of forty-one cases by Rodriguez *et al.* (1960).

In a sense it is axiomatic that the symptom of fear of leaving mother and going to school may be more indicative of serious pathology in a sixteen-year-old than in a five-year-old, but most groups of American writers referred to take their stand on very small numbers of cases. Further, in Davidson's series of thirty English cases only eight were below the age of 10, yet only two of her children failed to return to school on a treatment programme closely similar to that described by Eisenberg and Coolidge. Clarification of this point is required, and while the need for scrupulous evaluation of the symptom against the background of the adolescent's character structure and family constellation is obvious, the danger of too gloomy a view, and too ready a suspicion of psychotic development was mentioned long ago by E. Klein (1945) (*vide infra*).

The Onset of Overt Illness

The onset is gradual in more than half the cases (Hersov, 1960b), with a varying period of reluctance to go to school gradually building up to outright refusal. Cases of acute or subacute onset stand out in the mind of the clinician, representing some of his most dramatic professional experience.

The child's anxiety is severe and palpable, and often under pressure mounts to panic, perhaps with flight. Somatic evidences of anxiety are particularly prominent, circum-oral pallor with sweating and trembling being common, while vomiting, diarrhoea or voidance of urine may occur.

More organized symptoms of nausea, vomiting and abdominal pain are frequently formed, and may result in a diagnosis of physical illness, or even acute surgical emergency.

Clinical illustration: A few days after admission to a secondary grammar school some 5 miles from his home John, aged 12, developed severe colicky pains in the abdomen on the bus to school, and returned home. In the bus next morning the attack of pain was more severe, and he looked so ill that he was taken by ambulance to hospital. There it was only the accidental intervention of a visiting psychiatrist that saved him from laparotomy. Psychiatric exploration revealed a florid school phobic syndrome.

In some cases hysterical conversion symptoms—aphasia, deafness and even extensive paralysis have been seen, and in others obsessional symptoms, sometimes with tics.

Trigger factors: Many authors mention factors in the life of the child which seem to precipitate the severe anxiety about school. Johnson *et al.* (1941) specify physical illness in the child, the birth of a sibling and promotion in school, but death in or near the family, a legitimate holiday, and many other factors can be incriminated. One of the most distinguished victims, C. G. Jung, became "school phobic" after being bowled over by a schoolmate. His courageous account of his prior development, from the vantage point of old age, gives many hints on the relationship between the trigger factor and antecedent psychic experience (Jung, 1963).

The Established Illness

Once the illness has become organized a variety of clinical pictures may be seen, but the common denominators are three:

1. Fear of school.
2. Fear of leaving home (mother).
3. Admixtures of *anxiety* and *depression* in the afflicted child.

The Fear of School

E. Klein (1945) usefully separates the anxiety about school into fear of teachers, fear of the pupils and fear of the school work with expectation of failure. To these can be added fear of the school building itself, or some part of it, or something onto which the fear is displaced, such as the motor

tunnel under a river on the way to school. However, the first three fears, often in some amalgum and sometimes with a shift in prominence from one to the other, are the most frequent in the clinical picture, and since their investigation may be useful in indicating psychopathology, merit amplification.

Fear of Teacher

This can appear with drastic suddenness, and quickly mount in intensity, assuming a primitive character. It may be stimulated by the teacher concerned by harshness, a reprimand or even a reputation for strictness. The arrival of a new teacher, the replacement of a man by a woman may seem significant, but in many cases no rational ground for the access of fear can be found.

Case illustration: Gerald, aged 12, was apparently happily settled in the grammar school of his choice for two terms. He was particularly fond of history, and conceived a great liking for the kindly man who taught this subject.

Entering this class one morning he began to feel sick and anxious, and to the consternation of everyone present suddenly shouted at the teacher "filthy pig". He then flew from the classroom to his home. His parents firmly announced their intention of returning him to school next day, but in the early hours of the morning he sneaked from the home and made his way to a seaside resort some hundred miles away. He was found sleeping, exhausted, on the beach 36 hours after leaving home.

It emerged that this only child had been told, shortly before his dramatic explosion, that his mother was expecting another baby; while simulating pleasure he was conscious of his disgust and rage, and blamed the rather passive, gentle father to whom he was warmly attached.

Fear of Other Pupils

This is more commonly a contributing than a central factor. Bullying or teasing, even within "normal" limits, is poorly tolerated. Another common factor, particularly in the child who has transferred to secondary school, is the impact of contact with older children who talk amongst themselves about sexual matters, or boast about delinquent or aggressive acts. Klein (1945) regards dread of obscene words as a strong factor in the fear of companions as a grave prognosis sign, pointing to an obsessional neurosis or the possibility of psychotic development.

In some cases fear of school mates plays a dominating role.

Case illustration: Arthur, aged 15, suddenly stopped attending school 4 months before he was due to leave. He had no fear of the teachers and no difficulty with classwork, but in the preceding year he had grown 12 in. to the height of 6 ft 5 in. Thin, bowed of back and awkward in movement he had become the butt of thoughtless classmates, and had been teased unmercifully. He remained largely housebound, but was able to go each evening to a neighbouring yard where he was paid to assist in breaking up old cars with an axe. In treatment he became aware that he was thus discharging the vengeful, murderous impulses he felt towards his persecutors, towards whom his anxiety had a disquieting paranoid quality.

In this case the reason for the predominant fear of schoolmates was only too pathetically obvious; in others it is more disguised.

Case illustration: Jeremy, aged, 14, was the son of rich parents. They had separated when he was 6 months old, and his father had played little part in his life. Some months after going to a distinguished boarding school at the age of 13 he had complained of breathlessness at night, and in the absence of a positive medical diagnosis his mother had, for no apparent reason, brought him home for a spell of convalescence. When return to school was suggested he became acutely panicky.

He was seen for diagnosis at home, and although resistant produced material that suggested the uncertainty of his sexual identification. He spontaneously mentioned a dream of the night before. In this he was in bed in the dormitory of his boarding school; in the other three beds were girls that he knew. He felt a diffuse physical excitement. He knew that he had defaecated in his bed. Having recounted this dream he went on to tell of his anxiety in the dormitory when the other boys joked about sexual matters, and one of them hinted about finding him attractive.

Fear of School Work with the Expectation of Failure

This is a very frequent and often a complex feature. Particular subjects may arouse anxiety, the commonest being religious instruction, biology and gymnastics. Religious teaching is often interpreted by the child in terms of his conscious and unconscious guilt, as a form of interrogation with the threat of punishment. This can apply even to the mild solemnity of the morning assembly ceremony—the so-called “assembly anxiety”.

For a vulnerable pre-adolescent a perfectly sound biology lesson on human reproduction—or even that of the earthworm or dog-fish—may constellate pathological anxiety. Fantasy about the content of the dreaded subject may be of more importance.

Case illustration: Linda, aged 11, returned to school as part of her treatment after a short spell of total absence. She could not, however, face the religious instruction or biology lessons. For her the former represented a stern, punitive Deity who would know about her wicked sexual and aggressive fantasies. Biology, she believed, would be concerned with cutting up spiders, moths and other small creatures, something intolerable to her because of her primitive oral fantasies of biting and destroying her little sister.

To adolescents fear of failure may be a central problem, and is often complicated by a disparity between the young patient's ability and his aspirations, the latter often elevated to pathetic proportions because of the explicit or unconscious demands of parents. At this time the intrapsychic demands of adolescent development (Blos, 1962) synchronize with the new quality of reality and immediacy in the challenge made by the school on the youth's capacity for sublimation and active striving. It is little wonder that some adolescents fail to meet the challenge, and develop symptoms sometimes suggestive of psychosis. Klein's warning against diagnosing acute dread of school failure together with a general withdrawal from activity as adolescent schizophrenia without thorough assessment of the youths' accessibility to psychotherapy is highly pertinent.

Case illustration: Mary is by a considerable gap the youngest child of a professional family. Around the age of 5 she was noted for overt envy of her brothers, her insistence on wearing boyish clothes and her dare-devil physical exploits. Her early schooling went smoothly, and she passed without effort into a day school of high academic standard. Just before 16 she suddenly began to fear school, would return home after a few hours, and rapidly regressed to lying in her room and making childish demands on her mother. When interviewed she mentioned first a complete lack of any idea of what to do with her life, and the feeling that she could not pursue the academic course for which her success heretofore in study had suggested. She confided that, from the age of 5, she had found that her inner life was much more important than anything else, and from then had constantly been preoccupied with a fantasy relationship with a series of figures, usually women teachers. For the past two years she had kept a diary recording these fantasies, and had spent hours every night on this, neglecting her homework. She feared growing up, which she felt would mean giving up the excitement of her inner life. In spite of much further regression and withdrawal she made a good adjustment with prolonged psychotherapy.

Fear of Leaving Home (Mother)

In its most extreme form this may result in the child becoming totally housebound, all contact with school and indeed with the rest of the outside world having been abandoned.

Clinical illustration: Mavis, aged 19, had manifested severe fear of school from 11, and this had defied all treatment, including a fruitless effort to admit her to a psychiatric hospital. Neither of her parents had been able to tolerate the anxiety she exhibited on the steps of the hospital. She was visited at home because she had become increasingly housebound, not having left the flat at all for several months. Both parents opened the consultation by saying that Mavis had locked herself in the lavatory in anticipation of the visit, and had to be persuaded to go for a walk before it was possible to coax the girl out for a discussion of her problems.

In lesser degree leaving home provokes excessive anxiety, which may be countered by a combination of defence mechanisms or by "camouflage" techniques such as going with a friend or relative, arranging for a lift from a liked teacher and so on. The outside world is often consciously regarded and described as hostile and dangerous in various ways, and when away from home the child is preoccupied with fantasies of evil befalling the mother—less commonly the father or another member of the family.

When home and with the mother the general pattern is for regressive behaviour to set in, with demands upon the mother for comfort, reassurance, intimate contact and sometimes literally nursing and feeding care.

The behaviour of these children towards the mother is sometimes said to fall into one of two categories—(a) timid, fearful and inhibited children, with markedly over-protective mothers who have great difficulty in expressing any negative feelings about their mothers; (b) more alert, assertive and outgoing children, dominated and controlled by their mothers, who give clearer evidence of negative feelings, in the form of disobedience, criticism or even overtly aggressive behaviour, both verbal and physical (Hersov, 1960b). However, there are many children whose pattern of behaviour to

the mother lies between these poles as observed clinically, and it is important to note that the most open aggression is part of the child's severe anxiety manifestations.

Clinical illustration: Nigel, aged 13, had periodic fear of his grammar school, from which he would sometimes flee, remaining then at home for days at a time. At home he would alternate between begging his mother for reassurance and babyish forms of gratification and swearing at her, threatening her and kicking her.

In treatment it emerged that kicking her was important because her reaction reassured him that he had not fatally damaged her in his fantasied murderous attacks.

Admixtures of Anxiety and Depression

Although in the most detailed descriptive studies anxiety reactions occur much more frequently than depressive (Hersov, 1960 b) some authors emphasize the depressive elements. Thus Campbell (1958) declared that many children who develop school phobia are suffering from endogenous depression, and Agras (1959), from the observation of seven cases makes the following hypotheses:

1. That the basis of school phobia is depressive anxiety.
2. That there is a typical recognizable family constellation in this disorder which is common to many of the depressive disorders of childhood. (At present many of these disorders are not recognized as depressive in nature.)
3. That this syndrome is part of the natural history of the depressive disorders.

He accepts the need for testing these hypotheses by further research. Of English writers Davidson (1961) emphasizes the depressive picture in twenty-three of her thirty cases, instancing the tendency to withdrawal, poor concentration, and the tendency to feel bad in the morning, with mild retardation. It is, however, the mixed clinical picture of anxiety and depression which is characteristic.

THE FAMILY BACKGROUND IN SCHOOL PHOBIA

There has been from the earliest studies general agreement on the fact that the family backgrounds of school phobic children are pathological, and actively pathogenic in the development of overt illness.

Thus Johnson *et al.* (1941) postulated a poorly resolved early dependency relationship in these children to their mothers, constellated into activity by an increase in anxiety in the mothers as well as an acute anxiety in the children. Eisenberg (1958) describes the mothers in his group as anxious and ambivalent, with a poor relationship to the maternal grandmother, ambivalent to the pregnancy and afraid of the birth of the child. He describes their apprehensive over-solicitude, their primary overprotection of the little child, their tendency to treat the child as a symbol of their own unhappy

childhood, and their tendency to resent and sabotage the child's moves towards independence. These mothers found their husband of little support, their marriages unfulfilling, and therefore tended to treat the child as a substitute lover or a resented trap. The author skilfully describes the ways in which these mothers transmit separation anxiety to their children by the exhibition of contradictory behavioural and verbal clues, and he was led to consider the pattern as a *folie a deux*. This view has been further developed by Bonnard (1952). Talbot (1957) points out how frequently these families live in close contact with their own parents, and how various problems are seen in grandmother, mother and child, but her use of the term "inbred family constellation" is potentially misleading. Agras (1959), as has been mentioned, talks of the depressive constellation of the family. Hersov (1960) contributes a standardized assessment of parental attitude on a descriptive level. In his fifty cases, twenty-five mothers were rated as over-indulgent and dominated by their children, and fourteen as demanding, severe and controlling. More than half of all the fathers were assessed as inadequate and passive, good providers in the material sense, but participating little or not at all in home management of the children and unable to cope with the rebelliousness of puberty and pre-adolescence. In the fourteen families where the fathers played a firm, dominant role, the mothers were more often than not insecure and dependent personalities who over-indulged their children to offset the father's firmness, thus adding the disturbing element of inconsistency to the pattern of home management.

Davidson (1961) discusses school phobia as a manifestation of family disturbance. As well as emphasizing the depression in her patients, she underlines the very ambivalent relationship between mother and child.

She is quite specific about this, saying "By ambivalence I do not mean the alternation of love and anger that all parents show, but a more primitive relationship where the two emotions exist side by side". She stresses that the relationship is one of ambivalence and not rejection. Dealing with the personalities of the mothers, she describes them as immature and dependent on the maternal grandmother, and points out their tendency to repeat with the child the relationship they had with the maternal grandmother. Six mothers in her series had been away from school for long periods, three to look after their own mothers or younger children. More than half of her thirty mothers clung to the maternal grandmother, and she describes them as having perfectionist standards for themselves and their children.

This brief overview of the literature on the family background illustrates yet another problem recurrent in research in child psychiatry. It emerges clearly that all students of the syndrome of school phobia in children have been impressed by pathological factors in the parents of these children, and in some cases in other members of the family and near relatives.

However, the methods of study used and the conceptual framework employed to describe their results produces an apparent confusion of

terminology—ambivalent, overprotective, depressive, indulgent, inadequate, immature and so on. This reflects, apart from anything else, the great difficulty inherent in the task of observing, describing and defining something as complex as an individual child and his family, and emphasizes the importance of self-awareness in the observer, as well as acknowledgement of the subjective bias present in his choice of subject, method of observation and chosen means of conceptualizing and communicating what he learns. None the less the practical importance of these studies lies in the general acceptance of the need for any over-all treatment plan to include measures to alleviate pathological family interaction.

PATHOGENIC FAMILIAL INTERACTION IN SCHOOL PHOBIA

It will be clear from the description of the family backgrounds of school phobic children that they contain the potentials for a wide range of pathogenic interactions which contribute to the genesis of the child's illness and the maintenance of its cardinal symptom.

Although the studies just summarized indicate an acceptance that several members of the family group take part in such interaction, most attention has been focused on the mothers, and they are most frequently involved in regular exploratory and treatment interviews, parallel to the psychotherapy of the child. Here once more school phobia highlights a problem general to child psychiatry. As Eisenberg (1957) puts it: "This rigid insistence on the pathogenicity of the mother is a cultural phenomenon of contemporary psychiatry and social work ..." *Fathers*, and sometimes other members of the family group contribute to pathogenic interactions.

Clinical illustration: George, aged 14, had been absent from school for months, and housebound for weeks when seen at home. His mother was in a state of periodic agitated depression which followed the father's desertion in favour of another woman a year before. George varied between withdrawing depressed to his room and participating with his mother in screaming mutual verbal, and sometimes physical, attacks.

The mother sat up night after night, maintaining a delusional certainty that her husband would return for good.

The father played into this by turning up for a few hours at long and variable intervals, although when seen by chance when his arrival coincided with a home consultation he made it clear that he could not stand the idea of returning for good to his sick family.

Fathers, as in the illustration, are often difficult to include in investigation and treatment, but an overall treatment plan should provide for the possibility.

A PSYCHOPATHOLOGICAL FORMULATION

Given that a pathological and pathogenic family background is accepted as being common in school phobic children, attempts to formulate their

intrapersonal pathology will be coloured by the methods of study and treatment used, and the conceptual prejudices of the observer.

It is clear that early unresolved dependency on the mother with a relationship characterized by mutual hostility (Johnson *et al.*, 1941), castration anxiety and guilt over homosexual conflict (E. Klein, 1945) and masturbation guilt (Suttenfeld, 1954) may all play a part, but an adequate formulation must take cognisance of the central features of fear of school, fear of leaving home (mother) and the admixture of anxiety and depression, found in combination.

The conceptual framework advocated by Melanie Klein seems to do justice best to the clinical facts (M. Klein, 1949) for analytic exploration justifies the description of the fear of school as *persecutory anxiety*, the fear of leaving home (mother) as *depressive anxiety*, and with this framework of thinking the admixture of anxiety and depression can be accounted for.

Clinical illustration: Danny, aged 12, had focused his severe anxiety about going to school on the motor tunnel which lay between it and his home. He was seen after a long period of non-interpretive psychotherapy. He came to the first interview with an air of confidence, but very quickly became acutely anxious and gazed at the therapist with the terror of a rabbit facing a stoat. When this was taken up he expressed his fear that the therapist would attack him, stick a knife in him and then showed regressive behaviour and began to recall early memories of the rubber tubes on the kitchen taps which he felt would damage him, ending by recalling his fear that his mother's vacuum cleaner would suck him in and damage him.

Prolonged further treatment with this boy confirmed the persecutory nature of his fear of going to school. The depressive nature of his separation anxiety was borne out by the numerous fantasies he had when not with his mother of the accidents or illness that might befall her, which were related on further analysis to his fantasy of having chewed her up and destroyed her, connected with her temporary absence from the home when he was 2, to which he responded by subsequent anxious clinging to her for many months.

Using this framework which is postulated by Kahn and Nursten (1964), the trigger factor so often described can be thought of as constellating increased aggression in the child which re-awakens conflicts and anxieties related originally to his impulses towards the mother and her breast. His ambivalence is dealt with by *splitting* mechanisms, whereby the bad, persecuting object becomes projected onto the school, which permits him to keep his real mother as a good object.

The claustrophobic element in the fear of school (the tunnel in the case illustration) is often experienced as a fear of being trapped there and here the mechanism of projective identification is at work, the school (tunnel) representing the mother's body into which the infant fantasies enter.

Further, Melanie Klein's postulation of these psychotic anxieties as occurring in normal development, in psychoneurotic and in psychotic states of mind explains the occurrence of school phobia in normal, neurotic and psychotic children.

MANAGEMENT AND TREATMENT †

Only a small proportion of children exhibiting school phobia is likely to reach the ambit of clinical investigation and treatment, and chance plays a large part in determining which individuals do so. The social class, sophistication and attitudes of the adults concerned with any one child who demonstrates emotional disturbance together with a breach of the law by his non-attendance at school will probably be as influential as the availability of clinical help. Kahn and Nursten (1964) make an eloquent plea for the need for a multidisciplinary approach and for the strategic advantage of the Child Guidance Clinic, with its slowly and empirically evolved team structure, in dealing with the problem as one of psychosocial breakdown.

The fact that so many professional agents — teachers, school welfare officers, general practitioners, paediatricians, magistrates, probation officers and possibly others — tend to become involved demands of the clinic team careful planning of their contact and intervention with these agents, based on careful diagnosis and the assessed needs of the individual child and his family. Most authors who have commented on management emphasize the need for *speedy* clinical help to avoid further regression, symptom fixation and the reinforcement of secondary gain in the child. Rapid clinical help is, however, also important in dealing with the anxieties aroused in the adults concerned over the child's non-attendance. Help must also be flexible. An elementary example is the need to waive routine psychological testing at the child's first contact with the clinic, and some cases demand much more unorthodoxy.

Case illustration: Nigel, aged 12, was referred by the school authorities after some weeks of sudden total absence. His mother accepted an early clinic appointment, but telephoned to say that she could not get him to leave the house. With the agreement of the family doctor it was arranged that he would be visited at home the following morning. His mother opened the door of the flat and explained apologetically that Nigel had locked himself in his bedroom. Fortunately this was on the ground floor and could be entered feloniously. Nigel lay inert, covered with bedclothes, and would not respond to any overtures until it was noticed that he had been spending his time in making elaborate drawings. Interest was expressed in these and some speculation on their meaning. The boy slowly emerged from hiding, and although pale, ill-looking and unkempt seemed less emotionally disturbed than his behaviour pattern suggested. He accepted and kept a clinic appointment for the following day.

On the next point of management there is a clear split of opinion. Some writers (E. Klein, 1945; Eisenberg, 1958a; Glaser, 1959) put great importance on *getting the child back to school promptly* as an essential part of the therapeutic contract. E. Klein, the strongest advocate, maintains that his

† The author is not trained in Kleinian psychoanalysis, but like some analytical psychologists finds Melanie Klein's theoretical framework of essential clinical value. He is indebted to Dr. S. H. Klein, of London, for clarification of his thinking on this aspect of school phobia.

prevents the quick development of primitive regressive fear, which ensues if the child is excused school, and adds "The child is told that he must go to school every day, but does not have to stay there, and does not have to attend the classroom. The child can stay in an office, assist the staff, read or draw, and can leave at any time". His aim is "bringing about a return to school *at any level of participation that the child can tolerate*" (his italics). Clearly management on this basis requires the closest cooperation with school staff. This is customarily sought and maintained by the Educational Psychologist, who makes direct liaison with them and interprets to them the diagnostic formulation and treatment requirements of the Clinic team.

An opposite policy is employed by other writers (Lippman, 1956; Talbot, 1957; Hersov, 1960 b; Davidson, 1961) who begin by relieving pressure upon the parent and child with a medical certificate to excuse attendance, followed by a planned return to school after varying periods of psychotherapy. Several who work in this way place much importance on the timing of pressure to return to school. Johnson (1957) is critical of this approach, stating "We do not relieve the tensions of parent or child about school, but analyse that tension constantly. We make no issue of 'timing the return to school' but attend to the evasions and ambivalences expressed by parent and child. This approach gets children into school far more quickly than other methods". Similarly she criticizes such devices as attempting return to school with the mother sitting in the classroom, or father sitting outside in the car (Talbot, 1957) as "artificial encumbrances to self esteem and growth". Rather the number of treatment hours should be increased. These divergencies further illustrate the way in which the school phobia concept mirrors the growing pains of child psychiatry. Always the demand for management and treatment of children and their families, often far more ill than is generally appreciated, has pressed upon the clinician before he has adequately understood the syndrome under study and had time to evolve a rational programme of treatment based on the understanding of pathology, and adapted to the resources of his clinic team. Even to make public an interest in research into such a syndrome is likely to evoke a flood of referral for treatment, and where the pathological condition invites treatment for several members of the family the strain on the clinic is great. Extra treatment hours may not exist. Practical considerations often dictate *compromise* in managing the question of return to school, making virtue of necessity, as Davidson frankly admits (Davidson, 1961). The overall advantage of early return to school can be considered as generally accepted, but it is unlikely to be achieved with the adolescent with only a few months to remain at school, with the child whose presence in the home defends a parent against impending psychosis, or with the child who has been entrenched at home for months, and in whom secondary gain and the expression of aggressive triumph over a parent is dominating.

Where it is accepted that early return to school is unlikely, educational management is important. Home tuition will not, of course, be used in collusion with mother and child to disguise the need for return to school, but it may prevent further withdrawal from study and falling behind schedule, a factor which often renders return to school more difficult. In liaison with the clinic, the home teacher can also intervene in some of the pathological interaction between mother and child. Special educational provisions can be invaluable, such as the small Tutorial Classes for emotionally disturbed children available in London.

Clinical illustration: Stephanie was seen at home after a long period of absence. Her mother, a psychotically depressed widow, and her totally deaf maternal grandmother clearly nagged at her continuously. At the interview she sat for a long time staring at a newspaper, with her ears sealed by her hands, until it was possible to comment on how she felt persecuted by the nagging, which was being freely demonstrated.

Her extreme physical immaturity and the poverty of her dress were obvious ancillary reasons why she had not adjusted to secondary school. She was able to come to the clinic, and accepted the suggestion that she attend daily at a small Tutorial Class linked with it. Here she gradually became less withdrawn, made a good contact with the teacher, and became enthusiastic about writing a children's novel, which she brought in segments to her treatment sessions, and in which some of her conflicts were clearly expressed. Eventually she found for herself a place at a school providing secretarial training, typed out her book and submitted it for publication.

Change of school by itself is clearly seldom indicated or useful, but it may be a necessary adjunct to treatment if staff attitudes towards the absent child remain hostile in spite of clinic intervention. Removal from home is best considered after thorough treatment, and may be indicated then if intrafamilial pathology has proven resistant. Placement in a special boarding school is often of great value in these circumstances. Where removal is considered on the basis of the degree of personality disturbance in the child, psychiatric in-patient treatment is indicated (Warren, 1948; Hersov, 1960b). It must be that many school phobic children are removed from home through the Courts because of their legal infringement, and placed in Approved Schools. Little is known about these, and here another area demanding research appears.

PSYCHOTHERAPY IN SCHOOL PHOBIA

Talking of extremely disturbed children who find it impossible to return to school in spite of all the therapeutic efforts used to help them, Lippman (1957) states "There are such cases, in which nothing short of intensive psychoanalysis of the child and the parents may be required before the child is able to give up his phobia of school". Apart from the question of the availability of psychoanalysis, those children and families seen in general clinic practice who present the more severe forms of school phobia would seldom be considered good prospects for the psychoanalytic technique.

Children with school phobia (and their parents) undoubtedly do have psychoanalysis, but there has been little diffusion of psychoanalytic experience with them into the general literature on child psychiatry; further the psychoanalyst must gain a different view of the intrafamilial and management factors operative, and in a sense remain restricted in the extent and manner in which he may influence these.

Psychoanalytic technique can, of course, be modified for use in the clinic setting (Klein, H. S., 1961). Most of the methods of clinic psychotherapy discussed in any detail in the literature employ very considerable modifications, but are based on analytic insights, transference and the use of interpretation. Here again consideration of school phobia leads into a problem of importance for the development of child psychiatry as a whole. Lippman (1957), Kahn and Nursten (1964) and others have emphasized the need for the therapist working in this way to have *adequate training, including personal analysis*. It is by no means clear, however, how far this is true of all those whose treatment is described in the literature. Nor is there general agreement on the importance of personal analysis for aspiring child psychiatrists (Lewis and Winnicott, 1963), much less its relevance in the training of other members of the child guidance team.

Johnson *et al.* (1941) advocate that both the child and mother should be treated by a psychiatrist and found weekly interviews for periods of 5 months to 1 year successful in achieving a return to school. Eisenberg (1958 b) emphasize the need for treatment to be family-orientated, while Coolidge *et al.* (1960), dealing with the more severe adolescent cases, state that both parents should be included in the treatment, and add ego-strengthening measures (group experience, tutoring, etc.) to their therapy with the adolescent. Most English writers (Mason, 1959; Hersov, 1960 b; Davidson, 1961; Kahn and Nursten, 1964) describe the child as being treated by a psychiatrist or an analytically trained psychotherapist, while the mother receives casework treatment from the psychiatric social worker, and Kahn and Nursten describe the latter's role in some detail. With this pattern of treatment the need for close collaboration is obvious, and where the case worker is not analytically trained the role of the psychiatrist in determining her handling of the parents' material is of importance (Prince, 1961). Kahn and Nursten (1964) illustrate the educational psychologist's role as therapist to the child, and mention the combination of regular individual session for mother and child with occasional *family interviews*, a technique too seldom advocated.

Case illustration: Robin, aged 12, had some months of analytically based weekly psychotherapy, while his mother was receiving case-work help. He responded well, lost many anxiety symptoms and resumed regular attendance at school. One day he stated that the therapist should see the whole family—his mother, father and his sister (who suffered from migraine) were all neurotic and were hampering his progress by openly expressing their fears for him as he became more adventurous.

A joint interview with the psychiatric social worker and the four members of the family was arranged. Robin opened with a strong critical attack on his parents for wanting to hold back his development. His sister followed similarly, blaming them for her headaches. Father surprised his wife by rallying to her support, and mother, aided by the psychiatric social workers present, talked openly of her own fears and frustrations, and revealed for the first time details of her husband's neurotic behaviour. Subsequent family and individual interviews made possible useful working through of this material, and Robin's treatment progressed well.

In general, clinic psychotherapeutic treatment is based on careful assessment of the intrapersonal psychopathology of each child, and the intrafamilial pathology. Its aim with the child is not only for symptomatic "cure" (return to school) but the correction of personality distortions which bode ill for his future development, and active intervention in the intrafamilial interactions is usually necessary both in initiating treatment and in maintaining cooperation after return to school has been achieved.

Whatever pattern of treatment is initiated is likely to make heavy demands on the clinic resources, and raises the thorny question of *development* of such crucial importance in this stage of the development of child psychiatry (Eisenberg, 1961).

OTHER METHODS OF CLINIC TREATMENT

The inclusion of one or two school phobic children in analytically based *psychotherapy groups* for pre-adolescent and adolescent patients has proved rewarding, where the illness is of fairly recent manifestation and deeper characterological elements in its genesis are absent; the frequency with which young people in such group treatment spontaneously bring up topics of school experience, and provide the therapist with opportunities of linking their feelings about these with attitudes towards parents and siblings is useful, and the availability of such group treatment meets the need for rapid involvement in psychotherapy. The type of *family group* therapy described by Bell (1962) and others would also seem a promising approach, considering the constellations of intrafamilial pathology so commonly met with, and research into the efficacy of this method would surely be profitable. *Behaviour therapy* claims good symptomatic results with phobic states in general, and is likely to be used increasingly in child guidance practice (Pick, 1961). It may be indicated where clinic psychotherapy is not available, or where the child and family prove unresponsive, as a means of ensuring return to school and avoiding the damaging secondary effects of prolonged absence. Similarly, the use of anti-depressant or tranquillizing drugs as an adjuvant to clinic psychotherapy may make possible return to school in cases in which it is otherwise unlikely to be achieved (Burns, 1959).

PROGNOSIS AND FOLLOW-UP STUDIES

It is a feature of the literature that almost all writers claim good results in terms of symptom—of maintained return to school attendance, in spite

of the variation in techniques employed. Reviewing this aspect of the problem, Eisenberg (1961) states "It is characteristic of cases of school phobia that relatively few remain in treatment after successful return to school has been accomplished. A follow-up study then affords some measure of the effect of relatively brief therapy". He and his associates (Rodriguez *et al.*, 1959), reviewing forty-one cases after an average follow-up period of 3 years, found that twenty-nine children were attending school regularly, none of them exhibiting phobic symptoms in another area. Children over the age of 11 fared much worse according to this study, apparently justifying the distinction in outcome related to age as noted by Coolidge *et al.* (1959), but this distinction is not seen in the results of Davidson (1961). A follow-up 7-14 years after treatment of girls all of whom had been diagnosed as the "neurotic type" of school phobia showed that all were adjusted to different degrees (Nursten, 1963). Warren (1960) described the fate of sixteen patients, seven boys and nine girls, 6 years after admission to the adolescent unit because of continued refusal to go to school which had not yielded to child guidance treatment. Only six were regarded as quite well, and he considered the outlook worse when school phobia was accompanied by other phobic symptoms.

It is clear that long-term follow-up study is still needed, with all the technical difficulties that this entails, and that we do not yet know enough about the outcome of school phobia in terms of the adult adjustment of its victims, including their eventual psychosexual maturation. More information may be derived from retrospective study of adult psychiatric patients if the need for careful enquiry into school adjustment is borne in mind when they are examined, and more remains to be learnt about the connection, if any, between school phobia and such adult syndromes as absence from work, desertion from the Forces and florid phobic states.

Thus, Roberts has recently reviewed follow-up studies of patients with predominantly phobic symptoms (Roberts, 1964). The inadequacy of these studies is clear. His own follow-up of forty-one "Housebound Housewives" admitted to St. George's Hospital, London, between 1946 and 1962 reveals that only nine are recovered in that they are able to leave their homes unaccompanied and do not experience their old phobic symptoms even in a mild degree when they go out alone. However two of nine are still under psychiatric treatment, one of them experiencing persistent depersonalization symptoms. It is noteworthy that 50 per cent of these patients "had had at least one well marked neurotic trait, commonly a phobia, in childhood" and in adult life 53 per cent showed gross evidence of sexual maladjustment.

SUMMARY

School phobia is a symptom which may appear in larval, transitory form in normal children, but can become the main symptom in a mental illness of varying severity up to the psychotic. The history of the delineation of the symptom and its relation to separation anxiety is reviewed, and it is sug-

gested that here child psychiatry intrudes into an area of unresolved conflict of crucial importance to psychoanalytic theory.

The general clinical features and the family background in school phobic illness are described, and a psychopathological formulation is attempted, using the conceptual models described by Melanie Klein.

Methods of management and treatment are discussed, and also prognosis and follow-up studies, when it is suggested that our knowledge of the full history of the malady, and its relation to adult mental illness is incomplete.

It is maintained that the fact that the answers to this, and many other aspects of the problem which have been studied over a period of thirty years are not finally and conclusively established is typical of the difficulties which beset research in child psychiatry, and that efforts to meet the treatment needs of school phobic children and their families raise issues germane to the important question of the training and deployment of child guidance personnel in the context of the challenge of mental ill-health as it is appreciated today.

REFERENCES

- ADLER, A. (1930) *The Education of Children*, London, Allen and Unwin.
- AGRAS, S. (1959) The Relationship of School Phobia to Childhood Depression, *Am. J. Psychiat.* **116**, 533-536.
- BELL, J. E. (1962) Recent Advances in Family Group Therapy, *J. Child. Psychol. Psychiat.* **3**, 1-15.
- BLOS, P. (1962) *On Adolescence*, New York, Free Press of Glencoe.
- BONNARD, F. J. (1952) School Phobia. Is it a Syndrome? *Premier Congrès Mondiale de Psychiatrie, Vol. VII. Psychiatrie Infantile*, Paris.
- BOWLBY, J. (1958) The Nature of the Child's Tie to his Mother, *Int. J. Psycho-Anal.* **39**, 350-373.
- BOWLBY, J. (1961) Separation Anxiety: A Critical Review of the Literature, *J. Child Psychol. Psychiat.* **1**, 251-269.
- BOWLBY, J. (1964) A Note on Dr. Lois Murphy's Paper, *Int. J. Psycho-Anal.* **45**, 44-46.
- BROADWIN, I. T. (1932) A Contribution to the Study of Truancy, *Am. J. Orthopsychiat.* **2**, 253-259.
- BURNS, C. (1952) Preschizophrenic Symptoms in Pre-adolescents, *Nerv. Child* **10**, 120-128.
- BURNS, C. (1959) In "Truancy—Or School Phobia", London, N.A.M.H.
- CAMERON, K. (1955) Diagnostic Categories in Child Psychiatry, *Brit. J. Med. Psychol.* **28**, 67-71.
- CAMPBELL, J. C. (1955) Manic Depressive Disease in Children, *J. Amer. Med. Ass.* **158**, 154-157.
- COOLIDGE, J. C., HAHN, P., and PECK, A. L. (1957) School Phobia Workshop (1955). School Phobia: Neurotic Crisis or Way of Life, *Am. J. Orthopsychiat.* **27**, 296-306.
- COOLIDGE, J. C., WILLER, M. L., TESSMAN, E., and WALDFLOGEL, S. (1960) School Phobia In Adolescence: A Manifestation of Severe Character Disturbance, *Am. J. Orthopsychiat.* **30**, 599-607.
- DAVIDSON, S. (1961) School Phobia as a Manifestation of Family Disturbance: Its Structure and Treatment, *J. Child Psychol. Psychiat.* **1**, 270-287.
- DIXON, J. T., DE MONCHAUX, C., and SENDLER, J. (1957) Patterns of Anxiety: The Phobias, *Brit. J. Med. Psychol.* **30**, 34-39.
- EISENBERG, L. (1958 a) School Phobia. A Study in the Communication of Anxiety, *Am. J. Psychiat.* **114**, 712-718.

- EISENBERG, L. (1958 b) School Phobia: Diagnosis, Genesis and Clinical Rearrangement, *Ped. Clin. North America* 5, 645-666.
- EISENBERG, L. (1961) The Strategic Deployment of the Child Psychiatrist in Preventive Psychiatry, *J. Child Psychol. Psychiat.* 2, 229-241.
- ESTES, H. R., HAYLETT, C. H., and JOHNSON, A. M. (1956) Separation Anxiety, *Am. J. Psychother.* 10, 682-695.
- FREUD, S. (1913) *The Interpretation of Dreams*, London, Allen and Unwin.
- GLASER, K. (1959) Problems In School Attendance, *Paediatrics* 23, 371.
- HERSOV, L. A. (1960 a) Persistent Non-Attendance at School, *J. Child Psychol. Psychiat.* 1, 130-136.
- HERSOV, L. A. (1960 b) Refusal to go to School, *J. Child Psychol. Psychiat.* 1, 137-145.
- JOHNSON, A. M., FALSTEIN, E. L., SZURSK, S., and SVENDSEN, M. (1941) School Phobia. *Am. J. Orthopsychiat.* 11, 702-711.
- JOHNSON, A. M. (1957) School Phobia Workshop, 1955. Discussion, *Am. J. Orthopsychiat.* 27, 307-309.
- JUNG, C. G. (1954) *The Development of Personality*, London, Routledge and Kegan Paul.
- JUNG, C. G. (1963) *Memories, Reflections, Dreams*, London, Collins and Routledge and Kegan Paul.
- KAHN, J. H., and NURSTEN, J. P. (1964) *Unwillingly to School*, London, Pergamon.
- KLEIN, E. (1945) The Reluctance to go to School, *Psychoanal. Study Child* 1, 263-279.
- KLEIN, H. S. (1961) The Use of Analysis in a Child Psychiatric Clinic, *J. Child Psychol. Psychiat.* 1, 288-297.
- KLEIN, M. (1948) *Contributions to Psycho-Analysis*, London, Hogarth.
- KLEIN, M. (1949) *The Psycho-Analysis of Children*, London, Hogarth.
- LEWIS, A., and WINNICOTT, D. W. (1963) Symposium: Training for Child Psychiatry, *J. Child Psychol. Psychiat.* 4, no 2, 75-91.
- LIPPMAN, H. S. (1957) Workshop: School Phobia. Discussion, *Am. J. Orthopsychiat.* 27, 776-780.
- MAGNAY, H. S. (1959) in *Truancy—or School Phobia*, London, N.A.M.H.
- MASON, E. M. (1959) in *Truancy—or School Phobia*, London, N.A.M.H.
- MILLER, E. (1960) A Discourse on Method in Child Psychiatry, *J. Child Psychol. Psychiat.* 1, 3-16.
- MURPHY, L. B. (1964) Some Aspects of the First Relationship, *Int. J. Psycho-Anal.* 45, 31-41.
- NURSTEN, J. P. (1963) Projection in the Later Adjustment of School. Phalic Children, *Smith College Studies In Social Work* 33, 210-217.
- PORTRIDGE, J. M. (1939) Truancy, *J. Ment. Sci.* 85, 45-81.
- PRINCE, G. S. (1961) A Clinical Approach to Parent-Child Interaction, *J. Child Psychol. Psychiat.* 2, 169-184.
- RODRIGUEZ, A., RODRIGUEZ, M., and EISENBERG, L. (1959) The Outcome of School Phobia, *Am. J. Psychiat.* 116, 540-549.
- SEAY, B., HANSEN, E., and HARLOW, H. F. (1962) Mother-Infant Separation in Monkeys, *J. Child Psychol. Psychiat.* 3, 123-132.
- SUTTENFELD, V. (1954) School Phobia—A Study of Five Cases, *Am. J. Orthopsychiat.* 24, 368-380.
- TALBOT, M. (1957) School Phobia Workshop, 1955, Panic in School Phobia, *Am. J. Orthopsychiat.* 27, 206-295.
- WALDFLOEGEL, S., COOLIDGE, J. C., and HAHN, R. B. (1957) The Development, Meaning and Rearrangement of School Phobia, *Am. J. Orthopsychiat.* 27, 754-758.
- WARREN, W. (1948) Acute Neurotic Breakdown In Children With Refusal to go to School, *Arch. Dis. Child* 23, 266-272.
- WARREN, W. (1960) Some Relationships Between The Psychiatry of Children and of Adults, *J. Ment. Sci.* 106, 815-826.

CHAPTER 7

Bereavement and Lack of a Parent in Childhood

by FELIX BROWN

“The Lord gave and the Lord hath taken away” (Job 1, 21)

“In my beginning is my end” (T. S. Eliot, *East Coker*)

“In the lost boyhood of Judas, Christ was betrayed” (A. E., *Germinal*)

Death of a parent during childhood has been recognized by writers and poets since the beginning of recorded time as one of the worst misfortunes that could occur to a human being. After Hector's death, Andromache says of her orphaned son, “The day of his father's death cuts a child off from his playmates, his head is bowed down and his cheeks are wet with tears. He goes to his father's friends for help, tugs one by the cloak, another by the sleeve. One, taking pity may moisten his lips a little from the cup, but he may not drink deep. And some child, whose father lives, will drive him from the feast with blows and insults. ‘Go away, your father is not at this table’.” The emphasis here is on the lack of the father, of his protection and power, rather than on the actual bereavement or loss of a loved parent.

Wordsworth, who lost his mother when he was eight, says:

“She, who was the heart

And hinge of all our learning and our loves,

She left us desolate, and as we might,

Trooping together.”

referring to both the bereavement and to the subsequent lack of the mother.

The two naturally are associated, but nevertheless the distinction is worth making as lack of a parent, of the service, provision and status which he might have provided, is just as significant if the child has never seen his father. Arnold Toynbee the historian, in 1922, stressed the importance of parental lack in a very biologically orientated paragraph: “A child's life and character are more affected by deliberate imitation of its parents than by inheritance of some particular colour of hair and eye or shape of chin or pitch of temperament. And while the inheritance of these latter characteristics from one among a limited number of ancestral strains is inevitable, the voluntary legacy may never be transmitted at all. The child will never claim it unless he knows his parent and respects him. The parent's premature

death, or removal or the lack of sufficient sympathy between the parent and child, can in this case inhibit the transmission, and the potential legacy, with its momentous possibility of influence on the child's career, will never in fact be bequeathed."

Scientific writers have been curiously slower than literary ones to appreciate the significance of bereavement and parental lack to a child. Freud says that to a child, death means little more than a departure or disappearance, though the reverse is perhaps more nearly true. He points out the similarity between mourning and melancholia but does not really stress mourning in a child at the loss of a parent. Mapother in 1926 said that death of husband or wife seemed the commonest provoking circumstance for depression, and that many cases show a regression to events in early life tinged with the same emotion, suggesting that it is a kind of reactivation of some previous experience, which is very much in line with modern thinking. Anthony, in 1940, gave a very clear account of children's thinking, and fears about death, which are often very marked even as early as 3 years of age. She also stresses the trauma of bereavement, and makes the valuable point that at the age of about 8-12 the child tends to blame himself for the death of the parent, and these guilt feelings should be dealt with by some therapy or at least reassurance if the child is to lose his anxiety. Burlingham and Anna Freud described the reactions of children in a residential nursery during the last war, their depressive phases, and need for parent substitutes. Particularly interesting is their description of some children whose fathers were killed, who denied their loss and made up stories about their fathers' visits. Spitz filmed and described the grief of infants separated from their mothers in orphanages and hospitals (1945, 1946) and Robertson in this country filmed and described the anxiety and depression of infants admitted to hospital, which were in fact equivalents of mourning. It is no exaggeration to say that it is largely as a result of this work that parents are now allowed to visit their children daily if they are admitted to hospital. Bowlby has extensively synthesized the thinking on mourning and bereavement in early childhood. He describes three phases, protest and angry crying, depression, apathy and withdrawal and despair, and detachment from the absent mother, in the reaction of an infant separated from its mother for as long as a month. This is certainly true if there has been previously a close relationship between the mother and child, but if there has been "multiple mothering" or divided or even unstable care, the mourning of the child on separation from the mother is not so clear or is entirely absent. This is not an argument for unstable care, as there is evidence that this produces some personality impoverishment though Mead even suggests that multiple mothering might be beneficial as it relieves the child from the danger of excessively traumatic separation if he is not too dependent on one mother. There are possible gains and dangers in either course, though our prejudice is in favour of natural mothering. There is a time for mothering and a time for separation.

Bowlby regards the period from 6 months to the end of the fourth year of life as the period at which separation from the mother is taken by the child as a bereavement, and equates the grief of a separated child with the mourning of a bereaved adult. He stresses the effect of loss of mother in infancy, rather than loss of father or bereavement in later childhood. The emphasis is on the bereavement trauma, the memory of what has been lost, rather than on the lack of continuous parental influence throughout childhood and adolescence.

EVIDENCE FOR THE SIGNIFICANCE OF CHILDHOOD BEREAVEMENT AND PARENTAL LACK

The observations outlined above have been mainly on individual children. Convincing as these observations are to those who work with children, yet they have fallen short of scientific proof. During the last 20 years most psychiatrists have been substantially unconvinced of the significance of these childhood experiences of loss and deprivation in the aetiology of adult psychiatric illness and abnormality, and the relationship between child and adult psychiatry has not always been clear. It is obviously reasonable that statistical studies should be made on large numbers to confirm the observations made on individual children. Investigating the incidence of parental death in the childhood of adult psychiatric patients is one of the ways of doing this. Barry (1936) was the first to use this method by noting the high incidence of orphanhood in psychopathic kings throughout history, but the children of kings, even if not actually smothered, seem to have been appallingly brought up, and adequate controls are naturally not available. He subsequently studied psychotic patients in a mental hospital, and found that 15·3 per cent of a series of 549 patients had lost mothers before 15 compared with 5·3 per cent in some actuarial controls, an important observation. With Lindemann in 1960 he found maternal loss to be three times as common in psychiatric patients as in controls, and related loss of mothers in childhood to psychoneurosis in women. Gregory reviewed the statistics of childhood bereavement in adult psychiatric patients and concluded that it was significant in delinquency, but not proven in adult psychoses. In 1961 he investigated 216 cases of depressive illness attending a psychiatric out-patient department, comparing them with the 1921 census and with 267 controls attending general practitioners. The incidence of bereavement at various ages is shown in Figs. 1 and 2. From this it is seen that death of fathers is commoner than death of mothers in these cases, and continues to be significant throughout childhood and even late adolescence. Death of mothers looks to be slightly more significant in early childhood, but one is not justified in concluding from these figures that death of mother is a more serious trauma in early childhood and death of father more serious in adolescence, but only that it appears slightly commoner at these ages in the

Incidence of Death of Fathers at Various Age Groups. (Brown)

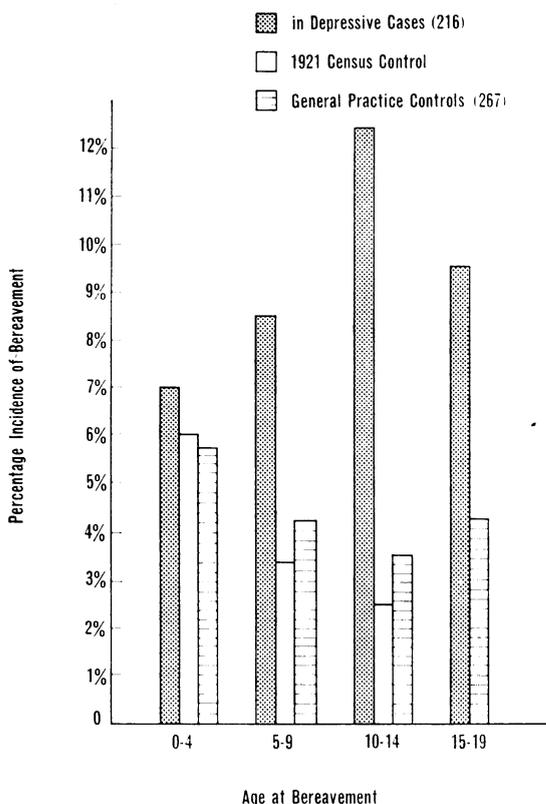


FIG. 1

histories of these depressives. † For any individual it is a serious event at any of these ages. Revision of this work with a larger series (331 patients, 296 controls) in association with L. Lipworth showed that the depressive patients had almost double the general population incidence of death of father before 15 (22.4 per cent compared with 12 per cent) and double the incidence of deaths of mothers before 15 (15.6 per cent compared with controls of 5.7 per cent and 8.5 per cent). This figure of 15.6 per cent agrees closely with that of Barry for in-patient psychiatric cases. Death of either parent before 15 is also almost twice as frequent in these depressive cases as it is in the general population (31.5 per cent compared with controls of 16.4 per cent and 18.5 per cent). Beck Sethi and Tuthill have recently confirmed with a study of 290 cases the high incidence of childhood bereave-

† Dennehy, in a survey of 1020 patients in mental hospitals near London, found increased incidence of loss of mother in early childhood in schizophrenics, increased loss of father in female depressives, loss of mother in male depressives.

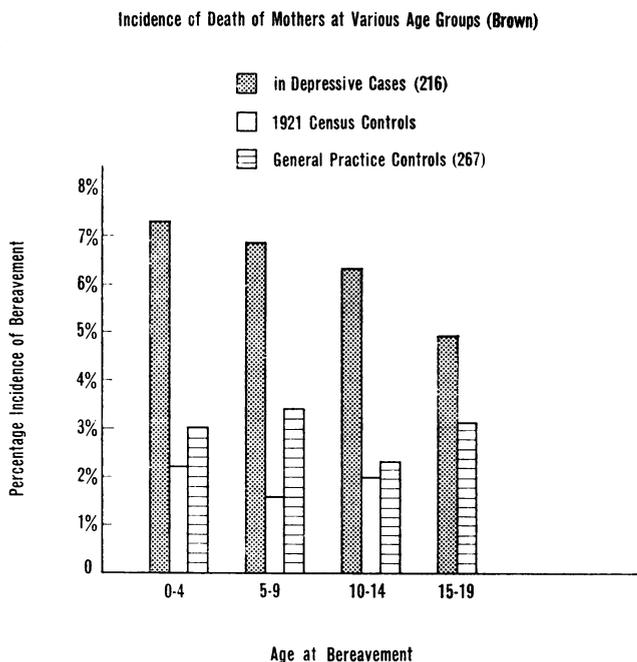


FIG. 2

ment in depressive patients. Pollock also finds a high orphanhood rate in 380 private psychiatric patients.

It thus appears that death of either parent during childhood or adolescence is significantly correlated with depressive illness, which is one of the commonest adult psychiatric disorders. The possibility of elderly parents or a preponderance of youngest children has not been excluded; nor were the controls matched pairs according to age of mother at birth, as this would have made it impossible to obtain statistically significant numbers. It is, however, probable that childhood bereavement can be an aetiological factor in the subsequent development of depressive illness in adults. The figures do not of course show whether it is the bereavement itself or the attendant circumstances, the disorganization of the home, the lack of the parent's influence, which is the operative factor. Probably it is both. It may be that a depressing experience in childhood becomes as it were covered up, to be reactivated when in later life a somewhat similar loss occurs. The analogy of early sensitization rendering a person liable to have an anaphylactic reaction later, on encountering the same protein, is appropriate. I have frequently seen adult, even elderly patients, suffering from depression who were still concerned about the death of a parent years ago in their childhood, though other cases occur in which the loss has been completely excluded from consciousness.

The Gluecks in their study of 500 delinquent boys found an increased incidence of parents unknown or divorced, or separated. Analysis of some of their figures suggests that death of mothers was also significantly more frequent in these boys, but not death of fathers. We (Brown and Epps), however, found that death of both fathers and mothers was significantly more frequent in 546 women prisoners than in the general population (age corrected from 1921 census and Widows' Pension figures) controls, as shown in Fig. 4. Death of fathers before 15 occurred in 18.2 per cent, death of mothers in 13.2 per cent and 40.5 per cent lost either or both parents by death before 20. Moreover 14.7 of them had not known one or both parents.

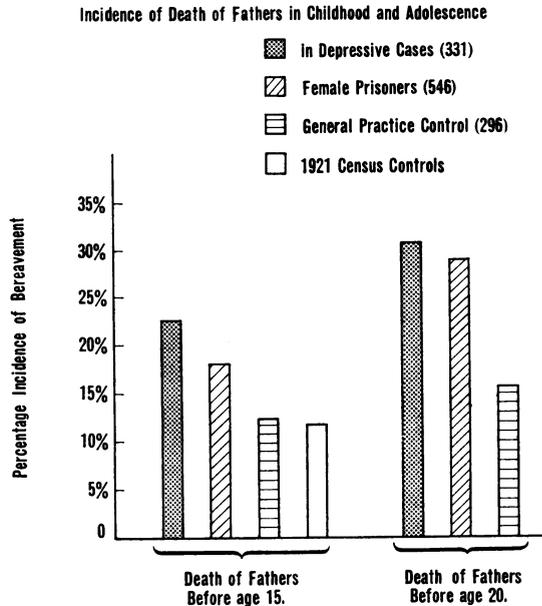


FIG. 3

L. Field similarly recorded 168 male consecutive admissions to Wormwood Scrubs Prison, and both the paternal and maternal orphanhood rate is raised, though less than in women prisoners, 13.4 per cent death of fathers before 15, and 8.6 per cent death of mothers before 15 (Fig. 5).

Death of both fathers and mothers seems to be significant both in childhood and throughout adolescence in delinquents of both sexes, but it is probable that the traumatic influence is not so much the actual bereavement, as the family disruption which may follow it. Frequently the whole family is disorganized by the death of a parent resulting in children being moved from place to place among strangers. The 546 women prisoners

Incidence of Death of Mothers in Childhood and Adolescence

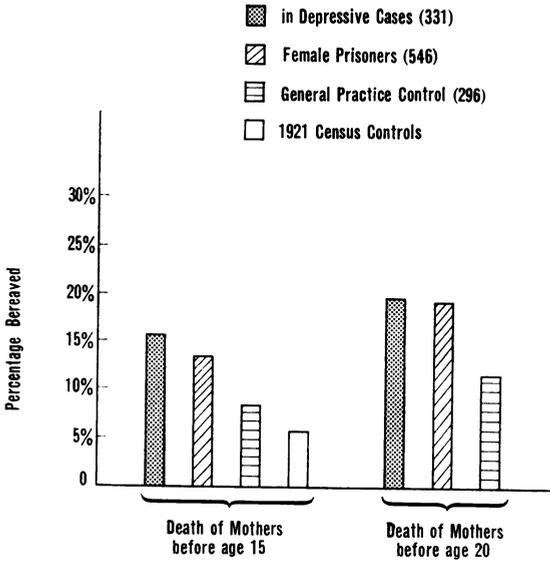


FIG. 4

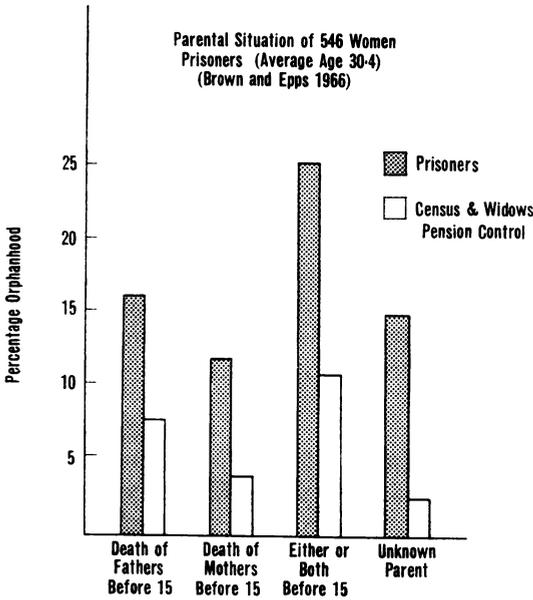


FIG. 5

had 366 children under 15 in institutions, fostered or with relatives. The situation of these children is likely to be such as to render likely a repetition of the same pattern of events in future generations, especially as we found that 73, or 13.4 per cent of the women prisoners had themselves been brought up in orphanages.

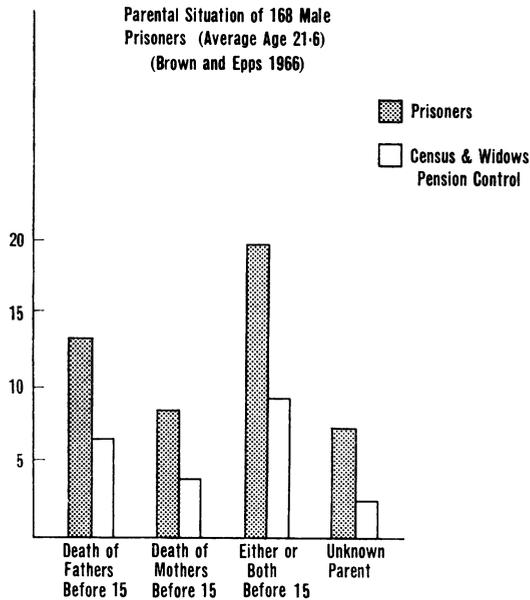


FIG. 6

It is probable that the fact of fatherlessness rather than the actual bereavement is the significant factor in these female delinquents. They have lacked the training, protection and support, both financial and educative, which a father can provide. Frequently the whole family is disorganized by the death of the father, resulting in the children being moved from place to place among strangers and complete disruption of the important emotional education of a child which is obtained in a normal family. The loss of a father can be chronically traumatic even when the child has never known the father at all.

Many of the case histories of these fatherless girls show the disorganization which followed the father's death; for instance a girl of 18 convicted of larceny. Her father died when she was 3; she was sent to a foster home until 10, then returned to her mother who had remarried. There was friction with the stepfather and she left home at 15. Many of those who had parents alive, had been sent to foster homes or orphanages after being abandoned etc., so that in effect they were parentless. For instance a

25-year-old woman was admitted for prostitution. She was also a drug addict. Her parents separated when she was 2; her mother became a prostitute. The girl was fostered with a kind family until 5, when her father sent her to his rather stern sister, until 7, when her mother took her back and actively ill-treated her. She was then sent by the N.S.P.C.C. to a large council children's home, which she considered to be the loveliest place she knew, but she was only allowed to stay a year, and was transferred to a convent, where she considered she was ill-treated, being frequently beaten and locked up alone. She says, "I gave up then". She was released at 15 and after a few months in a hostel, drifted into night clubs as she was unable to keep any job. She lived with a man for a while, had a baby girl when she was 18, but left her to the care of her mother. When the man went to prison, she took a ponce who provided her with drugs. She did not want to come off them, as they prevented her from becoming involved with anyone. When short of drugs she tended to make suicidal attempts which often got her into hospital. An intelligent girl, of excellent social manners, she has remarkable insight: "From a child everything has gone wrong, I'm afraid of loving anyone now."

Lack of parents as a factor in prostitution is probably universal and not confined to England. For instance Wilson in Singapore examined 39 juvenile prostitutes, and found that 27 had both father and mother dead or missing, 5 father dead or missing, and 3 mother dead or missing. Shoor and Speed in the U.S. describe delinquency following bereavement.

Female delinquency is probably very different from male delinquency. Most women sent to prison are, if not prostitutes, promiscuous or extremely confused in their emotional relationships. The female offences can be almost regarded as a direct appeal for love and affection, while male offenders show a more aggressive quality, with violence and defiance of authority. It is interesting that John Bunyan in the seventeenth century takes the relation between orphanhood in girls and their seduction quite for granted, when he says of a girl in *The Life and Death of Mr. Badman*: "Her father and mother were dead, that he knew well enough, so she was the more easily seduced by his naughty lying tongue."

ORPHANHOOD AND GENIUS

I do not wish to give the impression that orphanhood or loss of parents in childhood is inevitably disastrous; obviously in most cases it is not. In order to counteract too gloomy a view of orphanhood, I will quote a survey of the orphanhood of 57 distinguished writers, mainly poets, from the *Oxford Book of English Verse* and from the *Dictionary of National Biography*, which was made by Mr. and Mrs. McGlashan and myself. They include people like Keats, Wordsworth, Coleridge, Swift, Edward Gibbon,

Thackeray, Robert Bridges, men who form an important and permanent part of our cultural tradition. We found that more than half of them (55 per cent) had lost a father or mother by death before the age of 15, a higher orphanhood rate than either the depressive or female delinquent cases. The calculation of the general population orphanhood rates at the appropriate times since the beginning of the eighteenth century has not yet been attempted, and so adequate controls are not available. J. B. Priestley (himself bereaved of his mother in childhood) wrote of Meredith, who lost his mother when he was 5: "A child so situated is under the necessity of developing his own resources and so contrives to live richly in his imagination, which is precisely what Meredith did according to his own account of his childhood. Nearly all extremely creative men of genius, who later in life have had the capacity of living intensely with the creatures of their imaginations, seem to have been deprived of a normal, happy and healthy childhood which would not have driven them as they were driven, to compensate themselves for their lack of companionship and outward incident by an early life of dreams and fantasies." This is not an argument in favour of orphanhood and deprivation, but the existence of these eminent orphans does suggest that in certain circumstances a virtue can be made of necessity, and that sometimes "sweet are the uses of adversity". From reading the biographies of these great men, one finds certain circumstances usually to have prevailed to modify the hardship of orphanhood, these are: high intelligence, good education, a responsible surviving parent or some adequate parent substitute, and sufficient money. Owing to lack of these, far more have been broken by bereavement than ennobled by it. The central point of this chapter is not to emphasize the disaster of bereavement or lack of a parent, at it is sometimes inevitable, but to state that the orphaned child is at risk, and that how the child develops depends on how the bereavement is handled and how the lack of a parent is compensated. Orphanhood is a challenge to all who have to deal with it.

THE REACTION OF CHILDREN TO BEREAVEMENT AND ORPHANHOOD

There is evidence that orphanhood can impair the physical health. This is shown by the increased mortality of orphans. Some of this may be due to increased exposure to infantile dysentery and other infections if an infant has to enter an institution. Loss of mother to a baby, followed by inadequate substitute mothering can also have serious effects on the intelligence. Those of us who remember the children's homes and orphanages of 20 years ago, where children were kept confined to cots up to 3 or 4 years of age, recognize them as having been factories for the mass production of defectives. Intelligence develops by curiosity and exploration, but if this basic exploratory instinct is inhibited at an early age, it is very difficult to re-arouse. The whole development of the child depends on the appropriate stimulus and experience

being available at the right time, and too late is no better than never. Skin stimulation by mothering seems to be essential to human and primate babies. Beckett and Frohman have observed baby monkeys brought up away from their mothers. They were mentally abnormal and anti-social as a result, but they also showed a biochemical blood change (high lactic: pyruvic acid ratio) compared with other monkeys. The same change is said to occur in human schizophrenics. These results if confirmed introduce a whole new subject of the biochemistry of maternal deprivation.

Infantile autism, in which the child loses all concern with human beings, restricting the interest to his own body or inanimate objects, sometimes follows death of the mother in infancy. The apathetic withdrawn phase of separation mourning can, but fortunately does not often, pass into a frankly psychotic state. There are other factors both constitutional and sometimes organic, involved in autism (which is discussed elsewhere in this book), but most child psychiatrists have seen cases of autism in which the symptoms clearly followed loss of the mother, and it is natural to suppose that the loss in part caused the autism, negatively conditioning the child against all human beings who even remotely resemble the mother from whom all contact has been fractured. The average child, after complete detachment from the mother, searches for other relationships and affection almost like a stray cat or dog, and the complete autistic state is the reaction of the unusual child.

BEREAVED CHILDREN IN NURSERY SCHOOLS

A series of fifty-three bereaved children attending nursery schools throughout Britain has been collected by the members of the Nursery School Association. Although this material is not suitable for statistical analysis, certain observations can be made from them. Denial is fairly frequent in under-5 children, as Burlingham and Anna Freud found. In some cases the surviving parent even maintains the denial. The mother of one 5-year-old girl whose father suddenly died in the night, acted with such dispatch in hurrying the child out of the house that the child was never able to appreciate what had happened and the fiction was maintained that father had gone to hospital, but he was never discussed or alluded to. This child was recognized by the nursery nurses as depressed and puzzled, wondering why her father had left her. This utter denial, fostered by the surviving parent, is obviously a morbid reaction likely to lead to worse distress. The interest of this series is that they are not selected on account of neuroticism or behaviour disorder, but for the fact of bereavement. It is obvious from these records that intelligent and kind staff in nursery schools can help a bereaved child to "act through" or play out the intense feeling following a death of a parent. Phases of clinging, sudden aggression then reconciliation were common. Two cases of delayed speech occurred. It is necessary

for the adults dealing with these children to face the fact of the child's loss and not try to pretend it has not happened. The general impression from these cases is that recovery depends on maintaining the integrity of the home and especially on the stability of the surviving parent and his or her continuing concern for the child. For instance one 4-year-old whose father had died of lung cancer tended just to rush around aimlessly, was difficult at home where he lit fires whenever possible. His mother, quite unable to cope, is described as at her wits' end. The little boy told her to save up and buy another daddy, but she was making arrangements to have the child fostered. In this kind of case one can foresee an unsatisfactory outcome unless the mother could be helped to give up her rejection of the child. On the other hand, a 6-year-old girl, who cried a lot with her mother after her father's death, and who kept saying at first, "I wish Daddy was still alive", calmed down and in 2 months seemed to have recovered. Her mother was stable, loving and responsible, and was actually engaged to work in the nursery, so that she was herself supported and yet was not really separated from her child. The child still says "When will we forget about Daddy?" In this case one would foresee a satisfactory adjustment. An example of a child acting out her feelings about death and loss of her mother is shown in a 4-year-old girl who hit her favourite teacher saying, "I'll make a hole in you. You're dead. No you're not. I love you." The acceptance and understanding of these kinds of reactions in bereaved children is indeed therapeutic and the nursery schools fulfil an important function in supporting not only the child but frequently the surviving parent.

BEREAVED CHILDREN ATTENDING CHILD GUIDANCE CLINICS

Bereaved children attending child guidance clinics probably do not represent a true sample of children's reactions to bereavement in the general population. For instance McGlashan has found that only 4.3 per cent of the 2310 children referred to the Earls Court and West London child guidance clinics from 1949 to 1960 were bereaved of a parent. Friedman and Traill, out of 1007 children at Wembley and Notting Hill clinics found 6 per cent to be bereaved. These figures are no higher than the incidence of bereavement in children in the general population. This is probably because bereaved children do not tend to be referred to clinics as the surviving parents are too busy or distracted, the children may be placed away from parents and of course the majority of these children do not show florid symptoms. Nevertheless the bereaved children attending clinics can give some indication of the kinds of disturbance that can follow loss of a parent. Any of the symptoms for which children are referred to clinics seem to follow bereavement. McGlashan found as presenting symptoms in order of frequency: stealing, enuresis, truancy, school phobia, behaviour difficulties, depression, speech disturbance. Anxiety state and depression were the

commonest diagnoses. The intelligence curve of these children was normal but in 68 per cent of them, school backwardness and markedly impaired school performance was a prominent symptom. Obviously depression is likely to impair school performance. There is also perhaps the fact of the loss of the parent whom the child would wish to please by doing well at school. Improved school performance is a good measure of recovery. It is important that school teachers should appreciate this effect of bereavement, so that it can be dealt with sympathetically and not punitively.

McGlashan found that half of the children had been bereaved under the age of 4; of the whole series 69 per cent had lost fathers, 31 per cent lost mothers. Only 18 per cent were referred to the clinic within a year of bereavement. McGlashan considers that an important factor in producing symptoms is the effect the bereavement has on the surviving parent, usually the mother. Though the mother is probably more important to the young child than the father, yet a mother who is depressed after the loss of her husband may provide an environment lacking in normal warmth and security. A rather high proportion—27 per cent—that were offered therapy, failed to attend, this was probably owing to distraction and need to work on the part of the widow. Therapy is however important in many of these children, and frequently there emerge in the course of treatment some very strong guilt feelings in the child about the death of his parent, and fear of the vengeance which his dead parent in the form of a ghost, may wreak upon him. A 9-year-old boy who had lost his much-loved father 2 years previously, and who was referred to me for school phobia, enuresis, encopresis, and night terrors, showed this fear vividly in a William Tell picture he drew, showing the arrow shot by the father off-stage, splitting the apple on the head of the terrified son (Fig. 7). Later he also drew some happier pictures illustrating his mother, and play therapy (Figs. 8 and 9). Marked clinical improvement usually follows the allaying of the parricidal guilt in the course of therapy. The child often has to accept the fact that he has been really angry with the deceased parent. As one sometimes becomes identified with a revival of the dead father, one usually has to continue the therapeutic relationship right through into adolescence, unless the environment provides another parent substitute. The boy mentioned above developed a strong therapeutic relationship at the clinic which enabled him to accept a step-father who was able to take the responsibility later, and complete recovery occurred. There is something to be said for the therapist being of the same sex as the deceased parent, and it is important not to let down any of these bereaved children by breaking off concern too soon, or referring them for therapy to temporary staff.

Different members of a family can react very differently to the same bereavement. This is shown clearly in a family of five children seen recently at Earls Court clinic. The father had died of gastric cancer 9 months previously, after several months' illness at home. The mother brought the 6-

year-old boy to the clinic because he clung to her and would not be separated from her if only to another room in the house, since his father's death. He also had nightmares and screamed in his sleep. This boy was very fond of his father and had spent all his spare time in his father's bedroom during his illness. The mother is a stable and responsible woman but she tried excessively to control herself, especially as her husband after he had lost his voice in his illness wrote "Don't cry" on a piece of paper. She said she was afraid of showing her sorrow for fear of upsetting the children. She found, however, she was able to show her feelings with the 14-year-old boy, who after a period of crying had been able to cope very well and responsibly with the loss of his father. The 12-year-old boy was very naughty at first, used to run out of the house and hide so that his mother had to find him. He turned against his mother and said "It ought to have been you and not my Dad". He visits the cemetery on his own every week. He suddenly became backward at school, but is now improving. The 10-year-old girl became intensely distressed the day before the funeral, had violent pains in her stomach and lost the use of her legs. This seems to have been an hysterical reaction. She recovered after the funeral, but still cries on her own. The 6-year-old developed the intense anxiety and mother-clinging described. The 2-year-old girl however seems quite happy, still remembers her father, talks to his photo, denies he is dead, though her mother has told her. If any of the other children take any toy of hers or otherwise annoy her, she says "My Daddy will come back and smack you when he comes from hospital", which never fails to terrify the rest, especially the 6-year-old boy who was thoroughly intimidated by his little sister's ability to raise his father's avenging ghost. The 6-year-old boy is in treatment and is progressing well. Even at the first interview he was much reassured when told in front of his mother how, while his brother only blamed his mother, he had blamed himself which had made him even more unhappy. Obviously a family like this will need support for some time, but the prognosis is good, as the family has kept together, the mother is stable and responsible, and is not crushed by sudden financial difficulties.

It is not possible to define the reactions of children at different ages to bereavement and lack of a parent, but there are certain clinical impressions: the infant reacts to loss of mother by profound grief and mourning, to loss of father by denial; anxiety reactions are common in school-age children, with impairment of school performance; fatherless adolescent girls are particularly vulnerable to unreliable father substitutes who may present themselves; fatherless adolescent boys brought up with their mothers tend to become much involved with them, without the modifying influence of the father. There can occur disturbances of sex identification (particularly stressed by Arthur and Kemme, in their study of 83 bereaved children) and sometimes even matricidal aggression. Similarly motherless adolescent girls brought up with fathers without another woman tend to

become anxiously involved with their fathers, but this situation is not common, as fathers usually enlist the help of female relatives or a second wife. These are of course merely clinical impressions, and many more precise observations need to be made. We probably know more of the nesting habits of the great crested grebe than we do of the circumstances which produce desirable and undesirable personality reactions in children, of how children should be trained in fact, although this knowledge is of fundamental importance to us.

REACTION OF THE SURVIVING PARENT

The prognosis of a fatherless or motherless child depends largely on the resilience of the surviving parent. Double orphanhood for this reason naturally renders a child even more at risk. I have found the incidence of double orphanhood in adult depressive patients to be three times, and in female prisoners double, that in the general population (Fig. 10). The prognosis in double orphanhood will depend on the efficiency and kindness of

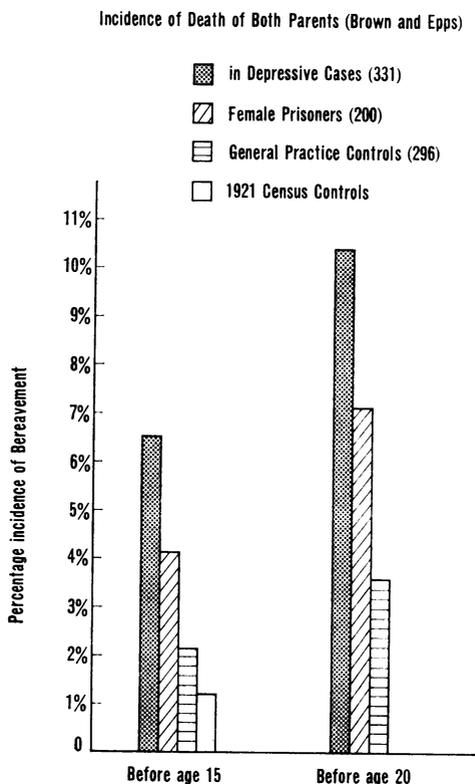


FIG. 10

the relatives and those who have to take the place of the parents. Where one of the parents survives, it seems that widowers tend to cope rather better than widows. In McGlashan's study, more than half the widowers arranged for the child's care until remarriage and then regained the child. The fact that widowers continue at work, and do not suffer financially, helps considerably with their adjustment, and female relatives tend to come to the aid of widowers who receive more support than widows. Only a quarter of the widows remarried.

Adequate mourning in which the widow allows herself to show her feelings to her children who can share her grief, probably helps to resolve the situation more than the custom of inhibiting emotional distress which is often regarded as the correct course in England.

Immediately after a bereavement, denial or disbelief that it has occurred is a common and profound reaction in adults as well as in infants. This is well shown in one of the hymns of Isis, the widow goddess of ancient Egypt, as she mourns her husband Osiris:

Oh helpless one, asleep in this place that you know not,
 Yet I know it.
 I have found you lying on your side, Oh weary one.
 This is our brother, this is our husband.
 Let us lift up his head and join his bones.
 Let us assemble his limbs and put an end to his helplessness.
 So that he will no more be weary.
 May his spirit rise again,
 The canals be filled and the rivers flow again.
 Oh, live, Osiris,
 Osiris, Oh dear sleeper arise,
 For I am Isis.

Queen Victoria in her widowhood maintained this denial stage of mourning for many years, retaining even several rooms untouched in readiness for the return of Prince Albert. Usually and fortunately the denial gives place to acceptance, and the need to cope with the practical things of life and to care for the children and meet other people at work, enables the widow to cope less painfully with her loss. The problems of widows have been described by Marris, who particularly draws attention to the accentuation of their difficulties by sudden poverty, which sometimes enforces a breaking up of the family at this critical time. Frequently mourning provokes symptoms indistinguishable from depressive illness and it is not surprising that Parkes has found that death of a spouse increases by six times the likelihood of a person requiring admission to a psychiatric hospital within 6 months. Community support is particularly needed for bereaved parents, and organizations like the Widow's Cruse Club established by A. and M. Torrie helps by assisting both with practical problems, and by restarting social life for the bereaved parent. Jones's recent book also gives much practical advice to mothers of fatherless families.

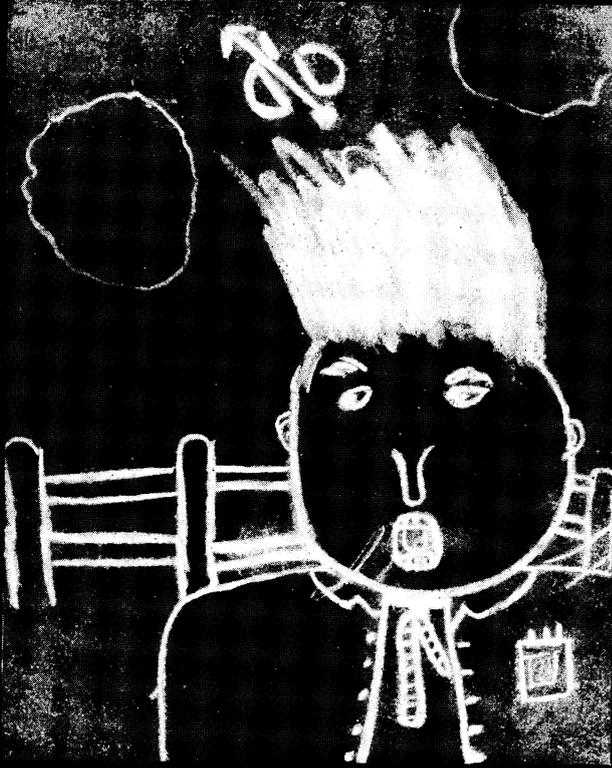


FIG. 7

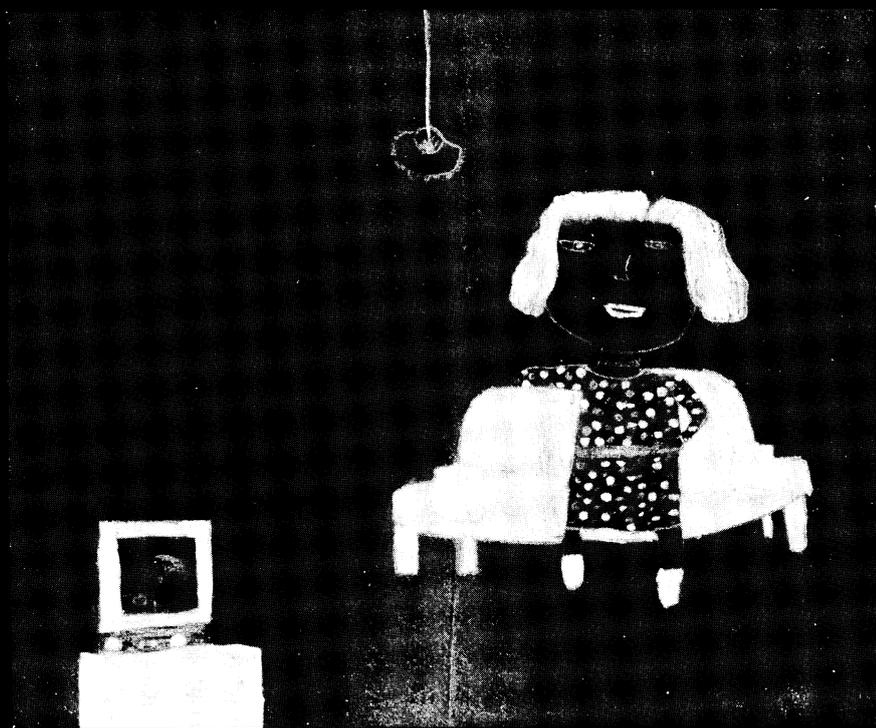


FIG. 8



FIG. 9

SOCIOLOGICAL OBSERVATIONS ON FATHERLESS FAMILIES

The lack of a father, in our society, presents a family with more social problems even than lack of a mother. Margaret Wynn has extensively surveyed the situation of fatherless families. She calculates that there are 540,000 fatherless families in Great Britain, with 785,000 dependent fatherless children, and that 7 per cent of all children are fatherless. In Germany 18 per cent of children are fatherless, the highest figure; Sweden, 6.6 per cent, having the lowest recorded incidence. In Britain, 48 per cent of the fatherless children are so, owing to separation of parents, 33 per cent owing to bereavement, 10 per cent owing to divorce, 9 per cent owing to illegitimacy. One fifth of fatherless families are in receipt of public assistance. Margaret Wynn draws attention to the uneven treatment of mothers of fatherless families, the separated, divorced or unmarried mother usually being worse treated than widows financially, and she recommends that a minimum allowance should be paid for all fatherless children regardless of the cause of fatherlessness.

Situation of Parents of Children immediately prior
to coming into care still in care at end of 1956
(Gray and Parr, Home Office Survey of 1776 cases)

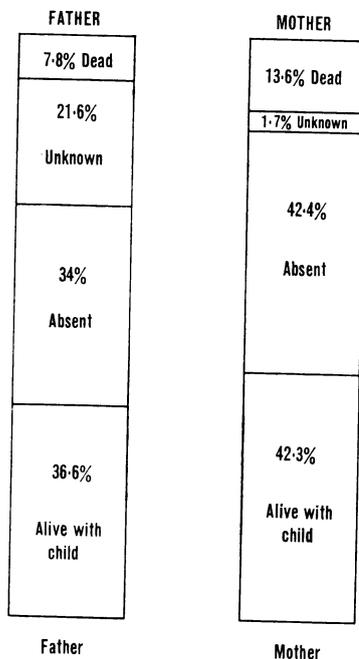


FIG. 11

A considerable number of fatherless children have to be received into the care of local authorities. Though conditions have much improved since the pre-Curtis committee days, these children are probably the most unfortunate members of the community. In 1963 there were 64,807 children in care. Gray and Parr, in a Home Office survey of 1776 children in local authority care in 1956, found that half the children were in care for 4 years or more, 80 per cent for more than a year, and that changes of placement are frequent, e.g. children 10 years in care had an average of 4.9 placements, that is to say a total change of environment every 2 years. The home situation prior to the children going into care is shown in Fig. 11. It is seen that about two thirds of these children were fatherless, and over a half motherless, for some reason. Over a third were illegitimate. Banks's observation that 11 per cent of young male offenders in prisons, Borstals, and detention centres have spent 5 or more years in institutions in childhood, is interesting in this connection. Obviously in spite of the efforts made by the local authorities to help the children who come into their care, everything possible should be done to try to keep these children in their own homes, and to prevent the disintegration of the families. But it is a difficult and unfortunately, a growing social problem.

GUILT AND ITS ABSENCE

The presence or absence of guilt is one of the most important observations a psychiatrist tends to make of a patient. An unfavourable view is frequently taken of those lacking guilt, who are often called psychopaths by psychiatrists or incorrigible rogues by judges. It will be clear that some children who are bereaved and lack a parent react by an excess of guilt and depression, while others react by a kind of affectless and affectionless delinquency. There are obviously constitutional differences between one child and another which might account for some of this difference in behaviour, but there is also evidence that the difference is also significantly in the handling and situation of the child after the bereavement. Many children have both anxiety and delinquent features, but sometimes the delinquency and anti-social attitude increases with usually a diminution of anxiety and guilt. It seems to work almost like a conversion mechanism. The adult psychopath usually shows no guilt, whatever damage he may have done to society, whereas of course guilt is at the centre of the psychoneurotic problem. Guilt may be defined on many different levels, but the simplest definition I would suggest is that it is the effect of the expectation of punishment. In Pavlovian terms it could be stated as the affective tone between a conditioned stimulus which has been associated with a noxious stimulus, and the noxious stimulus itself, which gives relief from sense of guilt; hence the desire for punishment on the part of anyone who feels guilt. One sees guilt

quite clearly in dogs and monkeys as well as in human beings provided they have been trained. In social animals like men and dogs, one has to remember that in life, the severest noxious stimulus is not an electric shock, as in a Pavlovian laboratory, but rejection, loss of love or exclusion from the group. This dependence on love relationship as a motive for social behaviour is most marked in social animals like men and dogs, and is almost absent in solitary animals like golden hamsters.

One can thus see how repeated rejection or abandonment to strangers can affect a child; at first anxiety, anger and guilt, then depression, then adjustment to the new circumstances with inhibition of the previous love relationship. The more adjustable child will more rapidly throw off the previous relationship and live only in the present. It may even be that, faced with the same rejection trauma, the less resilient child makes the psychoneurotic or depressive response, while the more resilient child makes the aggressive reaction and inhibits love relationships, which have proved painful. Terence Moore's observations on 167 children exposed to different kinds of maternal care, substitute care, day nursery, nursery school, and unstable changing care, suggests that constant presence of the mother favours the learning of self control and self restriction, conscience or super-ego, with an ability to feel guilt, while stable daily substitute care, starting after 3, tends to toughen the child, and reduce the tendency to show guilt or scruples. It may well be that repeated changes and rejections, say by the transfer of a child from one institution or foster home to another, can train the child to accept the rejection situation and inhibit love relationship, so that he becomes insensitive to individual affection and guilt, as in the affectionless psychopath described by Bowlby. Usually some sensitivity to group feeling persists so that there remains accessibility to group therapy. It may be that one severe loss, preceded and followed by reasonable stability, is more recoverable, though it may sensitize the child to subsequent loss situations, depression and guilt feelings, as the normal emotional and guilt faculties of the child remain essentially unimpaired. Clinical observations support the view that there is a difference between the stability of early training and emotional environment of the psychoneurotic and that of the psychopath.

CONCLUSION

Consideration of bereavement and parental loss and its effects both on the child and subsequently on the adult, approaches close to the fundamental question of psychiatry, which is, what circumstances are likely to produce what personality changes in what kind of children? It is the question which links child and adult psychiatry. We only know partially some of the effects of parental loss and far more research is needed on this subject. One can, however, say that it presents a severe threat to the mental health not only of

the individual child but also of the community. Bereavement is recoverable and remediable, but lack of a parent, especially fatherlessness, is not so easily remedied as it often depends on the extended family of the community. The cost of improving the care of these children would however be amply repaid by the saving in social and health services later. St. James said, "True religion is this, to visit the widow and the fatherless in their affliction".

Death, and the relief of bereavement, mourning and deprivation, are matters at the centre of most religions of the world, but the appropriate handling of these problems is also of fundamental importance for the improvement of mental health. It is not only true religion and human kindness, it is also good sense and sound economics.

REFERENCES

- ANTHONY, S. (1940) *The Child's Discovery of Death* (Kegan Paul).
- ARTHUR, B., and KEMME, M. (1964) Bereavement in Childhood, *J. Child. Psychol. and Psychiat.* **5**, 1, 37.
- BANKS, C. (1963) Interim Report on Research with Young Offenders, p. 14. R.M.P.A. circulation, July 1963.
- BARRY, H. (1936) *J. Abn. and Normal Psychol.* **30**, 431.
- BARRY, H. (1939) *Am. J. Orthopsychiat.* **9**, 355.
- BARRY, H., and LINDEMANN, E. (1960) *Psychosomat. Med.* **22**, 3, 166.
- BECK, A. T., SETHI, B., and TUTHILL, R. (1963) *Arch. Gen. Psychiat.* **9**, 3, 295.
- BECKETT, E., and FROHMAN, C. E. (1963) *Am. J. Psychiat.* **119**, 9, 835.
- BOWLBY, J. (1944) Fourty-Four Juvenile Thieves, *Int. J. Psychoanal.* **25**.
- BOWLBY, J. (1951) Maternal Care and Mental Health, W.H.O. 2. Geneva and H.M.S.O.
- BOWLBY, J. (1958) The Child's Tie to his Mother, *Int. J. Psychoanal.* **39**, 5, 1.
- BOWLBY, J. (1961) *Am. J. Psychiat.* **118**, 481.
- BROWN, F. (1961) Depression and Childhood Bereavement, *J. Ment. Sc.* **107**, 449, 754.
- BROWN, F. (1966) Childhood Bereavement and Subsequent Psychiatric Disorder, *Brit. J. Psychiat.* **112**, 1035.
- BROWN, F., EPPS, P., and MCGLASHAN, A. (1961) *The Remote and Immediate Effects of Orphanhood*. Proc. Third World Congress of Psychiat., Toronto Univ. Press, p. 1316.
- BROWN, F., and EPPS, P. (1966) Childhood Bereavement and Subsequent Crime and Delinquency, *Brit. J. Psychiat.* **112**, 1043.
- BURLINGHAM, D., and FREUD, A. (1944) *Infants without Families* (Allen and Unwin).
- BUNYAN, J. (1680) *The Life and Death of Mr Badman, Children in Care in England and Wales*, 1963. Home Office. H.M.S.O. 2240.
- Coffin Text 74, 2200 B.C., quoted by Clark R. T. *Myth and Symbol in Ancient Egypt*, Thames and Hudson, 1959.
- DENNEHY, C. (1966) Childhood Bereavement and Psychiatric Illnes, *Brit. J. Psychiat.* **112**, 1049.
- FREUD, S. (1917) *Mourning and Melancholia*, 1957. Ed. Hogarth Press, p. 243.
- FREUD, S. (1927) *The Ego and the Id*, London, Hogarth Press.
- FRIEDMANN, M., and TRAILL, P. (1964) Report to World Fed. of Mental Health (Berne Congress) U. K. Committee on Prevention of Damaging Stress in Children, Appendix 7.
- GLUECK, S. and E. *Unravelling Juvenile Delinquency*, p. 90.
- GRAY, P. G., and PARR, E. A. (1957) *Children in Care and Recruitment of Foster Parents*. Home Office, p. 249.

- GREGORY, I. Studies in Parental Deprivation in Psychiatric Patients, *Amer. J. Psych.* **115**, 1958.
- HOMER, 800 B. C. *Iliad*. 9, 406.
- JONES, E. (1963) *Raising your Child in a Fatherless Home*. Press of Glencoe, New York.
- MAPOTHER, E. (1926) *Brit. Med. J.* 872.
- MARRIS, P. (1958) *Widows and their Families*. London, Routledge and Kegan Paul.
- MCGLASHAN, A. (1963) *Bereavement in Children. A survey of 100 Cases*. Private Communication.
- MEAD, M. (1962) A Cultural Anthropologist's Approach to Maternal Deprivation. In *Deprivation of Maternal Care*. Geneva, W.H.O.
- MOORE, T. (1964) Children of Full Time and Part Time Mothers, *Int. J. Soc. Psychiat.* Special Congress Issue 2.
- PARKES, G. M. (1964) *Brit. J. Psychiat.* **110**, 465, 1981.
- POLLOCK, G. (1962) Childhood parent and sibling loss in Adult patients, *Arch. Gen. Psychiat.* **7**, 295.
- PRIESTLEY, J. B. (1926) *Life of George Meredith*.
- ROBERTSON, J. (1953) Some responses of Young Children to Loss of Maternal Care *Nursing Times*, April, 1953.
- SHOOR, M., and SPEED, M. (1964) *Delinquency as Manifestation of Mourning Process* **37**, 3, 540.
- SPITZ, R. (1945) *Hospitalism. An Enquiry into the Genesis of Psychiatric Conditions in Early Childhood*, Psychoanalytic study of the child, 1.
- SPITZ, R. (1946) *Anaclitic Depression*, Psychoanalytic Study of the Child, 2.
- TORRIE, A. and M. (1960-1964), Numerous publications, Widows Cruse Organisation, Richmond, Surrey.
- TOYNBEE, A. (1922) *Legacy of Greece* **291**. Oxford.
- WILSON, V. W. (1959) *Int. J. Soc. Psychiat.* **119**, 9, 835.
- WORDSWORTH, W. (1805) *The Prelude* **5**, 257.
- WYNN, M. (1964) *Fatherless Families* **134**. M. Joseph, London.

CHAPTER 8

The Genetics of Mental Deficiency

by J. T. R. BAVIN

INTRODUCTION

Mental deficiency or retardation is mainly an administrative concept and is closely related to social incompetence. Difficulty in the classification of individuals is naturally experienced in the borderland between normality and subnormality. In this area low intelligence as a causative factor in the social failure is of lesser importance than personality traits, themselves often the result of environmental influences such as unsatisfactory or deserting parents. Nevertheless, intelligence, as measured by tests, correlates highly with mental deficiency judged by social criteria.

A discussion of the genetics of mental deficiency must therefore commence with the basis of the inheritance of intelligence in the general population. It will then be seen that some high-grade defectives can be considered to be intellectually part of the normal population, while most low-grade defect results from pathological causes. In the latter case environmental accidents, such as infection of the meninges with tubercle bacilli, or a peculiarity of the genetic constitution, such as the presence of a particular abnormal gene as in phenylketonuria, may result in such profound effects on intelligence that they may be considered, for practical purposes, as single causative events. This is not to deny that their effects will be modified by other environmental and genetic influences, but implies that these will be, by comparison, of small importance.

It is necessary at this point to remind the reader of a few basic genetic facts and terms. The individual begins life when an ovum is fertilized by a sperm to form a *zygote*. This single cell contains forty-six *chromosomes* in its nucleus, and these thread-like structures bear the *genes*, which are the discrete elements transmitted from generation to generation and which control the metabolic processes which are necessary for development and continued existence. The forty-six chromosomes vary in size and shape but form twenty-three pairs. In twenty-two of these pairs, the *autosomes*, the

two members of each pair are similar in morphology, and contain the same number of genes arranged in the same sequence, so that any particular gene will have the same position, or *locus*, on the two homologous chromosomes of a pair. A given locus may be occupied by one of two or more alternative genes, called *alleles*, some of which may be common in the population, and others rare. The chromosomes of the remaining pair, the *sex chromosomes*, are dissimilar in shape and size in the male, the larger being called *X*, and the smaller *Y*. The female, however, has two *X*'s, which resemble each other in the same way as do the members of the autosomal pairs. A son receives his *Y* from his father and his *X* from his mother, while daughters receive an *X* from each parent.

The chromosomes and genes are composed of deoxyribonucleic acid (DNA) and protein. The DNA molecule consists of two long chains coiled together to form a double helix around a common axis. Each chain is formed of alternating sugar and phosphate groups. One of four nitrogenous bases is attached to each deoxyribose group, and the two chains are believed to be linked together by hydrogen bonds between the pairs of bases. The sequence of the base pairs seems to act as a coding system, supplying the genetic information necessary for the production of specific proteins, some of which act as enzymes. A *mutation* is believed to involve a change in this sequence, presumably by substitution of a base pair at a particular point. Normally genes are very stable and are transmitted from generation to generation, but on rare occasions a gene mutates, or changes its structure, and is then handed on in its new and equally stable state, with its new genetic properties.

During division of the zygote, and the subsequent divisions of the body cells which occur as development and growth proceed, the forty-six chromosomes reproduce themselves. It is thought that the DNA chains separate and that each attracts to itself the opposite and complementary units to form its partner chain, so that each chromosome is reduplicated. Each of the two resulting *diploid* sets of forty-six chromosomes passes into one of the daughter cells at the completion of these *mitotic* divisions. The diploid number of chromosomes is therefore maintained in each generation of somatic cells, complete with the same complement of genes possessed by the zygote from which they all originated.

Formation of the gametes involves a *reduction division*, or *meiosis*, during which the cell divides twice whilst the chromosomes reduplicate themselves only once. At the first part of this special type of division the homologous chromosomes pair at the equator of the cell, and the partners of each pair separate, so that each daughter cell contains a *haploid* set of twenty-three chromosomes. Fertilization results from the fusion of two gametes, each with a haploid set derived from one parent, to form a zygote in which the diploid number of chromosomes is restored. In this way the new individual receives half his chromosomes and genes from each parent.

These simple facts are basic to the understanding of the transmission of inherited traits and disorders. The underlying principles which govern the inheritance of disorders associated with mental retardation are the same as are involved in the transmission of any other character. The inheritance pattern of a particular observed trait depends on the number of genes involved, their relationship to each other, their position on the chromosomes, and the number of biochemical steps between the gene and the observed trait. If the character under consideration is remote from the action of any one particular gene, as is frequently true in mental deficiency, then its inheritance may be complicated and obscure, due to the action of other genes, and of environmental influences. If the immediate action of the gene can be observed, however, as by measuring enzyme activities, it can be seen that simple Mendelian genetics explain the transmission from one generation to another.

The Genetics of Intelligence

The distribution curve of intelligence test scores approximates closely to the Gaussian or "normal" shape (Pearson, 1914). Many measurements in humans, such as height, or the total ridge count of the finger prints, show this *continuous variation*. It cannot be explained by the action of single genes. It must depend on the additive effect of a multitude of factors, each of which may act independently of the others in a positive or negative sense. In the case of intelligence, in a community where educational and other social influences are reasonably uniform for the whole population, most of these factors are genetic but some are environmental.

The genetic basis of the observed quantitative variation in intelligence is therefore thought to be a large number of genes, each one having an effect which cannot be individually distinguished. Some of these genes increase, and some decrease, intelligence, which is thus the sum of their combined actions.

The methods used to study continuously varying characters are, of necessity, statistical. This work is complicated with regard to intelligence by reason of *assortative mating*, or the tendency for "like to marry like". It is common in genetics to assume random mating, but the latter would be invalid in this case, as it is well known that assortative mating produces a high interparental correlation for intelligence, probably of the order of 0.5.

A child receives half of his genes from one parent, and half from the other. Thus half of the parents' genes are shared with each child, and in addition sibs have half their genes in common. With random mating this would have the effect of making these relatives half alike with respect to measured intelligence, or any other continuously varying inherited trait. Assortative mating increases the likeness of relatives to one another.

If genes have additive effects some rules can be laid down about the quantitative characters they determine. Thus, if a father has an I.Q. of 60 we can

say, assuming for the moment that intelligence is determined by inheritance alone, that his genetic constitution depresses his I.Q. 40 points below the population mean of 100. His children receive half of their genes from him and the other half from the general population pool, if the mother's I.Q. is unspecified and random mating is assumed. This has the effect of making their I.Q.'s scatter around the mean of 80, i.e. half-way between the mean of the general population and the father's value. The resemblance between children and parents is 0.5, the same as the proportion of genes in common, such measures of resemblance being called *regressions*. It should be noted that there is a *regression towards the mean* of the general population.

It would appear, from the data available, that about 50–70 per cent of the variance of intelligence can be attributed to additive genes. The rest is probably due to environmental factors which similarly are multiple and individually of small effect.

Large surveys, covering the complete population of school age in given areas, have revealed that the distribution curve of intelligence test scores is actually slightly negatively skewed, the lower end of the I.Q. range containing more individuals than would be theoretically expected under a Gaussian curve (Duff and Thomson, 1923). This part of the curve, below I.Q. 70, is presumably swollen by the cases of mental retardation of pathological origin, both genetic and environmental.

Physiological Variants

No break is found in the distribution curve between those who might be considered defective and the rest of the population. If the usual administrative criteria of social failure are used to separate the defectives from a population, it is discovered that the intelligence test scores of the two groups overlap, although social failure correlates strongly with test scores. Above I.Q. 70 only a few people are so maladapted socially as to be considered defective, and here personality factors are operating. In the I.Q. range 69–50 an increasing proportion are defective by social evaluation, and below I.Q. 50 all will be so labelled. The observed number of people in the feeble-minded category (I.Q. 50–69) is only slightly above that expected on a normal distribution. By contrast, there are six times as many imbeciles (I.Q. 20–49), and ten thousand times as many idiots (I.Q. 0–19), as would be expected under a Gaussian curve.

Most of the feeble-minded group can therefore be considered to be part of the normal population, and this statistical conclusion is supported by the fact that few individuals in this group show any clinical signs of physical abnormality. A small proportion of imbeciles will also theoretically belong to this physiological group, but practically all idiots are pathological in origin, showing physical signs of disease and having structural abnormalities of the nervous system, as postmortem studies have demonstrated (Crome, 1960).

The determinants of low intelligence of the physiological type are, therefore, the same as for intelligence in general—a multitude of small quantitative effects, the sum of which happens to be low for this group of people. They will be balanced, of course, by the group of gifted variants at the upper end of the distribution curve.

The application of statistical techniques confirms the importance of the multifactorial element in the aetiology. For feeble-minded index patients the sib-sib correlation has been found to be about 0.5. With idiot or imbecile patients, on the other hand, although affected sibs tend to have the same degree of defect, unaffected sibs are sharply demarcated, being much more intelligent and thus giving a much lower sib-sib correlation. This is as expected for the action of single harmful genes, or environmental accidents.

Evidence is also obtained from studies of the parents and more distant relatives. Penrose (1938), in the Colchester Survey, found 12.1 per cent of the parents of feeble-minded hospital patients to be feeble-minded or imbecile. For the parents of imbeciles the figure was 6.5 per cent, and for idiot patients only 2.7 per cent of the parents could be considered defective. Corresponding to the lower intelligence of the parents, it was found that feeble-minded patients came from inferior socio-economic and home conditions.

Thus defectives of physiological type are distinguished by the lack of clinical and pathological signs of abnormality; the presence of relatives with similar defect or low normal intelligence; and a poor socio-cultural background.

It must be observed that not all feeble-minded defectives are of this type, a few showing definite physical abnormalities. Rarely, mongols and untreated phenylketonurics, for example, have intelligence in the feeble-minded range, and some of the sex chromosome anomalies produce mental defect which is often of mild degree. However, in aggregate these amount to a very small proportion of the large number of feeble-minded people.

Pathological Types

A small proportion of the feeble-minded, a large proportion of imbeciles, and practically all idiots, show signs of physical disease of congenital origin. Structural abnormalities of the brain have been shown by post-mortem examination to be present in the vast majority of low-grade defectives and it seems certain that the mental defect is a direct result of some pathological process. Statistical support is given by the fact that although other affected family members tend to have the same type of defect, they are sharply demarcated from the normal relatives, whose intelligence distribution is similar to that of the population at large.

In many of the types of pathological defect, single causes are known, or strongly suspected, to be operating. Environmental accidents, such as

maternal rubella, birth injuries, or lead poisoning, will not be dealt with here. The genetic causes of pathological mental defect may be classified as follows:

A: Specific harmful genes	B: Chromosome anomalies
1. Dominant 2. Recessive 3. Sex-linked	1. Autosomes 2. Sex Chromosomes

SPECIFIC HARMFUL GENES

Although it is a truism that the functions of a living organism are the result of interaction between genetic constitution and environment, the effect of the harmful genes producing mental defect is usually of such magnitude that little modification of their action will occur by reason of environmental differences normally encountered. This is to say that when such genes are present in an individual, abnormality will inevitably occur. Modification of these statements is needed on two counts. Firstly, a given gene acts, not only against environmental agencies as normally understood, but also in the context of the rest of the genetic constitution. Thus other genes present may cause exaggeration, or diminution, or complete suppression, of the harmful result. Secondly, artificial environmental deviations may be constructed with the express purpose of minimizing the harmful result. In such a direction, as exemplified by synthetic diets, lies the hope of effective treatment.

Characteristics of Dominant Inheritance

Dominance of a gene implies that it produces its effect whether it is present on one of a pair of chromosomes, or on both. For rare genes very few people will exist who are *homozygous*; that is, who carry a similar gene on both chromosomes of a pair. Most people showing the character will be *heterozygous*, carrying the normal gene on one chromosome and the rare allele at the same locus on the other chromosome of the pair. Providing manifestation of the gene is constant, each person showing the trait concerned will have a parent also affected, this being the person who transmitted the gene. However, such regular manifestation is rare, due to the trait being only indirectly the consequence of the action of the gene. It must be remembered that the gene is closely concerned with the presence and activity of a specific enzyme. If the activity of the enzyme can be directly measured, the inheritance follows classical Mendelian patterns. But we are usually forced, in the present state of knowledge, to rely on clinical observation of traits which are the end result of the effects of many genes and environmental

factors. Therefore, when a disorder such as mental defect or a severe congenital abnormality is investigated, it is found that the dominant pattern is often obscured by irregularity of manifestation.

When the condition under observation is a severe one, such as idiocy, fertility is greatly diminished for physical and social reasons. The parent clearly cannot be similarly affected. Although the gene is dominant to its normal allele, its effect on the observed character may have been greatly diminished by modifying genes or environmental factors, so that the parent either shows a minimal degree of the abnormality (*incomplete manifestation*) or total suppression of the disorder (*incomplete penetrance*). Another mechanism which can produce a sporadic case of a dominant disorder is a fresh mutation in a parental germ cell.

It is thus clear that dominant defects showing a classical pattern of inheritance with a long line of recognizably affected ancestors will be mild in their effects, or late in their onset, in relation to the reproductive period. In mental deficiency this pattern is not commonly seen, as the defect is usually severe and manifested early. Thus the usual picture of dominant inheritance in this field is one of great variability of manifestation, with mildly and severely affected members and skipped generations, or of sporadic cases due to mutations.

In the classical pattern of dominant inheritance one adds two further characteristics. Firstly, the affected persons should be sharply distinct, with regard to the trait, from normal members of the family. This, we believe, would be true of all dominant genes at the enzyme level, i.e. the members of the family could be sharply separated into two groups on the basis of enzyme activity. But manifestation of severe dominant diseases at the clinical level being very variable, such sharp segregation is impossible.

Secondly, affected persons, who will almost always be married to normals owing to the rarity of the gene, will have, on the average, affected and normal children in equal proportions. The normal offspring will give rise to only normal descendants as they do not carry the dominant gene. Caution is again necessary with the syndromes associated with mental defect, as some members who appear normal may have minor manifestations which are easily overlooked.

To summarize, the classical criteria of dominant inheritance in its simplest form, are:

- (1) Every affected person has an affected parent (unless a new mutation has occurred).
- (2) The affected and unaffected members of the same family are sharply distinct from each other in respect of the trait under consideration, except for severe diseases.
- (3) Matings between normals and affected persons will produce normal and affected children in approximately equal proportions.

- (4) The normal children of such matings, married to normals, will produce only normal descendants.

Epiloia, a typical rare dominant condition associated with mental deficiency, illustrates some of the above principles. In its most easily recognized form this disorder shows a triad of features—adenoma sebaceum, epilepsy, and mental defect. The striking thing about the disease, however, is its extreme variability of manifestation in different persons. In a family recently seen by the writer, the father suffered infrequent epileptic fits, one child had mental defect, epilepsy, and adenoma sebaceum with other skin lesions, while two sibs, one of whom had had fits in infancy, showed minor skin lesions only. It is easy to miss cases, particularly if no member of the family has the pathognomonic skin lesions combined with another feature.

It seems likely that all the manifestations of epiloia, mental and physical, are to be attributed to the action of a single dominant gene, irregularly expressed due to the action of modifying genes. Family studies have seldom revealed the disorder in more than three generations, and in about half the cases described no other family member was found to be affected. Assuming that these were cases of fresh mutation (although the assumption is hazardous with such a variable pattern of manifestation), an estimate of the mutation rate was made by Gunther and Penrose (1935). With an estimate of the frequency of dominant epiloia in England of 1 in 30,000, and the assumption of new mutations as the cause of half, they calculated a mutation rate of 1 in 120,000 in terms of genes, i.e. $1/2 \times 1/30,000 \times 1/2$. The last fraction is introduced because only one of the two genes at the epiloia locus is assumed to mutate, the gene being dominant. In terms of individuals the rate is 1 in 60,000.

This high mutation rate is not necessarily typical of all human dominant genes. Epiloia is a common enough condition to make measurement of incidence possible, and has a mutation rate high enough to be easily estimated. For most dominant conditions the mutation rates must be much lower, as the abnormalities are minor in their effect, particularly on fertility, and thus elimination is much slower. The rarity of these disorders can therefore only be due to low mutation rates. In epiloia the variability of manifestation and the high mutation rate compensate for the high elimination rate of genes in severely affected people.

Neurofibromatosis, dystrophia myotonica, several types of acrocephaly, and hypertelorism, are associated with mental retardation and are usually, but not necessarily always, inherited as dominant traits. In addition some other dominant conditions, such as chondrodystrophic dwarfism, Marfan's syndrome, aniridia, arhinencephaly, and hyperostosis frontalis interna, appear occasionally in the mentally defective. It is possible, however, that these are chance associations.

Characteristics of Recessive Inheritance

A recessive gene is so called because it produces no observable effect when accompanied by the normal allele at the same locus on the other member of the chromosome pair concerned. The expression of a recessive disorder requires that both chromosomes of the pair carry the same recessive gene. As each parent has contributed one chromosome of every pair in the offspring, the homozygous subject must have received one recessive gene from each parent. In the case of rare recessive diseases the parents are both heterozygous carriers, and are unaffected, as they possess the normal allele in addition to the recessive gene.

A recessive gene may be transmitted through many successive generations of normal-appearing heterozygotes, and not until one such carrier mates with another heterozygous carrier of the same recessive gene can the affected homozygote occur. Natural selection can thus act on only a small proportion of the genes, and if the heterozygous state confers a slight advantage in fertility, as it is already known to do in some cases, this excess production of the gene may itself balance the losses occurring during elimination of the rare infertile homozygotes. The mutation rates of recessive genes are thus difficult to estimate, because the *heterozygote advantage*, being slight, may not be easily observed, and yet may be much more important than new mutation in balancing losses through elimination.

Rare recessive disorders are usually more severe and more constant in manifestation than dominant ones. Families are frequently seen in which more than one sib is affected, and if a large series is studied it can be shown that the ratio of normal to affected sibs is 3 : 1. The distinction between normals and affected is usually clear. With rare disorders a raised incidence of parental *consanguinity* is observed. This is because blood relatives are much more likely to share a given rare recessive gene than are unrelated persons. For example, if the heterozygotes for a rare disorder are present in a population with a frequency of 1 in 100, then the chance that an unrelated marriage will consist of two such heterozygotes is $1/100 \times 1/100 = 1/10,000$, whereas for first cousins the figures are $1/100 \times 1/8 = 1/800$. The rarer the disorder the higher will be the frequency of consanguineous unions amongst the parents of affected children.

Recessive diseases causing mental handicap, usually of severe degree, are important despite the low frequencies involved, these being of the order of 1 in 50,000. This is because there is a large number of these disorders. Most people are heterozygous carriers of one or more such recessive genes but only in the event of mating occurring with a person carrying an identical gene does the possibility of affected offspring arise.

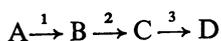
We may now summarize the characteristics of rare recessively determined disorders:

- (1) Affected persons have normal parents.

- (2) The affected and unaffected members of the same family are sharply segregated.
- (3) Families occur with more than one affected sib, and in a large series the ratio of normals to affected is 3 : 1.
- (4) Consanguinity is more common amongst the parents of affected persons than in the normal population.
- (5) In most cases matings between affected persons and normals produce only normal children.

The fifth criterion has hitherto been seldom observed in those recessive diseases causing severe mental defect, as this results usually in infertility, even when reproduction is physiologically possible. The development of effective treatment in several of these disorders has made such matings possible. The fourth criterion is the most important for the recognition of recessive inheritance, as no other causation will produce a raised parental consanguinity rate.

Phenylketonuria will now be described in some detail, as its investigation is well advanced, and it illustrates the course of progress which may be expected with similar inherited diseases. This disease may be taken as a classical example of an *inborn error of metabolism*, as inherited diseases are called after elucidation of the metabolic disturbances which form the link between the gene and the clinical condition. Garrod, at the turn of the century, developed a simple theory to explain the mechanism of action of these inherited disorders. He postulated that the essential abnormality is the congenital absence of the enzyme necessary for catalysis of a specific metabolic process. A particular metabolic step is therefore blocked, and this results in altered concentrations of metabolites in body fluids, with effects which are ultimately observed as the clinical state of the patient. Consider the metabolic pathway



where 1, 2, 3, are specific enzymes controlling the reactions $A \rightarrow B$, $B \rightarrow C$, $C \rightarrow D$, respectively. If enzyme 2 is absent or inactive, reaction $B \rightarrow C$ is blocked, and a number of consequences follow. Failure of production of metabolite C may occur if no other pathway to its formation is available, or, if such an alternative pathway exists, C may be produced at a slower rate. Similarly more remote end-products, such as D, may not be formed. The precursor of the blocked reaction, B, may accumulate in the blood and be excreted in abnormal quantity in the urine. It may, on the other hand, be conjugated and stored inside cells as in the storage diseases. The more remote precursors, such as A above, may also accumulate. The block may cause increased use of accessory pathways by the accumulating precursors, and this may itself lead to raised body levels of normally minor metabolites.

The effect of these disordered chemical processes depends on the importance of the reactions concerned in the total metabolic organization, and on the secondary effects produced by increased levels of particular metabolites. Thus disorders of great severity may result, such as gargoylism, or abnormalities as trivial as fructosuria, where the subject is usually unaware of any disorder, and his biochemical peculiarity may only be discovered when his urine is found to contain a reducing substance which is not glucose.

The idea that a gene controls the formation and activity of a specific enzyme, and through this enzyme an individual step of metabolism, has produced a revolution in genetics. It enables us to understand how the transmission of a mutant gene from both parents to a child may result in all the physical and mental disturbance seen in phenylketonuria.

Fölling (1934) first described this disease in ten mentally deficient patients who excreted phenylpyruvic acid in their urine. Further investigation has elucidated much of the genetic and biochemical picture. Mental defect is usually severe, with about 60 per cent of patients in the idiot range, about 30 per cent in the imbecile range, and the rest mainly feeble-minded. Probably less than 2 per cent have an I.Q. above 60, but a few untreated patients have been described with I.Q.'s in the range 70-100. Even these patients showed emotional disorders, hyperkinesis, and exaggerated reflexes. The biochemical findings were no less severe in these more intelligent patients, and no correlation has been found to exist between intelligence and the body levels of any of the metabolites studied. Environmental influences and the effect of modifying genes may account for the lack of correlation between the primary disturbance of body chemistry and intelligence. However, it is to be noted that the correlation studies have been performed on patients of all ages, and not in infancy alone, the latter being the period during which the permanent damage and intellectual defect is being established.

Jervis (1954) calculated the average incidence of phenylketonuria from surveys in twelve different countries to be 0.64 per cent of defectives in hospital. From this it appeared that in the general population about 4 per 100,000 would be the average world-wide incidence, although this estimate is heavily weighted by surveys from Northern European populations, in whom the disease is relatively common. Local surveys, such as that of Munro (1947) in England, confirm this result. Carter and Woolf (1961) produced evidence suggesting that the gene is more common in Ireland and West Scotland than in England. It appears to be uncommon in Negroes and Jews.

The familial incidence, almost entirely confined to sibs; the raised parental consanguinity rate (between 5 and 14 per cent in different series); the sharp segregation between affected and unaffected members of families; and the close approximation to a 3 : 1 ratio of normal to affected sibs, makes recessive inheritance certain in this disorder. The presumed heterozygotes,

the parents, are not known to be physically or mentally distinguishable from the normal population, although there has been some evidence to suggest that they are prone to develop a depressive psychosis at about the age of 50 years.

The primary biochemical lesion is a failure to convert the essential aminoacid L-phenylalanine to tyrosine in the liver. Both tyrosine and phenylalanine are ingested in the diet, and phenylalanine is normally irreversibly hydroxylated to tyrosine. The block at this point results in accumulation of phenylalanine in blood and cerebrospinal fluid, and excretion in abnormal amounts in urine. Subsidiary pathways, which phenylalanine may normally take to a small extent, are then utilized to an increased degree.

The inactivity, or absence, of the liver enzyme phenylalanine hydroxylase has been proved by direct assay on autopsy material and biopsy specimens. The enzyme occurs only in the liver, and becomes active after birth in normals. The affected infant is clinically normal at birth, and the disorder becomes manifest several weeks later by failure to thrive, as the blood phenylalanine level rises. The diagnosis is made by testing the freshly wet nappy with an impregnated paper strip ("Phenistix"), a positive reaction being indicated by a green colour. The test should be done on all babies about 2 weeks after birth and repeated 4 weeks later. Positive reactions should be confirmed by the ferric chloride test: several drops of 5 per cent FeCl_3 are added to 5 ml of fresh urine, a positive result being indicated by the appearance within a few minutes of an olive-green colour. Urinary chromatography and estimation of the plasma phenylalanine level make the diagnosis certain.

The detection of the heterozygous carriers of the phenylketonuria gene is now possible. Although they appear to be normal, it can be shown that their metabolism is disturbed in a similar fashion to that of the homozygotes, but to a minimal degree. Hsia *et al.* (1956) demonstrated that when parents of phenylketonurics were given a standard loading dose of L-phenylalanine, the plasma level of this substance was about double that of normal controls at 1-, 2-, and 4-hourly intervals afterwards. Further it has been found with more refined techniques that heterozygotes have a significantly higher mean fasting level of plasma phenylalanine than controls. These tests thus reveal that the carriers have a reduced capacity for metabolizing phenylalanine. Confirmation that this is due to deficient phenylalanine hydroxylase activity is given by the finding that the carriers have a reduced rise of plasma tyrosine after ingestion of phenylalanine, compared with controls.

The natural result of elucidation of the mechanism of the disorder was an attempt at therapy by means of limitation of phenylalanine intake. Therapy must be commenced as soon after birth as possible, as permanent damage to the brain occurs during infancy. Treatment consists of the replacement of dietary proteins with a specially prepared casein hydrolysate supplying pure aminoacids, plus carefully controlled amounts of phenylalanine,

and a high carbohydrate intake. Expert management is needed and accurate biochemical control. The results in the most successful cases consist of reversal of the biochemical disturbances; prompt disappearance of eczema and seizures; improvement of behaviour with reduction of restlessness and irritability; diminution of tremor, hyperkinesia and muscular hypertonicity, and return of reflexes to normal. The E.E.G. disturbances disappear and the intelligence is greatly raised above the level expected in the untreated. Over half the patients treated with the early diets in infancy appear to have reached an I.Q. above 60. This compares with the 2 per cent of untreated patients expected in this group. With further experience of treatment this result may be bettered. At present it is not known at what age the treatment could be safely stopped. Some improvement in intelligence has been achieved with patients whose treatment was begun as late as 2 years of age, but in the adult, behaviour alone is modified.

The number of recessively transmitted disorders associated with mental retardation is growing steadily. The list includes several types of cretinism, one variety of fructosuria, Hartnup disease, maple syrup urine disease, argininosuccinicaciduria, cystathioninuria, hyperglycinaemia, citrullinuria, galactosaemia, homocystinuria, Wilson's disease, amaurotic idiocy, Niemann-Pick disease, Gaucher's disease, one form of gargoylism, the Crigler-Najjar syndrome, true microcephaly, Friederich's ataxia, some cases of cerebral diplegia, and one type of methaemoglobinaemia. In several other clinical syndromes there is evidence suggesting recessive transmission. The Laurence-Moon-Bardet-Biedl syndrome, pseudohypoparathyroidism and pseudopseudohypoparathyroidism, come into this category.

Characteristics of Sex-linked Inheritance

So far we have considered genes carried on the twenty-two autosomes. The remaining pair of chromosomes, the sex chromosomes, carry genes which affect development and metabolism in the same way as autosomal genes. The fact that they are carried on the sex chromosomes, however, means that they may be expressed in different ways in the two sexes.

The male has only one X chromosome, and the genes carried on it have no corresponding partner on the Y chromosome. Each locus and gene is therefore unpaired, and if the male carries an X-borne gene which is abnormal he will manifest the associated character. If he carries the normal gene instead, he must be normal. Dominance or recessiveness does not arise, therefore, in the male. He cannot be considered to be either homozygous or heterozygous with respect to such a gene, and the term *hemizygous* is used.

In the female, however, the two X chromosomes form a similar pair, with paired gene loci. The two genes carried at a given locus may be both normal, both abnormal, or one of each type. As with autosomal genes, therefore, a given abnormal gene may be recessive or dominant to its normal

allele. Most important human sex-linked genes are recessive in the female. It can be seen, therefore, that in typical sex-linked transmission of a rare trait, the female will carry an abnormal mutant gene on one X chromosome, and this being recessive will not be manifest, so that she will be physically normal. Only if she were homozygous for the abnormal gene would she show the trait, and this is extremely unlikely when the gene is rare.

In the case of her offspring, on the average half will receive the X carrying the normal gene and half will receive the other X carrying the abnormal allele. The result will depend on the sex of the children. Sons have an XY constitution, so that those with the normal X-borne gene will be normal, whilst the other half of the male offspring, who have an abnormal X-borne gene, will be abnormal. In the case of the daughters, who will all receive an X chromosome from the father carrying only the normal allele, half will have been given normal genes by both parents, and will therefore be homozygous for the normal gene, whilst the other half, having an abnormal gene transmitted from the mother, will be heterozygous carriers of the gene, and unaffected.

It has been assumed above that both parents are unaffected, as this is the usual case with rare, recessive, sex-linked conditions. The only other type of mating which needs to be considered is that of an affected male with a normal female. The latter is most unlikely to be a carrier in the case of rare disorders. In this mating the female contributes an X chromosome bearing the normal gene to all offspring. The affected male contributes a Y chromosome to all sons, who are therefore unaffected and non-carriers. The daughters, however, will all receive the father's X chromosome bearing the abnormal gene, and will therefore all be physically normal heterozygous carriers. This mating therefore produces no affected offspring.

The only other matings which would produce affected children are those containing affected homozygous females, who are excessively rare; and the combination of a heterozygous female with an affected male. The latter mating will also be extremely rare if the gene frequency is low.

It is therefore clear that the vast majority of affected persons will be males whose parents are normal. The only likely affected close relatives will be the maternal uncles, and the sons of the maternal aunts. In this case the maternal grandmother is the common source of the gene. In families where a known sex-linked condition has occurred for the first time the gene may have arisen by a fresh mutation in the maternal gonad. The mutation may have arisen further back, and been transmitted by chance only to females, but clearly the further back in the pedigree one goes, the more likely it is that other males will have received the gene.

For rare sex-linked genes producing disorder severe enough to reduce fertility markedly in affected males, the forces of selection are strong, and most genes will be eliminated in a few generations. About one third of the cases may be expected to have arisen by fresh mutation. Thus the mutation

rates will be relatively high, but intermediate between those of severe dominant and recessive defects. With autosomal recessive genes selection can only eliminate a small proportion of the genes—those in the affected homozygotes—and here mutation rates are relatively low. With all types of gene of course, equilibrium is established between elimination owing to early death and infertility, and replacement by fresh mutation.

Distinction must be made between sex linkage and *sex limitation*. A gene situated on an autosome may be expressed differently in the two sexes. Commonly sex limitation is partial, when the gene is expressed more severely, or more frequently, in one sex than in the other. Complete sex limitation, with expression in one sex only, is rare, except in relation to the sexual organs themselves.

Many conditions show a different frequency in the two sexes, despite a clearly dominant or recessive autosomal pattern. Some dominant diseases with onset in middle life, such as Huntington's chorea, have been noted to have an earlier onset in females. It has been pointed out that for modifying genes to produce selective advantage in dominant disorders by delaying onset, they must operate within the reproductive period. The latter being longer in males, it is likely, as Penrose (1942) has pointed out, that genes modifying for later onset in males would have been selected.

Recessive diseases, however, are well known to produce more severe effects in males. Male cases of low-grade mental defect, for example, outnumber the female. It is possible that selective pressures operate through the greater fertility of females over males at comparable levels of severity, genes producing improvement in the female being at an advantage compared with those doing the same in the male.

It remains to emphasize that the crucial criterion for the establishment of sex-linked transmission, as opposed to complete sex limitation, is that affected males cannot transmit the condition to, or through, their sons, but only through their daughters. Where the condition is severe enough to prevent procreation, as it often is with mental defect, sex linkage may be impossible to prove.

To summarize, the criteria for recognition of rare sex-linked recessive characters are:

- (1) Males alone are affected (with very rare exceptions) and are sharply distinct from normal males.
- (2) Both parents are normal in the majority of affected families, inheritance being from the mother alone, who is a heterozygous carrier.
- (3) On the average, half the sons of heterozygous mothers are affected, and half the daughters are carriers and are normal (unless the gene is incompletely recessive).
- (4) Collateral cases may occur, these usually being maternal uncles, and sons of maternal aunts.

- (5) An affected father cannot transmit the trait to, or through, his sons, but only through his unaffected daughters.

A few diseases causing mental deficiency have been recognized to be transmitted as sex-linked recessives, and hydrocephaly may be used as a brief illustration. This is another disorder associated with mental deficiency which has many different causes, both genetic and environmental. Evidence has been forthcoming that one type of congenital hydrocephaly, with stenosis of the aqueduct of Sylvius, is due to a sex-linked gene, and it has been estimated that it is responsible for about 5 per cent of male hydrocephalics (Edwards, 1961). In the first family reported, the normal parents produced two normal daughters, and three affected sons who died at birth or soon after. The mother's four brothers had suffered a similar fate, but her three sisters were normal. Studies of other families have confirmed this pattern.

Sex-linked inheritance is also proved, or highly likely, in one form of gargoylism, nephrogenic diabetes insipidus, the oculocerebrorenal syndrome of Lowe, Terry and MacLachlan, pseudohypertrophic muscular dystrophy, one form of anhidrotic ectodermal dysplasia, and probably Pelizaeus-Merzbacher disease and several other rare syndromes.

CHROMOSOME ABERRATIONS

Introduction

Recent improvements in technique have enabled detailed studies of human chromosomes to be carried out. Small samples of skin, blood leucocytes, bone marrow or other tissues are cultured, and mitoses arrested by the addition of colchicine. Cells are spread on slides or squashed, providing preparations in which each chromosome is seen as a cruciate structure formed by the two daughter chromatids separating but still joined at the *centromere*.

To analyse the chromosome patterns, suitable well-spread cells are photographed, and the individual chromosome pictures cut out. They are then matched in pairs and arranged in order, from the largest (No. 1) to the smallest (No. 22), with the sex chromosomes labelled separately as X and Y. As well as size, the position of the centromere is used as an important distinguishing feature. It may be (i) central, when the chromosome is called *metacentric*; (ii) near the centre, or *submetacentric*; (iii) near the end of the chromosome, in which case it is called *acrocentric*. Chromosomes 13, 14, 15, 21 and 22 have attached to the end of their short arms small bodies called *satellites*. The display produced by arranging the paired chromosomes in numerical order after analysis is called a *karyotype*.

In 1956 Tjio and Levan discovered that the normal human chromosome complement is forty-six, consisting of twenty-two pairs of autosomes, plus

the sex chromosomes, XX in the female, and XY in the male. A few years after this it was established that abnormalities of number and morphology are not rare, and that many of these aberrations are associated with congenital malformations and mental defect.

The commonest type of aberration is that of number. The formation of gametes in the parental gonads entails a reduction division, during which the chromosomes pair at the equator of the cell, and then separate to opposite poles, so that cleavage of the cell results in two daughter cells each containing twenty-three chromosomes—the haploid set. If two homologous chromosomes fail to pair at the equator, or having paired fail to separate, the haploid number may be disturbed. The two homologous chromosomes may enter the same daughter cell, which will then have an additional chromosome, whilst the other daughter cell will be one short. Fertilization of the resulting gametes with a normal gamete, bearing twenty-three chromosomes, will result in a zygote with either forty-seven or forty-five chromosomes. This process of *primary non-disjunction*, as it is called, may occur in relation to both sex chromosomes and autosomes.

Sex Chromosome Aberrations

Loss of one sex chromosome could lead theoretically to individuals of XO or YO constitution (where O represents the missing chromosome). So far only patients with cells of the XO type have been found and it is assumed that the YO zygote is non-viable. The XO constitution is found in patients suffering from Turner's syndrome. This features gonadal dysgenesis in patients of female appearance with underdeveloped external and internal genital organs. The ovaries may be absent or represented by fibrous streaks. Stunting, webbing of the neck, cubitus valgus, coarctation of the aorta, and other abnormalities may be present. Some, but not all, of the patients are mentally retarded. Turner's syndrome does occur, however, in patients who have a normal XX sex chromosome complement.

Where meiotic non-disjunction results in the addition of an X chromosome, zygotes with XXY or XXX constitution may be produced. The former type is found in patients suffering from Klinefelter's syndrome. This disorder afflicts males who appear normal until puberty, when secondary sex characteristics fail to appear. The patients are usually tall and slender, and the testes are always small and atrophied, with hyalinization of the seminiferous tubules, and azoospermia. Facial and axillary hair is poorly developed, and the voice does not deepen. Gynaecomastia is common, and in the adult urinary excretion of follicle-stimulating hormone is high. The condition is definitely associated with mental deficiency, which may vary from idiocy to feeble-mindedness, but is usually of mild degree.

Most patients suffering from Klinefelter's syndrome are, however, of normal intelligence, and are often unaware of their disorder until they attend

an infertility clinic. It should also be noted that the syndrome does occur in males with a normal XY chromosome constitution. The incidence of XXY Klinefelter's syndrome appears to be about one in 400 of male births and compares with one in 100 found amongst male patients in mental deficiency hospitals.

The XXX chromosome karyotype is found in females who may differ little from normality. Some have underdeveloped breasts and external genitalia, and menstruation may be absent or infrequent. In many, however, menstruation has been normal, and several have produced normal children. Mental defect is commonly associated in mild degree, but cases of greater severity occur, in whom epilepsy and increased muscle tone may be seen. Psychotic and antisocial behaviour has also been noted.

More complex variants of the above aberrant chromosome constitutions occur. Some patients with Klinefelter's syndrome have XXXY, or even XXXXY complements. Another type has been described with XXYY constitution. There is no clinical distinction between these types, and those patients with four X's are not necessarily more defective than those with two. Mentally defective females with an XXXX karyotype have been described, and were physically normal. A few women have been reported with chromosome complements interpreted as normal apart from the *deletion* of a segment of one X. Another important aberration of chromosomes which has been observed to involve one X is that of *isochromosome* formation. Here division of the centromere at meiosis has occurred transversely instead of longitudinally. The two daughter chromosomes which result are unequal, one consisting of both short arms, and the other both long arms, of the parent chromosome. Isochromosomes therefore are symmetrical about the centromere. The females with a normal X and a deleted X, and those with a normal X and an isochromosome X, have clinically resembled Turner's syndrome.

Many patients have now been discovered who possess more than one type of chromosome constitution. This is the phenomenon of *mosaicism*. Some cases of Turner's, Klinefelter's, and the XXX syndrome, have been found to have a proportion of cells with a normal chromosome complement. They were described, therefore, as having XO/XX, XXY/XX, and XXX/XX constitutions respectively. Other forms of mosaicism reported include XO/XY, XO/XYY, and XXXY/XXXXY. A triple mosaic has also been seen, of type XO/XXX/XX. In some of these at least, *somatic non-disjunction* would explain the facts. To take the triple mosaic as an example, a possible explanation is that an XX zygote produced an aberrant mitotic division at an early stage of development. Non-disjunction would result in three X's passing to one daughter cell, and only one X to the other daughter cell. A parallel cell line derived from the original zygote would maintain the XX lineage. From then on the three separate cell lines would continue to reproduce themselves.

Mosaicism is of great practical importance, because it makes proof of normality much more difficult. Clearly the demonstration of a normal chromosome complement in one tissue, such as blood, or in one biopsy specimen, such as a small piece of skin, does not exclude abnormality elsewhere. Mosaicism is of particular significance when it affects the gonads. If the gonads contain cells of unbalanced chromosome complement, *secondary non-disjunction* will inevitably occur in these cells, and the patient, who might appear normal and have a normal complement in other body tissues, will be liable to produce disordered offspring. For example, gonadal cells with an XXX complement would produce at meiosis daughter cells with XX, and X. The resulting unbalanced gametes with XX would produce on fertilization either XXX or XXY individuals. However, the unbalanced gametes might be at a selective disadvantage, in which case fewer than the expected 50 per cent of offspring would be disordered.

Before leaving the subject of sex chromosome aberrations, reviewed by Brown *et al.* (1964), mention must be made of another aid to diagnosis of these disorders. It was discovered by Barr and Bertram in 1949 that the nuclei of cells in the resting stage, i.e. when the nuclei are not actively dividing, contain a dark-staining body about 1μ in diameter, closely applied to the inner surface of the nuclear membrane. This *chromatin body* can be seen in many tissues, and is present in 35–75 per cent of cells in normal females, but is absent from the cells of the normal male. Preparations can easily be made from desquamated cells scraped from the inside of the cheek, these being known as *buccal smears*.

From many observations it has been deduced that the presence of the chromatin (or Barr) body depends on the number of X chromosomes in the cell. Normal males with one X have no chromatin bodies; normal females with two X's have one such body; XXX females or XXXY Klinefelter males have two chromatin bodies in a proportion of cells, and so on. In fact the maximum number of chromatin bodies found in a person's cells corresponds with the number of X chromosomes minus one. An hypothesis has been advanced by Lyon that only one X chromosome remains active in a cell, and that the inactive X's form the Barr bodies (Leading Article, *Brit. M. J.* 1963).

The buccal smear technique has been of great use in interpreting abnormal karyotypes, because it is not easy, by measurement alone, to differentiate the X chromosome from those of group 6–12, and from No. 6 in particular. In addition it is a useful screening test, enabling sex chromosome abnormalities to be picked out when no physical signs are apparent, as in infancy. Using this method in surveys it has been found that the incidence of chromatin-positive Klinefelter's syndrome among newborn males is about one in 400; that chromatin-negative Turner's syndrome has an incidence of about one in 3000 female infants; and that the triple-X syndrome occurs with a frequency of about one in 1000 females at birth.

Autosomal Aberrations

Just as with sex chromosomes, the most frequent aberration of the autosomes is the addition of one to the normal complement. The most commonly affected autosome is No. 21, and triplication, or *trisomy*, of this chromosome is associated with Down's syndrome, or mongolism.

About 10 per cent of patients in mental deficiency hospitals suffer from Down's syndrome, although this proportion is probably dropping as better community services enable more of these relatively untroublesome patients to remain at home. Mongols seldom have an I.Q. above 50, and many of those in hospital are of much lower intelligence. The majority are capable of employment at simple tasks in sheltered conditions. The incidence of the condition at birth is in the region of one in 700. The prevalence in successive age groups drops owing to the relatively high mortality rate, particularly during the first year of life. The disorder occurs in all population groups which have been studied, but seems to be most frequent in Europeans.

The detailed configurations of the minute dermal ridge patterns on palms and soles (*dermatoglyphics*) are of great interest. On the mongol palm the main lines run more transversely compared with the normal hand. Near the centre of the palm is frequently seen a point from which the ridges diverge in three directions—the *axial triradius* (other triradii are present on the distal part of the palm both in normals and mongols). This triradius is infrequently present in normals. Thenar patterns (as opposed to parallel-running open fields) are rare, whilst hypothenar patterns are common, compared with normals. Typically the finger prints show ulnar loops (loops which are open on the ulnar side of the finger) although radial loops occur on digits 4 and 5. On the hallucal area of the sole the normal whorl is usually replaced in mongols by an open-field pattern.

Biochemical and pathological investigations have revealed minor abnormalities but no fundamental disorder. The brain exhibits simplified convolitional patterns, a relative diminution in the size of the cerebellum and brain stem, and some reduction of the number of ganglion cells in the third cortical layer. Changes in endocrine glands have been described but are inconstant. The body levels of most metabolites studied have been within normal limits.

In 1959 Lejeune, Gautier and Turpin discovered that patients suffering from Down's syndrome have forty-seven chromosomes, the extra one being a small acrocentric, No. 21. It is presumed, as with the sex chromosomes, that this trisomy occurs as a result of primary non-disjunction during gametogenesis. Again, theoretically one would expect the non-disjunction to produce equal numbers of gametes with an extra 21, or an absent 21. Fertilization with a normal gamete containing a single chromosome 21 in its haploid set would produce zygotes having three 21's, or only one 21, respectively. As there is no evidence that individuals occur with a missing

No. 21, it would appear that this *monosomic* condition, with its severe loss of genetic material, is lethal, and the zygotes fail to develop.

Rising maternal age, paternal age, and birth rank all appear to be associated with an increasing incidence of Down's syndrome. If appropriate statistical techniques are used, however, it can be shown that the true correlation is with the first of these factors (Penrose, 1933). The apparent association with paternal age and birth rank is due to their own correlation with maternal age. The mean age of mothers at the birth of their children in the general (British) population is 28 years, compared with a mean of 35 years for the mothers of mongols. Below a maternal age of 30 years the incidence of Down's syndrome is about 1 in 2000; it rises to about 1 in 350 for mothers aged 35-39, and even more steeply thereafter to about 1 in 30 by age 50.

If a distribution curve is drawn of numbers of mongols born, against maternal age as abscissa, a bimodal tendency is revealed, with modes at about 28 years and 43 years. This suggests that there may be two groups of mongols, one in which the distribution is similar to that of the normal population, and the other in which the maternal age effect is marked.

Soon after it was established that the standard karyotype in mongolism is that of 21-trisomy, a number of variants were noted. In one important group only 46 chromosomes, the normal number, was found. Analysis revealed that a pair of 21's was present with a single 15, and a large unusual chromosome which was interpreted as being the missing 15 with the expected extra 21 fused onto it. It is believed that this results from breakage near the centromeres of a 15 and a 21 during meiosis, with subsequent exchange of segments. This produces a large chromosome, the 15:21, which contains almost all the chromatin material of both, and a small centric fragment formed by the short arms of both. The latter seems usually to disappear from the cells after a few divisions. This exchange process is called *translocation*.

In effect the mongol who carries in all cells a pair of 21's, a single 15 and a translocated 15:21, has practically all the genetic material of a normal chromosome complement plus that of an extra 21. This is to say that in effect 21-trisomy is still present in disguised form. The remarkable feature accompanying this finding in most families is that the mother also carries the 15:21 translocation, with a single 15 and a single 21. This means she has 45 chromosomes, but practically all the material of a normal 46 chromosome karyotype. These mothers are clinically normal but may produce unbalanced gametes owing to the tendency for the translocation to interfere with pairing during meiosis. Considering only chromosomes 15 and 21, it appears that the likely arrangements which may arise in the gametes from such a mother are: (i) a 15 and a 21; (ii) a translocated 15:21; (iii) a 15:21 and the other 21; and (iv) a single 15. Both (i) and (ii) are balanced gametes which produce normal individuals when fertilized with another normal gamete, although in the case of (ii) the translocation is passed on. The arrangement in (iii) will produce a mongol when fertilization adds another 15 and 21

to give an effective 21-trisomic complement. No people have been described with 21-monosomy, which would result from fertilization of type (iv), and this is probably lethal.

It is thus seen that normal-appearing people may carry a balanced translocation and pass this on through several generations without disorder. However, the chance of producing a mongol is definitely increased for female 15:21 translocation carriers, but not males. The latter fact may be due to selective disadvantage operating against sperms carrying the translocation. Maternal age will not be operating as an aetiological factor, as the tendency to produce mongols carrying the translocation will be present at all ages. More than one case of Down's syndrome may occur in the same family, or in collateral branches of the mother's family.

Some families have been described in which translocation involves Nos. 21 and 22 chromosomes. Here the father is often involved, and although normal physically has a chromosome complement of 45, with a normal unpaired 21 and 22, and an extra chromosome which is interpreted as being the missing 21 and 22 fused together, with loss of the small centric fragment (which has been seen in a few cases). Again pairing during gametogenesis is disturbed, and a tendency to produce mongols carrying the translocation results. The latter have 46 chromosomes, the relevant part of the karyotype consisting of a normal 22, a pair of normal 21's and a translocated 21:22, giving effective 21-trisomy. In the familial cases reported, inheritance has been through the father, and raised *paternal* age is possibly an aetiological factor in this group. This surprising finding does not conflict with the insignificant effect of paternal age in large unselected samples as this cytological variant of Down's syndrome probably represents only 1 per cent of all mongols.

A fourth small group of mongols has been shown to have a karyotype consisting of standard 21-trisomy with an XXY sex chromosome complement, making 48 chromosomes in all. Features of Klinefelter's syndrome were present in addition to those of Down's syndrome. In another family different members were found to have mongolism, leukaemia, or XXXXY Klinefelter's syndrome. It appears statistically unlikely that these are chance associations, and there is a possibility that one of the parents carries a gene predisposing to non-disjunction during gametogenesis.

Mongols are rarely able to procreate, but a small number of female mongols have produced children. Approximately equal numbers of mongol and non-mongol offspring resulted from the secondary non-disjunction consequent upon the mother's 21-trisomy. At the reduction division the three 21's would be distributed to daughter cells as a pair in one cell and a single 21 in the other. Fertilization with a normal sperm would produce a mongol in the first case and a normal person in the latter.

Mosaicism is also found in mongols and may result in patients with relatively high intelligence who are otherwise typical. It may also account for

the hitherto puzzling phenomenon of the "partial" mongol, who shows only a few clinical features of the syndrome and therefore causes diagnostic difficulty. It has been shown that normal relatives of mongols, particularly the mothers, exhibit *microsymptoms*, such as dermatoglyphic features, and there is a possibility that these may be associated with mosaicism of minor degree. Particularly important would be gonadal mosaicism, as 21-trisomy or the translocation karyotypes mentioned above would, if present in the gonads of otherwise normal parents greatly increase the chances of mongol progeny. Finally, it is theoretically possible that mosaic mongols could arise as a result of a normal zygote suffering a mitotic non-disjunction during an early cleavage stage, producing two viable lines of cells—the original normal one, and the 21-trisomic offshoot (the 21-monosomic derivative perhaps being non-viable).

To summarize the multiple origins of mongolism the following is taken, with the kind permission of the author and publisher, from Penrose (1963):

"... there is a large variety of circumstances, each of which can lead to mongolism as the end result. In one class (A) we can include all those cases in which maternal age is not a significant factor. In all of them there is some degree of familial tendency. They amount to about 25 per cent of the total number. The group can be further subdivided and each division separately considered.

- A (i) The mother herself is a mongol. In this exceedingly rare class, the cause of mongolism in the child is inevitable or secondary non-disjunction leading to standard trisomy.
- A (ii) A parent, usually the mother, carries a fusion of the type 15 : 21 in some or all of her cells. This group may comprise nearly 2 per cent of all mongols.
- A (iii) A parent, usually the father, carries fusion of the type 21 : 22 in some or all of his cells. This group may comprise nearly 1 per cent of all mongols.
- A (iv) The mother or possibly the father is a gonadal mosaic e.g. type (i), (ii) or (iii). If this is so more than one sib may be affected and some characteristic microsymptoms may occur in the parent.
- A (v) The mother or father may carry a gene which tends to produce non-disjunction. In such circumstances more than one type of trisomy may occur in the offspring.
- A (vi) Miscellaneous, as yet unidentified, circumstances such as genes producing mitotic non-disjunction in the somatic cells of the person who carries them.

In class B, which comprises three-quarters of all mongols, a process very closely related to changes concomitant with ageing of the mother causes non-disjunction and consequent trisomy of No. 21."

Two other recognizable syndromes have been found to be associated with trisomy of the autosomes. The syndrome of congenital bilateral harelip, cleft palate, microphthalmos or colobomas, occasional polydactyly, cardiac lesions, "rockerbottom" feet, abnormal flexion of fingers, apparent deafness, malformed ears, and breath-holding spells or seizures, occurs with a frequency of about 1 in 3000. Few patients survive early infancy, and all are apparently mentally retarded. The palmar dermatoglyphics characteristically show an axial triradius at a point even more distal than in Down's syndrome, and thenar patterns are common. The incidence of the condition increases with maternal age. The karyotype consists of 47 chromosomes, with trisomy of a member of the 13 to 15 group, possibly No. 13 (Smith *et al.*, 1963). Some cases may occur as a result of reciprocal translocation between two chromosomes of the 13 to 15 group in one of the parents, comparable to the process described above in some mongols. Here, as in mongolism, the chromosomes involved are satellited.

Another syndrome involving severe mental defect presents congenital abnormalities which include moderate hypertonicity, low-set malformed ears, a small mandible, dorsiflexion of big toes, malformation of chest and heart, syndactyly of the toes and "rocker-bottom" fee. There is flexion of the fingers with characteristically the index finger overlying the third (Smith *et al.*, 1962). The palmar dermatoglyphics are normal, but the finger-tips show a predominance of simple arch patterns, and the distal finger flexion creases are absent. Most cases show simple trisomy of a chromosome believed to be No. 17 or 18, but a few cases have been complicated by the addition of X-trisomy or 21-trisomy. Maternal age is significantly increased.

Other chromosome abnormalities have been described in isolated cases, and here it is not certain whether the chromosome aberration is incidental or involved in causation of the mental defect. In one case an acrocentric was greatly lengthened by the addition of an extra segment (*duplication*), while in another case a segment was found to be missing from a chromosome (*deletion*). Enlarged satellites have been reported on some chromosomes in normal persons; in the normal parents of mongols and of anencephalics; and in two cases of Marfan's syndrome. On four occasions *triploidy*, or triplication of the complete chromosome set giving a complement of 69, has been seen in cultures from human cells. One patient, a severely retarded boy with micrognathia and syndactyly, gave a skin culture yielding triploid and diploid cells, and a blood culture of diploid cells only. The triploid cells contained 66 autosomes and XXY sex chromosomes. A mildly retarded girl with hemiatrophy and zygodactyly gave a similar diploid/triploid mosaic picture, except that the sex chromosomes were XX/XXX. Two aborted foetuses have produced pure cultures of triploid cells.

The triploid cells in the two mosaics may have arisen as a result of failure of the polar body to be extruded from the ovum after the second meiotic

division. Incorporation of this haploid set of chromosomes into one of the daughter cells of the first cleavage division of the fertilized zygote would then give rise to a triploid cell line.

In general, it should be noted that loss of genetic material produces more severe effects than reduplication, and that autosomal aberrations produce greater abnormalities than those involving the sex chromosomes. The addition of one small chromosome 21 causes a far more severe disorder than does the addition of several much larger X chromosomes, or of an X and a Y. The sex chromosomes therefore appear to be much less active genetically than the autosomes.

The mechanism by which chromosome aberrations produce mental defect and congenital malformations is obscure. In most cases it must be presumed that normal genes are involved, but that some are present in extra amount. This in turn could possibly lead to an excessive dosage of the respective enzymes, and a disturbance in the normal balance of metabolic processes. This might be particularly disturbing during embryonic development. However, all of this is speculation.

A little more is known of the factors predisposing to aberrations of the chromosomes. Any process interfering with the normal pairing of chromosomes during meiosis, such as translocation, will make non-disjunction likely. In addition, it is probable that genes exist which tend to produce non-disjunction, both in meiosis and mitosis. Physical agents, such as dehydration, are known to be capable of producing such an effect in plants. Maternal age is clearly correlated with an increased incidence of the trisomic conditions, but the actual chemical stimulus to non-disjunction is unknown. The frequent involvement of the satellited chromosomes, Nos. 13 to 15, 21 and 22, is partly explained by the observation that they take part in nucleolus formation, during which they come into close functional contact. Exchange of segments between them, and delay in separation, is therefore probably facilitated.

Genetic Counselling

The parents of mentally deficient children are nearly always in need of sound genetic advice, whether or not they have voiced their anxieties to the physician. In the absence of expert help they will be at the mercy of the readily proffered opinions of relatives, neighbours and friends. The physician in each speciality is the best person to give advice, and the time for this will be when the diagnosis has been made, and when treatment and management is being planned. It therefore behoves the paediatrician, the specialist in mental deficiency, and the child psychiatrist, not only to inform himself of the rapidly expanding field of diagnostic and pathological knowledge, but also to acquaint himself with the pertinent genetic data. This is an onerous task, and the following attempt to provide some guidance on general lines may be found helpful.

The genetic counsellor must base his advice on three types of data: the diagnosis, the family pedigree, and information from the literature. In mental deficiency the diagnosis is frequently difficult, as a vast number of rare disorders has to be considered. Investigation may require considerable facilities including advanced biochemical and cytogenetic techniques. In spite of such help, in many cases the diagnosis must perforce be in general terms, when advice must be based on the empirical risk figures derived from large samples of similarly classified undifferentiated defectives.

Eliciting the family history is a straightforward but time-consuming task. It is usual to start with the mother's pregnancies, filling in their duration, brief details of delivery, and the outcome. Miscarriages and stillbirths are, of course, as important as live births. The mother's sibs and their children, and the mother's parents, should then be recorded. Her aunts and uncles, cousins and cousin's children should follow where possible. Similar information is then obtained for the father's side of the family. Sex, date of birth and state of health are recorded for all members, with causes of death where known. Enquiry about the presence of disorders such as mental deficiency, paralysis, psychosis or epilepsy is best made individually as each family member is recorded, as this facilitates recall. Consanguinity is an important factor which must be asked about in relation to all marriage partners.

The above scheme gives a minimum of information, but suffices for most clinical purposes, as the close relatives are the most important from the point of view of genetic data. In mental deficiency practice the pedigree alone will rarely give clear-cut indications of the mechanism of inheritance, and may often leave doubt as to whether heredity is involved at all as an important aetiological factor. Knowledge of the literature is here essential, as it provides empirical data relating to chances of recurrence in a family, based on broad diagnostic classes. In the relatively uncommon cases where diagnosis is precise, acquaintance with the literature is still necessary, owing to the possibility of alternative modes of transmission, mimicry by environmental agents, irregularity of manifestation and mutation.

In the case of rare dominant disorders showing full penetrance, genetic prognosis is easy. The chance of any child of the patient being similarly affected is 1 in 2, and unaffected offspring cannot transmit. If the condition is not a congenital one, the distribution of ages at onset needs to be known if the unaffected offspring are to be advised. A late onset, as in Huntington's chorea, means that the chance of 1 in 2 still hangs over the unaffected person until about 10 years, and only slowly improves as he passes into middle life, by which time he may already have reared a family.

Where penetrance is incomplete the chances of avoiding the dominant disorder improve a little. The 1 in 2 figure can be multiplied by the penetrance rate to give an overall probability of development, but this will be inaccurate for individuals, as the rate will vary from family to family, the responsible genetic modifiers being different. It should be noted that in-

complete penetrance may lead to skipped generations, so that unaffected children may pass on the gene to the next generation. In some disorders, such as epiloia, another slightly hopeful feature is variability of expression. This means that the disorder, even when present, may manifest itself with varying degrees of severity.

If both parents of the patient are normal, and the disorder is one of complete penetrance, the risk of recurrence for further children, for offspring of the normal children, and for collateral relatives, is the same as the incidence in the general population. If the dominant condition shows irregular manifestation, however, the assumption that a sporadic case is due to a mutation cannot be made.

The regularity with which recessively inherited disorders are manifested makes genetic counselling easier. For many such disorders fairly accurate estimates are available of the carrier rate and incidence in the general population. The chance of recurrence for subsequent sibs is 1 in 4. The normal sibs of the patient will have a 2 in 3 chance of being carriers. For calculation of the risks in the next generation, the incidence of carriers in the general population must be used. For phenylketonuria this is about 1 in 100. The likelihood of a phenylketonuric homozygote marrying a heterozygous carrier of the gene is therefore 1 in 100, and such a mating has a 1 in 2 risk of affected children, giving an overall risk of 1 in 200 for the offspring of affected patients. For the normal sibs of the patient, the risk of affected offspring would be $\frac{2}{3} \times \frac{1}{100} \times \frac{1}{4} = \frac{1}{600}$. These are very small risks, but are, of course, averaged, so that for a particular mating they are, in fact, different. Thus, some sibs will not carry the gene, and therefore cannot have affected offspring in any circumstances, while for the carrier sibs the risk of affected offspring will be 1 in 4 if the marriage partner is also a carrier, and nil if not.

The development of fairly precise methods for the detection of heterozygotes, as has been achieved for phenylketonuria and a few other disorders, allows us to give accurate advice to the sibs of affected patients. The risk to their children varies from 1 in 4 to nil, as mentioned above, but without carrier detection the averaged figure of 1 in 600 must be given.

A few words should be said here about consanguinity. The parents of a child with a recessive disorder are both carriers of the gene concerned. The parents' sibs have the chance of 1 in 2 of carrying the same gene, and they have a 1 in 2 chance of handing on any gene they carry to their children. If the patient's sib, who has a $\frac{2}{3}$ chance of being a carrier, marries a cousin, the chance of this partnership being a double heterozygote mating is therefore $\frac{2}{3} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{6}$. The risk to their children is therefore 1 in 24. This again is an averaged figure assuming that the carrier state is unknown.

Sex-linked inheritance is relatively uncommon in mental deficiency practice. Transmission is very regular, making prognosis simple, apart from the complications of mutation and alternative modes of inheritance. In the

straightforward case of an affected male born to a carrier female, half the female sibs can be expected to be carriers and half the male sibs affected. An affected male cannot transmit the disorder to his sons, nor to future generations through his sons. All of his daughters, however, will be carriers.

For the female relatives of the patient with a sex-linked disorder and a carrier mother, the outlook is gloomy. The daughters of a patient are all carriers, and have a 1 in 2 chance of producing carrier daughters, and affected sons. The sisters of an affected male, having themselves the 1 in 2 chance of being carriers, have a 1 in 4 chance of producing carrier daughters and affected sons. This, of course, assumes that the carrier state cannot be detected. If this can be done, half the patient's sisters can be given complete freedom from further anxiety, whilst the other half must accept the 1 in 2 risk for their children.

Clearly, where alternative modes of transmission have been reported, every attempt must be made, by clinical and pathological means, and by examination of the family history, to distinguish between the various types before advising the family.

Sex-linked disorders of severe degree, such as those causing mental defect, have relatively high mutation rates, so that a proportion of cases arise sporadically. Where the patient is the first to be affected in the family, the mutation is likely to have arisen in the mother, or in one of her parents. The likelihood of the mutation having occurred further back is small, as no other cases have appeared, and can be ignored. The chance that the mutation occurred in the mother is therefore roughly 1 in 3, and in that event there is no risk of subsequent sons being affected or daughters being carriers. If the carrier state cannot be detected the overall risk to further children of a mother of a sporadic case is therefore $2/3 \times 1/2 = 1/3$, that boys will be affected and that girls will be carriers. In practice things will be slightly more complicated because every male in the maternal side of the family will give extra information. Any unaffected male reduces the possibility that his mother is a carrier, and makes prediction of her genetic state more accurate.

If the patient's disease is due to a chromosome aberration, accurate advice must be based on investigation of the karyotype of the parents, and other close relatives if available. It is desirable to minimize the possibility of parental mosaicism by sampling blood and skin. In Down's syndrome, if the parents' chromosomes are normal, the risk for further children may be assumed to be about five times that of the general population based on parental age statistics. If one parent carries a balanced translocation, repetition of the disorder in subsequent offspring is highly likely, perhaps as high as 1 in 3, although exact figures are not yet available.

In the important types of prognostic problem discussed above, the pattern of inheritance is fairly clear and the estimation of risks not too difficult. Unfortunately, in mental deficiency practice this is not the common coun-

selling problem. More frequently advice is needed by parents of normal intelligence who have a child who is severely handicapped mentally, but in whose case no specific diagnosis can be made. Prognosis can here be given on the basis of empirical data provided by a collection of sibships containing such a patient. Table 1, taken by kind permission of the author and publisher, from Penrose (1963), gives figures for 1897 sibs of 487 propositi of idiot or imbecile level.

TABLE 1. MENTAL GRADES OF SIBS OF IMBECILE AND IDIOT PROPOSITI
(PARENTS OF KNOWN MENTAL GRADE)

Mental Grades of Sibs		Normal	Dull	Feeble-minded	Imbecile or Idiot	Total
Mental Ratios of Sibs		85 and above	70-84	50-69	Below 50	
(A) Parents of normal intelligence (487 propositi)	Number	1715	99	31	52	1897
	Per cent	90.4	5.2	1.6	2.8	100.0
(B) Consanguineous parents of normal intelligence (14 propositi)	Number	39	1	2	7	49
	Per cent	79.6	2.0	4.1	14.3	100.0
(C) One or both parents of subnormal intelligence (138 propositi)	Number	280	101	78	54	513
	Per cent	54.6	19.7	15.2	10.5	100.0

It is seen that 2.8 per cent of the sibs of a low-grade patient, born to normally intelligent parents, are themselves of I.Q. below 50. This is almost ten times the risk in the general population, and gives a chance of repetition of about 1 in 36. If two severely handicapped children have been born to intelligent unrelated parents, the chances of repetition are similar to those pertaining to the consanguineous parents of one such child, as recessive inheritance is likely to be operating in both cases. The table indicates this risk to be of the order of 14.3/100, or 1 in 7. If either or both parents are of subnormal intelligence (in the table taken to include an I.Q. of 84 or below), the chance of a second low-grade defective being born is about 1 in 10. In addition, this type of family stands a 1 in 7 chance of producing a child with defect of feeble-minded level, and a 1 in 5 chance of producing dull children.

In the case of parents of dull normal or feeble-minded children, in whom known abnormalities have been excluded, it can be assumed that multifactorial inheritance alone is operating, providing there is no contradictory family history. The mean of the children's intelligence scores will then

approximate to the average of the two parents. The scatter around the mid-parent figure is, however, not known. Calculations, based on the standard deviation of intelligence in the general population, and the midparent-child correlation, give an expected I.Q. standard deviation of about 11 points within sibships. This would indicate that the chances of children having an I.Q. of 22 or more points below the mid-parent value would be approximately 1 in 45, and for an I.Q. of 11 points or more below the parental average the chances would be about 1 in 6.

Finally, a few general remarks are not out of place. The function of the genetic counsellor is primarily to give skilled help in assessing risks and to aid understanding of genetic problems. It is not his function to tell parents whether or not they should have children. In stating the chances, comparisons with the risks run by the general population are necessary. Most people are surprised to learn that the chance of any pregnancy ending in a severe congenital malformation, or an infant who will show some serious abnormality of physical or mental development in the first few years, is about 1 in 40.

Two simplifications make the counselling task much easier. It has been pointed out by Roberts (1963) that risks tend to fall into two groups—those worse than 1 in 10, and those better than 1 in 20. The former may be considered “bad” risks and the latter “good”. This author also reminds us of the general rule that simple uncomplicated inheritance, showing Mendelian ratios, gives the worst risks, and here the prognosis is clear. When complications occur and particularly when the genetics are obscure, the chances are very much improved, and the patient generally can be reassured.

The counsellor must be acutely sensitive to the anxieties of parents and relatives, even when these are not expressed. Husband and wife may be blaming each other for a child's abnormality. Guilt feelings are seldom absent from the mother of an abnormal child and these are exaggerated if the baby was not wanted, and particularly if, as is not uncommon, attempts were made to cause abortion. Even separation of the parents during pregnancy may be interpreted later by the mother as an important causative factor in the production of her baby's abnormality. Recognition of these emotional reactions is an important part of the counsellor's work. Explanation of the likely causative mechanisms, and the strongest reassurance that the mother is not to blame, is often followed by the most gratifying relief of mental anguish. This can be reinforced by pointing out that we all carry abnormal genes, but that most of us are lucky enough to avoid the visible manifestations in ourselves and our children.

Complete reassurance that an abnormality will not be repeated is, however, not only hazardous, but unwise. Even the smallest of statistical risks results in a few tragedies, and the affected families will not be grateful if they have been given a categorical assurance that repetition is impossible. There need be no undue anxiety if trouble is taken to explain the relation-

ship between the "good" risk and that run by any random pregnancy. In the case of "bad" risks, such as 1 in 4, the nature of the expected abnormality, and the efficacy of treatment, will be important considerations which need discussion.

It is clear that genetic advice is an important part of the service provided by the mental deficiency specialist. Genetic knowledge is advancing rapidly in many fields of medicine, and as techniques become more sophisticated exploration of the subtleties of biochemical individuality and the part played by genetic endowment in the susceptibility to common diseases will extend its usefulness. In general psychiatry genetics has made only a modest beginning. It can be confidently predicted that its contribution will be of increasing importance in the next few decades in its application to both psychiatric disorders and normal personality factors.

REFERENCES

- BARR, M. L., and BERTRAM, E. G. (1949) A morphological distinction between neurones of the male and female, and the behaviour of the nucleolar satellite during accelerated nucleoprotein synthesis. *Nature, Lond.* **163**, 676.
- BROWN, W. M. C., HARNDEN, D. G., JACOBS, P. A., MACLEAN, N., and MANTLE, D. J. (1964). Abnormalities of the sex chromosome complement in man. *Sp. Rep. Ser. Med. Res. Coun.* No. 305.
- CARTER, C. O., and WOOLF, L. I. (1961) The birthplaces of parents and grandparents of a series of patients with phenylketonuria in south-east England. *Ann. hum. Genet., Lond.* **25**, 57.
- CROME, L. (1960) The brain and mental retardation. *Brit. Med. J.* **1**, 897.
- DUFF, J. F., and THOMSON, G. H. (1923) The social and geographical distribution of intelligence in Northumberland. *Brit. J. Psychol.* **14**, 192.
- EDWARDS, J. H. (1961) The syndrome of sex-linked hydrocephalus. *Arch. Dis. Childh.* **36**, 486.
- FÖLLING, A. (1934) Über Ausscheidung von Phenylbrenztraubensäure in den Harn als Stoffwechsellanomalie in Verbindung mit Imbezillität. *Hoppe-Seyl. Z.* **227**, 169.
- GUNTHER, M., and PENROSE, L. S. (1935) The genetics of epiloia. *J. Genet.* **31**, 413.
- HSIA, D. Y.-Y., DRISCOLL, K. W., TROLL, W., and KNOX, W. E. (1956) Detection by phenylalanine tolerance tests of heterozygous carriers of phenylketonuria. *Nature, Lond.* **178**, 1239.
- JERVIS, G. A. (1954) Phenylpyruvic oligophrenia (phenylketonuria). *Res. Publ. A. Nerv. and Ment. Dis.* **33**, 259.
- Leading Article (1963) The Lyon hypothesis. *Brit. Med. J.* **2**, 1215.
- LEJEUNE, J., GAUTIER, M., and TURPIN, R. (1959) Études des chromosomes somatiques de neuf enfants mongoliens. *C. R. Acad. Sci., Paris.* **248**, 1721.
- MUNRO, T. A. (1947) Phenylketonuria: data on 47 British families. *Ann. Eugen., Lond.* **14**, 60.
- PEARSON, K. (1914) *On the graduated character of mental defect*. London: Dulau & Co.
- PENROSE, L. S. (1933) The relative effects of paternal and maternal age in mongolism. *J. Genet.* **27**, 219.
- PENROSE, L. S. (1938) (Colchester survey). A clinical and genetic study of 1,280 cases of mental defect. *Sp. Rep. Ser. Med. Res. Coun.* No. 229. London: H.M.S.O.
- PENROSE, L. S. (1942) Mental disease and natural selection. *Amer. J. Ment. Defic.* **46**, 453.

- PENROSE, L. S. (1963) *The biology of mental defect* (3rd ed.). London: Sidgwick & Jackson.
- ROBERTS, J. A. F. (1963) *An introduction to medical genetics* (3rd ed.). London: Oxford University Press.
- SMITH, D. W., PATAU, K., THERMAN, E., and INHORN, S. L. (1962) The No. 18 trisomy syndrome. *J. Pediat.* **60**, 513.
- SMITH, D. W., PATAU, K., THERMAN, E., INHORN, S. L., and DEMARS, R. I. (1963). The D₁ trisomy syndrome. *J. Pediat.* **62**, 326.
- TJIO, J. H., and LEVAN, A. (1956) The chromosome number of man. *Hereditas* **42**, 1.

FURTHER READING

- HAMERTON, J. L. (Ed.) (1962) *Chromosomes in medicine*. London: Wm. Heinemann Ltd.
- HARRIS, H. (1959) *Human biochemical genetics*. Cambridge: Cambridge University Press.
- PENROSE, L. S. (1963) *The biology of mental defect* (3rd ed.). London: Sidgwick & Jackson.
- ROBERTS, J. A. F. (1963) *An introduction to medical genetics* (3rd ed.). London: Oxford University Press.
- STANBURY, J. B., WYNGAARDEN, J. B., and FREDRICKSON, D. S. (Eds.). (1960) *The metabolic basis of inherited disease*. New York: McGraw-Hill.
- STERN, C. (1949) *Principles of human genetics* (2nd ed.). San Francisco: W. H. Freeman & Co.

CHAPTER 9

Some Aspects of Delinquent Behaviour in Children and Adolescents

by W. H. ALLCHIN

I. INTRODUCTION

This field of study is a socially defined one, it being a section only of the complex field of human behaviour. Delinquent behaviour is that area defined by laws and customs, and thus it has shifting boundaries and will be found to contain all kinds of people. It is important to remember, however, that both study and treatment tend to be confined to those who, having broken laws or customs, are then caught and selected for psychiatric or medical help. Thus much of our knowledge may be found to be based on the study of unrepresentative and curiously selected groups of offenders. Delinquent behaviour covers a wide range, and can include the most serious offences such as murder or the most trivial, the theft of milk bottles or birds' eggs. Any attempt to make a more scientific approach to this study must take into account the subjective responses of the observer, for antisocial acts arouse strong feelings. It is also necessary to note the fact that it is often behaviour which is not being directly observed, but described at second or third hand, and that after a lapse of time and numerous interrogations of the offender. The archaic language still in use by legal and police officials may predispose the observer to a certain set of expectations which will have to be rapidly discarded. Phrases such as "grievous bodily harm" or "blackmail" are used, but may have a technical rather than a literal meaning.

The factors affecting behaviour may be conceived of as being located in a series of concentric circles. The innermost one is the intra-psyche area, open only to introspection and interpretative inference about behaviour. The concepts we use can serve only as models to order our thinking and facilitate communication. As yet we can point to no agreed way of describing the anatomy of the psyche and the workings of the inner world. Nor can psychiatry or psychology yet give a fully coherent and satisfying account of the development of mind and personality in what we might call the normal

person. Hence our understanding of the abnormal must be partial and our forms of treatment still tending to be empirical. However, the various schools of depth psychology do supply conceptual models based on clinical observations, and it may be noted, various religious and mystical experiences are concerned with the same body of knowledge and describe it in their own way.

It is not possible here to outline the scope of these possible models, but it seems that any description or understanding of the intra-psychic area can hardly be achieved without reference to the major analytical schools of thought, namely those of Jung, Freud and Klein. It will be shewn that in some forms of delinquent behaviour the intra-psychic disturbances are the predominant factors present. In the child or young person, when psychological boundaries are weak, fluctuating or ill-defined, the next circle is of almost equivalent importance, namely the family. This defines a realm where the first inter-personal relationships occur and where the basis for the ability to relate is laid down. The inner world of the child is peopled by the activated archetypal imagery of the powerful, numinous figures of mother, father, brother or sister. Then again, the interpersonal field is extended by the sets of relations which may be developed at school, at work and during leisure. And these social contacts must all the time be thought of as taking place, not in a vacuum, but in a certain locality and under physical conditions, which may vary from the most pleasant, to the most unfavourable. We shall have to bear in mind the work done in describing the different parts of a city, and the contrast between urban and rural crimes. Lastly we have the area which includes the national, social and cultural matrix. This entails not only the whole set of values, standards, expectations and aspirations which are mediated by the cultural organs, but also the national image held by an individual and his own relationship to it. At one time something of this could be conceived of in terms of the monarchy which provided the model and the standards, and also the real figures to whom the individual citizen might feel related. It seems fairly clear that for the highly industrialized countries of the world, with economic systems which allow for great discrepancies between standards and modes of living, any unitary national identity is more or less impossible to achieve, except, possibly, in wartime, and individuals have to try to find their significance in relation to different groupings. A period of transition, with loss of national power and prestige, will cause certain internal tensions and make it difficult for individuals to perceive any significant and widely shared set of values, or to feel involvement, except on a limited scale. We see something of the practical expressions of these problems in terms of attitudes to public services and public property.

These wide ranging factors have been noted because the study of delinquent behaviour involves such a comprehensive view. The place of the psychiatrist here also deserves comment. He enters the field by way of the

MacNaghton rules as a figure to certify the presence of insanity in the patient, or to confirm its absence. But from that beginning, connected obviously with the presence or absence of responsibility, his work has extended. Since the formulation of the MacNaghton rules much has happened in the field of psychiatry and the issue of responsibility has become less important. More emphasis has been placed on the less severe or more treatable types of mental illness, and on the assessment of different types of personality with a view to advice about treatment or placement.

It is for the Juvenile Court that the psychiatrist can work most easily, because in common with the Court, he is primarily concerned with the welfare of the offender, his patient, and in working out courses of action to restore mental health and proper social function. Thus, there appears to be no inherent conflict between the wise and compassionate treatment of the offender, and the interests of society. The psychiatrist has become something of a team leader or coordinator, for in his work with delinquents he will be collaborating with many colleagues from different disciplines and backgrounds. The provision of a court report will involve the work of physician, psychologist, psychiatric social worker, probation officer and head-master in addition to the psychiatrist, but his will be the task of gathering the information together and weaving all the strands into a coherent whole which will be a short clear summary for the guidance of the court. The psychiatrist will have to recapitulate something of the emphases of approach which have developed in the course of the history of psychiatry itself. The problem must be viewed from the organic aspect, for conditions such as epilepsy or brain damage may have a significant bearing. However, the more common finding is an absence of any significant physical factors, although physique and appearance are certainly of importance and organ inferiorities may lead to exaggerated compensations.

The descriptive school of psychiatry has also made its contribution, and the major classifications of insanity still have a value, although in work with juveniles a diagnosis of this kind is rarely made. Depth psychology has been able to extend the value of a psychiatric opinion by going beyond description into the realm of explanation. And the work of the analytical schools has made clear some of the states of mind which are relevant. They have also elucidated some of the important environmental factors. The work of Freud has shown some of the mechanisms of neurotic disorders, especially those concerned with the built-in figures of the parents, the controlling super-ego, and has shown that extremes of super-ego function or lack of it can be significant. Jung's work has demonstrated more about the earlier stages of life, the primitive states of mind, of identification and of "possession" by the archetypes of the collective unconscious. These insights of psychoanalysis and analytical psychology have enabled us to see more of the effects of the lack of affection or proper mothering on the development of the personality. And if they have underlined the problems

of treatment, they have also given strong leads as to the direction which preventative work should take. More recently the behaviour-therapists, working with concepts based on stimulus-response conditioning have been claiming to treat both neurotic symptoms and delinquent behaviour. Amid this welter of views many take refuge in an eclectic viewpoint, which avoids both the advantages and disadvantages of commitment and accords well with the English dislike of theory and emphasis on practice. However, the psychiatrist working in the field of delinquency often finds that his examination of patients is a somewhat negative affair, and he is able to make no diagnosis in the ordinary sense of the word. He eliminates the presence of organic disease, of psychosis, of neurosis or psychopathy. He may be left with a picture which seems abnormal and he uses an ill-defined term such as emotional disturbance. The different possible emphases or standpoints in psychiatric thought include that developed from the existentialist philosophers. This highly subjective, sympathizing outlook embraces detailed observation and description of all the phenomena involved and aims to understand the person's mode-of-being-in-the-world. Working in this way it is sometimes possible to establish a proper context in which the delinquent behaviour can find its place and its meaning. It may thus fulfil its role as a means of communication and, so long as there is someone to understand the language and respond, the behaviour may serve a positive function both in the life of the individual and also within the social fabric itself, by drawing attention to unrecognized areas of disease.

At the present time, then, the psychiatric role is primarily that of diagnostician or adviser, whether it be to the court, to the probation officer, or to parents, general practitioner, or children's officer. Secondarily, he functions as a therapist, and in this role is strictly limited. It is rarely possible to carry out intensive psychotherapy, let alone analysis, unless this can be secured on a private basis. It is important for courts and referring agencies to realize that the present Child Guidance Clinic, with its overworked team, does not, as yet, show what are the real treatment possibilities with some forms of delinquent behaviour. Thirdly, the psychiatrist must act in his role as citizen, tax-payer and rate-payer, and try to influence those social measures and provisions which can have such an important effect on delinquencies which seem to proceed from the reaction of essentially normal personalities to adverse social conditions. Here the remedy is the reform of society, rather than the attempt to ensure the conformity of the individual to something external which needs to be changed.

II. PATTERNS OF DELINQUENT BEHAVIOUR

(a) *Stealing*

The typical delinquent act in England at the present time would be an offence against property committed by two or three boys together. Delin-

quencies of all kinds are more frequent among males, some putting the ratio as high as 10:1 in favour of M:F. Among offences, those against property predominate to the extent of being something like 60-80 per cent of the total.

The laws of property demarcate this area of behaviour and endow it with a great quantity of affect, for the protection of property is sometimes pursued with even greater rigour than protection of the person and thus indicates where society places its greatest value. Stealing, the typical delinquent act, brings out points already mentioned in a general way. In some cases the main spring is individual psychopathology. In others social factors predominate. A study by J. Rich (1956) of 200 consecutive cases admitted to a London Remand Home delineated different types of stealing in a most useful way. *The marauding type of offence*, he showed, was an unplanned affair, involving several boys, depending very much on circumstances, and committed by those who were essentially normal in their psychology. Nothing particularly harmful was discovered in their home background. Coming mostly from the lower socio-economic level of society it is possible that attitudes to property may be somewhat different from those of the middle and upper classes. Whether or not an offence is committed may depend on finding the unlatched window, or the unlocked car. Goods on display may also prove too readily accessible. The influence of the group, be it two, three, five or more boys will be important in generating both excitement and fear, the need to emulate and the need to avoid being thought cowardly. Thus immature boys easily get caught up in these escapades, and as easily seem to get caught by the police. They are not essentially antisocial in their outlook, but may come from homes where upbringing is lax and from neighbourhoods devoid of proper outlets for youthful energy and interests. These groups are loosely knit, and could not merit the label of gang. They are normal for this age range and in a sense only accidentally delinquent. However, like other normal groups such as the adolescent street groups described by P. Scott (1956) they may evolve into something different and undergoing a change of structure and purpose, become something of a gang. This will probably be in order to meet the needs of one or more individuals who are more highly disturbed than the others and whose unconscious activity brings about a situation which possesses the group, if only transitorily.

E. Lewis (1954) writing about normal boys' groups has shown how a group tends to form, having a balanced composition of extroverts, introverts, and a leader and possibly, too, a "medium". This latter person may be emotionally disturbed, with ready access to the unconscious. But in the normal boys patterns of mythological significance were observed to be acted out. So the gang may be gripped or possessed by primitive modes of feeling, such as lead to behaviour which is "senseless" and destructive. Davidson and Gehman (1959) describe more structured gangs, and show

how the gang has organization, roles, and functions which closely mimic the organs of adult society. Almost without exception the gang members were drifting and rootless, coming from broken homes and disorganized neighbourhoods. Thus it can be seen that the gang has a positive function, in attempting to create order out of chaos. Not unnaturally, bearing in mind its genesis, it tends to orient itself around a paranoid axis, and gains much of its cohesion by standing against its external enemies, be they adults, police or other gangs. W. Golding (1954) describes in his novel, "Lord of the Flies", the struggle for survival of a group of boys stranded on an island, and delineates most skilfully the evolution of such a gang. The story describes how the more stable, more rational and more civilized boys gradually lost control.

The next type of stealing described by Rich was the *Proving type of offence*. This was more characteristically carried out by one boy alone or with one other, and consisted of stealing, breaking and entering or taking and driving away. Sometimes the objects taken have a value which is symbolic rather than practical. These boys may be somewhat older than the marauders and may come from homes higher in the socioeconomic scale. Like the marauding offences, these also will tend to cease as the offenders grow up, although the proving offences may persist for longer. The offence has a more firm inner meaning and has to prove something to the person concerned. Hence it can take place when he is alone. These offences can be committed by a boy diagnosed as neurotic, and the inner conflict will be an oedipal one, centring around the need for independence. Sometimes it will be in relation to a struggle against Father, but a more common pattern seems to be where the effort is emancipation from the over-possessive Mother. Talcott Parsons (1947) has commented on the social pattern in the Western World, where the Mother is the significant figure in the home and functions as an agent for socialization as well as the provider of comfort. The Father is often a less meaningful figure, away at work for long hours and tired at home. Andry's (1959) work has emphasized the importance of the Father and shows the significant differences between the homes of delinquent and non-delinquent boys in this respect. So the boys in adolescence have a problem with their masculine identification and have to break their close ties with the Mother. Failure to do so may lead eventually to psychosis or else a pattern of homosexual behaviour. Thus their struggle for independence is a highly important one and those who are out-going and rebellious enough to be delinquent, may, with help, win their way through to normal personal and social adjustment. These conflicts, bearing on the adolescent drive for independence, may provoke a great deal of guilt and this itself may help to keep going a repetition of delinquent behaviour. Thus the guilt is temporarily relieved because the offence makes it understandable and punishment follows discovery. Such a mechanism was described by Freud (1951). There is of course an area of overlap with the marauding group, and again social

conditions play a big part in determining the actual expression of these inner conflicts. As the number of cars has increased, so have the offences of taking and driving away. A thorough study of car thieves by T.C.N. Gibbens (1958) has brought out many of the features of these offences which support its placement in the Proving category and demonstrate the neurotic element, including the repetitive nature of the offence and the inner drive for punishment. The "joy-riding" aspect contains something of the proving, too, for it shows the strength and independence of the boy, and also something of the need for excitement which is common to the marauding offenders as well.

The third category described by Rich was *the comforting type of stealing*. This begins early in life, in the home, and showed a positive correlation with separation from, and rejection by, the Mother. It is a type of stealing which spreads outside the home and persists into adult life. Winnicott (1956) writing on the Anti-social tendency, discusses this type of stealing and its relation to deprivation. There is an element in it, he says, which compels the environment to be important. The stealing is a going out to look for something which has been lost. He writes:

"This is the search for an environmental provision that has been lost, a human attitude which, because it can be relied on, gives freedom to the individual to move, to act, and to get excited The child provokes total environmental reactions as if seeking an ever widening frame, a circle which had as its first example the mother's arms or the mother's body."

Thus the failure of mothering starts off the search which spreads through each circle as it in turn fails to hold. Winnicott describes a series (" . . . The mother's body, the mother's arms, the parental relationship, the home, the family, the school, the locality with its police stations, the country with its laws"), often discovered in clinical practice.

The stealing is, Winnicott says, hopeful because it is an active response to a situation and the state of ego development determines whether such a response is anti-social behaviour, rather than the development of a psychotic illness, based on regression and withdrawal. But the situation itself is a basic one, where a sense of legitimate existence seems to hang in the balance.

Sartre (1964) has studied J. Genet, an illegitimate person, both thief and pervers, and brought out some of the essential features of this stealing. He does this in discussing Being and Having. The illegitimate child feels no right to existence. "Being nothing", says Sartre, "he possesses nothing." He has to say "thank you" for everything. Sartre defines the state thus:

"Cast off of a society that defines being by having, the Child Genet wants to have in order to be." Gifts ease the situation, but enslave him to the donor. For he has nothing as of right. Thus stealing is a way both of having and relating to the owner of the object stolen. It is a unilateral transaction, unlike buying, which requires a seller and purchaser. It is moreover

a transaction where the stealer is in control and does not depend directly on the other. R. D. Laing (1960) brings this out when he writes:

“The isolation of the self is a corollary therefore of the need to be in control. He prefers to steal rather than be given. He prefers to give rather than have anything, as he feels stolen from him: i.e. he has to be in control of who or what comes into him, and of who or what leaves him . . . the individual who is sure of his own being does not require to adopt such measures.”

Rich describes a fourth type of stealing which he labels secondary offences. These are planned and measures are taken to avoid detection. Some of these offences will be committed by those from the deprived group who are now getting older and who will go on to form part of the body of chronic offenders.

(b) *Aggressive Behaviour*

The characteristic picture of a Juvenile Delinquent which contemporary society paints for itself is not the unhappy stealer, lonely, ineffective and unwanted. It is, rather, the boastful, cowardly, violent thug, whose aggressive behaviour is chiefly directed against the old, the weak and the unprotected. That such a picture does not correspond to reality is easily demonstrated. Baroness Wootton (1964) has observed:

“In the London Juvenile Court in which I presided for nearly twenty years, I dealt with about seven thousand children and young persons.

The area covered by this Court reaches from the West End of London to Fulham and includes some pretty tough districts. But in all my experience I only had to deal with one case of violence that endangered life, and probably not more than about fifty cases of minor violence. I have not kept precise records, but as I am very much alive to violence I think it highly improbable that I should have forgotten any significant cases.”

Even when it is realized that such an observation is based on experience in one Court only and with a sample representative of nothing but itself, such evidence helps to get the problem into some perspective.

Figures from a Remand Home in London point in the same direction, with a vast preponderance of boys charged with offences against property, and a very small number of cases of assault. Similarly, the Home Office working party (1961) on compensation for victims of crimes of violence says:

“The majority of crimes of violence are unlikely to result in serious or lasting disabilities.”

C. Banks (1962) found that in studying 450 boys aged 17–20, offences of violence occurred in 11½ per cent. The single largest category was fighting with other boys, followed by fighting with the police as the next largest. Again in the majority of cases there was no evidence of serious injury being sustained. All this does not show that aggressive behaviour is not a serious problem or that in a civilized society such behaviour is acceptable. It

may portend serious disturbance in the individual and it has been noted that in a series of adolescent murderers (Gould, 1959) all gave prior warning of what was eventually to happen. However the current stereotype must have some meaning for society and it probably relates to factors such as the unacknowledged destructiveness which is inherent in the massive preparations for nuclear warfare or the passivity with which road deaths are labelled as accidents and accepted as inevitable.

Aggressive behaviour in the home is not always reported as such, but may come to light when other problems are being discussed. The most common seems to be boys attacking their mothers or else turning their destructive feelings onto their rooms or other objects. It seems to be the situation which occurs when unresolved oedipal tensions are present and the fact of actual physical violence is a serious sign. Cases where a solitary boy directs physical aggression towards someone outside the home are suggestive also of serious disturbance and merit full investigation. All possibilities must be considered, organic disease, brain damage, epilepsy, hypoglycaemia, as well as psychosis. Unrecognized depression may lead to aggressive behaviour, which can emerge as suicide. Moods of intense despair occur in disturbed children and adolescents and suicidal risks are difficult to evaluate.

Outside the home aggressiveness against other people may occur in conjunction with drinking and Bank's figures show that this kind of fighting occurs among the older adolescents. It will usually take place in groups of an obvious nature such as a crowd milling around a public house at closing time. Those involved are unlikely to be emotionally disturbed or psychiatrically disordered. Outside the home much aggressive behaviour is directed towards objects, usually public property, such as railway or park equipment. Destructiveness of this kind naturally raises a strong response from adults, and is most likely to occur where groups have a poor identification with any part of the adult world. Such aggression, again, is most likely to be a group phenomenon and, as already shown, the group may become possessed by pathological emotions and behave in a way in which most of the individuals comprising it will repudiate when in a normal state of mind. Questions relating to boredom, lack of recreational facilities and negative feelings about the community are relevant in this connection. But investigation is usually required and it is difficult to get reliable accounts of these outbursts of aggressive behaviour. This again underlines the fact that much delinquent behaviour is not directly observed and descriptions by others require careful evaluation. Fantasies of violence are very common and ideas about the vulnerability of the human body may, in young people, be rudimentary. This ignorance is accentuated by films and television which suggest that a great deal of physical violence can be sustained without apparently infringing the integrity of the physical body. The true meaning of aggression may be harder to understand. Winnicott (1956) has mentioned this component of the anti-social tendency, and sees its meaning at least for the

deprived person as testing the environment for strength and stability. R. D. Laing (1960) has shown that in an adult psychotic patient, violent behaviour was important in the struggle to keep a feeling of personal identity and capacity to relate. And we find that material from the psychotic patient often illuminates the understanding of patients who are less severely ill. As Jung (1959) has said "the things that come to light brutally in insanity remain hidden in the background in neurosis, but they continue to influence consciousness, nonetheless".

(c) *Sexual Delinquencies*

It is not surprising that the onset of active sexuality is fraught with difficulties. These are not easy to investigate in adolescents, especially when social agencies bring about referral to a clinic.

Already the young person has been questioned about his sexual behaviour, and wants nothing so much as not to talk about it any more. The permissive, friendly atmosphere of the clinic may be singularly unproductive if direct questions are forced. It may be necessary to go much more slowly and attempt at first to gain a more general knowledge of the personality and mode of living, into which the offending behaviour may fit as part of an understandable series of attitudes or events. Thus an adolescent boy from a broken home had sustained numerous changes of house and school for many years. He had a very close relationship with his Mother who had remained almost the only constant person or object in his changing world. Great alarm was felt and referral to the clinic followed the discovery that he dressed in women's clothes. Just as extreme shyness is common in adolescence so the wish to show off also occurs and one of the offences occurring at this time comes to be labelled exhibitionism or indecent exposure. Again, it may be hard to establish what the behaviour pattern actually is. In some cases the boy will expose himself from within the safety of the house. In others he does so in the street or park. Sometimes it is to a solitary woman, at others to a group of two or more. Something of the act may be inferred from the reaction to it and there seems to be a definitely aggressive component. Sometimes therefore the exhibitionism is of a positive, active nature, intending to make an impact, to shock, to communicate. At others it may have a defensive origin. Sartre (1952) discusses something of the threat of the other person. He says:

"Then I am sucked into his orbit. My world dissolves and flows away from me. When I fall under the regard of another a hemorrhage sets in, my world leaks and flows away."

This clear description of a state of weakened egoboundary corresponded to the description given by an adolescent exposor of what happened to him on coming under the gaze of a woman. The act of exposure broke the spell, and restored the ego-boundary. He was then free to run away and used to do so, full of remorse.

Some juveniles are charged with stealing female clothing. Some are found wearing it at home. Again, the shock of horror from the adults will make this difficult to discuss with the adolescent, but the context in which the behaviour is set may be one where a crisis of sexual identity is present. Bettelheim (1955) has described the behaviour of disturbed boys and girls during adolescence, and their dressing up on special occasions. About the boys he writes: "Some of them masquerade so well that people meeting them on the street think they are girls. But the motivations, again, are not simple. The disguise represents a desire to be, and to find out how it feels to be, a woman. But it is also an anxious and hostile caricature of women."

Bettelheim's observations suggest something of the purposive nature of the behaviour, and if it can be understood as solution-seeking or problem solving it is possible that more rational attitudes can be taken up by the adults who are involved. During adolescence the conflicts and ambivalencies surrounding the establishment of a firm sexual identity have to be resolved, and it is a last chance to experiment, as Bettelheim has suggested, with the possibility of the opposite sexual role. As with the exhibitionist, such a behaviour pattern in a juvenile may occur as part of a severe neurotic crisis, with high levels of anxiety, but the possibility of the onset of a psychotic illness such as schizophrenia has to be kept in mind. It may alternately be part of a picture more suggestive of psychopathy, where there is deficient ego and super-ego development, and the behaviour represents uncontrolled instinctivity, and failure to adapt to social reality.

Cases of homosexual behaviour in juvenile boys sometimes come to light. Some of these are immature boys undergoing late, or in a prolonged form, the transient homosexual phase which in some degree or other is categorized as normal. Again, the behaviour may sometimes have an irrational urgency about it, and the lack of reality sense will suggest that this is a part of an early schizophrenic breakdown.

This weakening of ego function and activation of the unconscious, can be described in Jungian terminology as the activation of the archetype of the Anima, the contra-sexual figure normally dormant in the male psyche. This movement of the anima and weakening of the ego leads to much anxiety and fears or beliefs about a change of sex. It is not possible here to go into details about the aetiology of homosexuality but the key will be found usually in the parental relationships, particularly with the mother.

So far our discussion of sexual delinquencies has concerned boys only, but in girls sexual misbehaviour is, proportionately, a much commoner problem, but one which is described in different ways. The girl is said to be beyond control or in moral danger. There is a great disruption of relationships in the home, with a hostile relation between mother and daughter. By the time the problem is detected by a social agency it will be found to be of long standing and hard to resolve. Cases of rejection by the home may show how the apparently sexual or genital behaviour is really an expression of the

need for comfort and physical contact which is normally sought by a child from parents. In a general way some of these problems, in boys and girls, can be seen as the prolongation into adolescence, or the re-awakening at this time, of early needs for comfort, security and contact. These needs, then, or retardations of emotional and psycho-sexual development run into the adolescent onset of physical maturity, and the adolescent is faced with overwhelming problems of comprehension and control.

III. TREATMENT POSSIBILITIES

We have already seen how it is possible to view cases as situated on a continual scale, from one extreme when the primary disturbance seems to be an intra-psychic one, to the other where the chief problem appears to lie in social factors, and we can envisage some of the combinations which may lie in between.

Hewitt and Jenkis (1945) have summarized much information in a useful way by describing three behaviour syndromes, which correlated with appropriate situational patterns. They describe

- (1) Unsocialized aggressive behaviour, associated with parental rejection.
- (2) Socialized delinquency, associated with parental negligence and exposure to delinquency.
- (3) Over-inhibited behaviour reaction, associated with family repression.

As with the different types of stealing described by J. Rich, these categories are useful because they already suggest something of treatment needs. However, the first need of all is for a careful assessment of the problem, which entails something like the child guidance clinic approach, so that physical, psychological, family and social aspects can all be examined and assessed. As soon as a child or young person has moved beyond the scope of the school medical service and child guidance clinic, the possibilities of a full investigation become less. Facilities in remand homes may be similar, but it would seem that the prison medical service does not yet have sufficient resources. Before sentence to a Borstal institution is made, reports have to be received about the physical and mental health of the offender. But in the case of detention centres, which deal with an age range from 14 to 21 years, it is possible for an offender to be sent straight from a court, with no prior examination or assessment.

Treatment possibilities can be seen as divided into two broad categories; the first being treatment, advice or support on an outpatient basis with the delinquent remaining at liberty within the community. The second is based on removal from home and placement in a special unit, school, children's home or penal institution.

As has already been suggested, the different types of stealing show that needs may be equally contrasting. The psychologically normal marauding

type of offender will not require, as a rule, to attend a clinic but might be a suitable subject for a probation order, along with efforts to find and encourage him to use socially acceptable outlets for his energy. If offences persist, and home or locality influences seem too much to be resisted it may be that later on a further report will be called for and placement in an approved school considered. The proving type of offence may present in a more disturbed person and the neurotic conflicts may be susceptible to psychotherapy.

At the present time it is important to remember how very restricted are the possibilities for more than a limited kind of supportive therapy at most clinics dealing with outpatients. For a small number a weekly session may be sufficient to build up a significant relationship and effect some inner change. At this age, the conscious resolution of conflict and gain in insight is perhaps not so important as the development of a relationship, or creation of a situation in which the on-going process of psychological development can resume its march. It is important to recognize that if, in the case of proving offences, such as taking and driving away cars, a probation order is made and attendance at the clinic recommended, there will be a difficult period in which further offences are possible. In the comforting type of offence, with a history of deprivation and many changes of home and school, it is unlikely that psychotherapy at the intensity of once a week will be helpful. The painful areas of sadness and suppressed feeling may be stimulated but not properly contained.

Peto (1954) has commented on this problem and the way in which psychotherapy would have to assist such a person, to internalize their conflicts; become aware of them, and actually suffer, instead of making others do so. In fact, such a patient might have to work through a painful neurotic stage on the way to recovery. It is clear that such a course of treatment could not be contemplated unless sufficient expert help were available to the patient, if necessary, for a long period of time.

The psychiatrist's role is, usually, a more limited one in advising on placements and trying to interpret to others something of the needs of the patient for at least a holding operation. It is not unusual for adolescent boys who have spent years in care, to develop a great drive to find their mothers, to try to grow some roots, to establish some kind of personal history. In these cases, psychiatrist and children's officer may form an effective team.

Where a highly charged home situation has led to an assault on mother or behaviour destructive to the home itself, it seems that, while psychotherapy may be indicated, it must be coupled with removal from home as well. An adolescent psychiatric unit might well be the right place. A suitable hostel placement, if available, might be sufficient. Certainly some of these cases find their way inevitably into the adult wards of the mental hospital. These unfortunately can sometimes provide little more than a safe place and an

opportunity for a cooling-off period. Possibilities of psychotherapy, continuing education and the company of the peer group are obviously not easy to provide in such a setting.

Problems such as these may not in any case present as delinquencies. For the family may call in the general practitioner rather than have recourse to the police.

Problems of in-patient or residential treatment are many. An institution has to be very good in order to be better than even a poor home. Staffing such institutions is extremely difficult. Generally speaking, the number of delinquents seen in clinics who require in-patient treatment in a mental hospital is very small. A still smaller, but larger number, would benefit from care in a special adolescent unit. Some find their way to residential schools for the maladjusted, others to the approved schools, Borstal institutions and detention centres. Some of these have psychiatric consultants visiting them, but possibilities of treatment for individuals will be severely limited. Even more difficult is the task of creating an environment in which emotional maturation can proceed, which entails steering a middle course between too much freedom on the one hand, and excessive repression on the other.

The polarization of the community into staff and patient or staff and inmate groups is all too readily achieved. If the institution functions in this way then the influences which bear most continuously and most heavily on the individual boy or girl are those of the inmate group. Thus the very object of the placement can be frustrated from the beginning, and the less disturbed, or less sophisticated in a criminal sense, may be adversely affected. Yet to achieve a more harmonious, democratic type of community which avoids this polarization is almost impossible, for the general level of social and cultural advance in the community at large has not yet reached such a stage. It is interesting in this connection to think of the evolution of the concept of the therapeutic community especially in reference to the Henderson Hospital, and the help it has given to people labelled as psychopaths or criminals.

In considering these various treatment possibilities we have touched on those problems connected with the treatment of psychiatric disorders, and the less specific cases coming under the heading of emotional disturbance. When we come to think in terms of the more normal psychological states, struggling against adverse social conditions, we come to that area of discussion of treatment which begins to overlap with preventive measures. In the case of individuals, there will be the obvious efforts to secure rehousing, or transfer of a family to a different area; there will be the search for suitable clubs and recreational facilities and so on. There will be consideration of problems connected with schooling and the attempt to get provision of extra tuition or remedial help, or even a change of school.

IV. PREVENTION

Considering delinquent behaviour to be an area of human behaviour defined by social rules and laws, any measures designed to influence such behaviour may well be as complex as the factors which bring the behaviour into being. And as human society is always in a dynamic condition, one cannot conceive of final solutions. It is unlikely that any society could exist without some delinquent or deviant behaviour.

Many people now say that poverty having been eliminated, and a certain level of social security assured for the majority of the population at least, that crime and delinquency should have greatly diminished. But such a statement is evidence of a misunderstanding of the nature of human behaviour. When man's physical needs are assured he does not thereby become contented. He is freed for further struggle and conflict. Thus we see in Western society, where the elementary necessities of life are reasonably secured, that anxiety and conflict get centred around other needs, namely the need for status and power. In recent years there has been an increasing sharpness in the struggle for status and an increasing concentration in the deposits of real power. As the peasant was displaced from his land and thereafter could only sell his labour to the owner, so in the modern industrial state, the majority of the population have little or no stake in the ownership or control of the means of production, in fact of the way in which their working lives are governed. It is interesting to speculate about the meaning of thefts from factories and laboratories and so on, and to consider perhaps a new formula, namely "they steal for status" to replace the old one "they steal for love". For without real power or responsibility a man is diminished, however much welfare services may care for him, and it is possible that some forms of stealing are unconscious expressions of this dilemma, and thus have a comforting aspect.

However, these considerations are not perhaps immediately relevant in the consideration of juvenile crime. But we can describe some measures which would be beneficial, and are already accepted as desirable.

In the field of education there is the level of practical difficulties, such as classes which are too large. It seems certain that the last year of school life needs special attention, with small groups learning by visits and discussions, rather than by the formal class-room situation. In this way it might be possible to counteract the boredom and lack of involvement which are so regularly described. Then there is a level where we need to consider the content of education. The complexity of society with various ministries, offices, officials, forms and regulations needs to become part of what is taught. Behind that lies the problem of a philosophy of education, or what are the basic values that are to be transmitted.

Then again on a practical level come the tasks of further education, where, at present, such meagre resources are available that only a small minority of people continue education into adult life.

A further aspect of prevention lies in the field of work and training and recreation. Many offences are committed while young people are out of work and problems of juvenile redundancy and unemployment which have appeared elsewhere could well become serious. This will mean much more effort to provide training, and State action would be required. Then again the pitiful resources of our community in terms of swimming baths, gymnasias, playing fields, clubs and the like will need a great new investment of money and interest to bring them into a proper state.

The controversy over the influence of mass media of communication remains unsettled. But it appears that commercial media oriented towards selling and profit making are unable to function without exploiting and publicizing crime. Recent disturbances by opposing groups of adolescents would seem to be very much of a social artefact, stimulated and shaped up to form good headlines over a dull holiday period.

The detailed reporting of crimes, especially those connected with violence or sex is likely to have a harmful influence on a small number of persons struggling to control similar fantasies and urges. And yet the concurrent attitudes of condemnation which go along with such reporting are likely to frighten off anyone who would want to seek for help even before they have broken down, or actually committed a crime.

V. CONCLUSION

We have described Delinquency as a socially defined area of human behaviour, and by adding the word Juvenile we simply restrict the area of study to within the appropriate age range. We have seen how psychiatry endeavours to work in the field, eliminating first of all organic diseases which may account for anti-social behaviour. Then comes a description of symptoms and natural history, followed by if possible something of an explanatory nature. A further stage is to achieve an empathic understanding of a person's mode-of-being in the world. Whatever the behaviour described, whether stealing, aggressiveness, sexual misbehaviour, truancy or running away, we have seen that it may involve states of mind which are almost normal or those which are greatly disturbed.

Investigation is needed to find out in which cases the intra-psychic disturbance is the predominant factor, and this may also indicate the chief mode of therapeutic approach. At the other extreme we saw that social factors might predominate, and the therapeutic prescription be for better houses, schools or clubs. The majority of cases lie in between the extremes and thus call for a careful assessment of all the relevant factors. This approach means working in teams, with perhaps, the psychiatrist as chairman or coordinator.

The work should result in the production of a useful report for the referring agencies. The various treatment possibilities are seen to be still

somewhat rudimentary, with psychotherapy of an effectual, intensive nature virtually unobtainable.

Preventive measures again range from the practical, already obvious, to those of a more metaphysical nature, which seem to indicate a need to examine the underlying philosophy of a particular society, in the endeavour to see to what extent this itself has the effect of stimulating delinquent behaviour.

Jung (1959) has commented on influence of the unconscious mind and its curious Janus-like quality. It looks back into the past, as indeed we do in the effort to understand the present existence of an individual by going into details of the history of himself and his family. The concept of the collective unconscious points still further back to those impersonal deposits which contain the basic history of human experience. But the other face looks into the future, and this direction is a less familiar one. Delinquent behaviour springs out of the individual's own particular life history. But like all human behaviour, it is purposive and points in whatever way it can to the future. It is by endeavouring to understand the true genesis and purpose of the behaviour that we can hope to free the individual from this need for anti-social behaviour, and leave him able to develop himself to the fullest possible extent, for his own sake and that of the society of which he is an inevitable part.

REFERENCES

- ANDRY, R. G. (1959) *Delinquency and Parental Pathology*. London. Methuen.
- BANKS, C. (1962) Fighting Facts. *Twentieth Century* 170, 43. London.
- BETTELHEIM, B. (1955) *Symbolic Wounds*, p. 41. London. Thames & Hudson.
- DAVIDSON, I. D., and GEHMANN (1959) *The Jury is Still Out*. London. Peter Davies.
- FREUD, S. (1957) Complete Works. *Stand. Ed.* Vol. XIV, 332.
- GIBBENS, T. C. N. (1958) Car Thieves. *Brit. J. of Delinquency* 8, 257.
- GOLDING, W. (1954) *Lord of the Flies*. Harmondsworth. Penguin Books.
- GOULD, J. (1959) The Psychiatry of Major Crime. *Recent Progress in Psychiatry*, Vol. 3, 303-351. London.
- HEWITT and JENKINS (1945) *Fundamental Patterns of Maladjustment; the Dynamics of Their Origin*. State of Illinois.
- Home Office (1961) *Compensation for Victims of Crimes of Violence*. Cmnd. no. 1406. para. 25.
- JUNG, C. G. (1959) *The Archetypes and the Collective Unconscious*. Collected Works, Vol. 9, pt. 1, p. 39. London. Routledge & Kegan Paul.
- JUNG, C. G. (1959) *ibid.*, p. 279.
- LAING, R. D. (1960) *The Divided Self*, p. 88. London. Tavistock Publications.
- LAING, R. D. (1960) *ibid.*, p. 180.
- LEWIS, E. (1954) The Function of Group Play during Middle Childhood. *Brit. J. Med. Psychol.* 27, 15.
- PARSONS, TALCOTT (1947) Certain Primary Sources and Patterns of Aggression in the Social Structure of the Western World. *Psychiatry* X, 167-181.
- PETO, A. (1954) The Interrelations of Delinquency and Neurosis. *Brit. J. Med. Psychol.* 27.
- RICH, J. (1956) Types of Stealing. *Lancet*, 496.

SARTRE, J.-P. (1964) *Saint Genet, Actor and Martyr*. London. W. H. Allen.

SARTRE, J.-P. (1952) *Six Existentialist Thinkers*. p. 117. H. J. Blackham. London. Routledge.

SCOTT, P. (1956) Gangs and Delinquent Groups in London. *Brit. J. Delinquency*, 7, 4.

WINNICOTT, D. W. (1958) *The Anti-Social Tendency*. p. 306. Collected Papers Pt. 1. London. Tavistock Publications.

WINNICOTT, D. W. (1956) *ibid.*

WOOTTON, B. (1964) Personal Communication.

SECTION 3

**FAMILY AND SOCIAL APPROACHES
IN CHILD PSYCHIATRY**

CHAPTER 1

The Role of the Family in the Emergence of Child Disorders

by NATHAN W. ACKERMAN

INTRODUCTION

The inclusion within this volume of a chapter on the role of family in the emergence of child disorders marks something of a turning point in the history of child psychiatry. New developments in medicine, psychiatry, and the related behavioral sciences have propelled us toward this objective; of these, two sets of influences stand out most sharply: (1) the recognition of critical deficiencies in past attempts to correlate child behavior and family environment, and (2) the rapid growth in the theory of personality. In our time we are plunged into a phase of radical reorientation to the principles of causation, diagnosis, therapy and prevention of behavior disorders. This brings us flush against the challenge to embrace the dynamics of individual and family development within a unitary theoretical framework. Are we yet ready for this complex undertaking is the question!

By tradition, the study of human adaptation and associated conditions of illness and health gravitated to one of two extremes, either to the processes of individual personality or to those of society. Accordingly, parallel advances have been made in individual psychology and in the science of society and culture. Paradoxically, however, the study of human adaptation in the intermediate area of the family unit was long delayed. This is especially striking when one realizes that the family is the critical link between the internal forces of personality and the wider forces of society and culture. Many factors contributed to this lag:

- (1) The inadequate understanding of the dynamics of small groups;
- (2) The long tradition of the privacy, the sanctity, the inviolability of the inner life of the family, which hinders systematic study of the intimate aspects of family living;
- (3) The weakening of the family bond, induced by such factors as the impact of the industrial revolution, the tradition of "rugged individualism", and competitive achievement, all of which tend to atomize the family, alienate its members and foster the sentiment "each man for himself";

- (4) The inertia, conservatism, and biased beliefs of the community which block critical examination of those elements in the systems of family and community that contribute to social and mental disorder, while continuing a traditional trend of quarantining and scapegoating the victims of such conditions.

Surely, looking back on the past, it cannot be said that the role of family has ever been ignored; it is rather that the emotional interplay of child and family was conceptually approached in an atomistic and one-sided way. The prevailing style of thinking tended to separate the child from his environment. The child as individual and the family as group were observed and evaluated in parallel, though separate, spheres. Formulating the relation between the two sets of observations became a matter of psychodynamic speculation, a secondary task in conceptualization. This way of thinking and doing in child psychiatry brought forth mainly unintegrated fragments of insight. Characteristically, the literature identified the deviant, inappropriate attitudes of the mother and, less regularly and more vaguely, the attitudes of the father. The conceptual orientation was mainly to the one-to-one relation of parent and child, to the parent viewed as an external influencing agent, rather than to the family as an ongoing living unit with unique, definable properties of its own. Seen in retrospect, the traditional theoretical approach was an oversimplified one. It had built-in limitations which, in effect, placed a stumbling block in the path of progress towards a unified and precise correlation of child and family behavior. To this extent a significant advance in the understanding of psychopathological states in childhood was hampered.

Psychiatry as a special phase of medicine and the healing arts has an ancient background. Modern dynamic psychiatry is something else again. Dating back roughly half a century, it is an exceedingly young science, but the psychiatry of children is even younger, covering perhaps a mere thirty years. In this short span, remarkable advances have been recorded in the understanding of the emotional development of a child in illness and in health. There is this paradox, however; the very proof of a growing maturity in this area is the increasing clarity, confidence and frankness with which we can now define the persistent gaps in knowledge, and identify the weaknesses and limitations of existing theories. At the present time, the entire field of mental health practices for children can only be described as extraordinarily fluid. This is amply attested to in the tremendous range of studies which find their way into print in child development, child psychopathology, and in the applied fields of child rearing, child education and therapy.

The impact of new perspectives can be discerned in two important ways: whereas, at an earlier stage, child psychiatry tended to follow the doctrines of adult psychiatry rather too slavishly, today the tail begins to wag the dog to a startling extent. The expanding knowledge of the psychiatry of children represents an increasing challenge, a potent catalytic force affecting the

further evolution of the principles and practices of the psychiatry of adults. At another level, the changing outlines of child psychiatry, influenced by developments in the social sciences, stirs into being a new dimension in mental health, the psychopathology and psychotherapy of the family unit. Within this broader framework of the family unit, a powerful impetus emerges to understand the processes of health as well as of illness, to conceptualize the dynamic development of individual personality within the development of the family group, and to co-ordinate the knowledge of the psychopathology of child and adult. Inevitably, this brings a changing order to the tasks that lie ahead. It seems reasonable, therefore, to anticipate that an evolving social psychology and social psychopathology of family life will feed back and enrich both the psychiatry of children and of adults. Looking to the future, we may talk increasingly of family psychiatry and less of child psychiatry.

It is self-evident at the outset that huge gaps of knowledge continue to persist in the area of the relations of child behavior and family environment. What we offer here is mainly a point of view, a way of thinking and a method of studying the problem rather than definitive knowledge. With full awareness of the risks entailed, we undertake to schematize the issues beyond the borders of what we are yet able to document scientifically. It is in this spirit of presenting a working paper that we ask the reader's forbearance. The focus of this essay then is to try, as far as present competence allows, to transcend the limitations of past attempts of this kind by providing a more comprehensive conceptual scheme within which to define the role of family in the emergence of child disorder.

HISTORICAL BACKGROUND

A frank retrospective judgment of earlier efforts to illuminate the role of family must bring the prompt admission of critical inadequacies. Knowledge in the psychiatry of children has tended to accumulate in bits and pieces rather than in integrated wholes. The deficiency of past approaches to the role of family is sharply reflected in traditional patterns of clinical practice and teaching. Personality disorders in children were classified descriptively in terms of recurrent, identifiable symptom clusters. Symptoms were related to organic defect, physiological imbalance, or to frustrated needs and associated conflicts and fears. The conventional standards of psychiatric appraisal of the child led with disturbing frequency to inadequate or erroneous diagnosis. The single, most encompassing reason for this has been the difficulty of evaluating the role of family environment.

In psychiatric examination of a child patient, it is not possible to dissociate what is observed from the clinician who is doing the observing. Since he cannot observe everything at once, he concentrates selectively on partial phenomena, guided by his clinical hunches. What he sees depends on his

selective attention, what he chooses to look at as well as what he chooses not to look at. Clearly, this is one possible source of error.

Following child guidance tradition, the labor of diagnostic assessment was divided. The psychiatrist examined the child patient. The psychologist did the testing. The social worker interviewed the mother, gathered and interpreted the social or family history. The usual procedure consisted of a sequential series of operations, clinical diagnosis of the child, history-taking, evaluation of mother, father, siblings. In the secondary task of integrating available information, another level of possible distortion arises; the emotional influence of the family on the child becomes a matter of conjecture. To be specific, when in our customary procedures we examine a child away from the parent, each parent away from the other, each of these sets of data being gathered by different persons at different times, and finally undertake the task of integrating the separate findings, the resulting interpretations of the relations of child and family can be seductively faulty. Empirical experience has shown how skewed and unreliable such conclusions can be. Failure to check the clinical examination of the child as individual against a further evaluation of the child together with parents and family, or failure to check the appraisal of a child in an office interview against the appraisal of the child in his home setting, may often lead to misleading diagnostic conclusions.

Alone with the psychiatrist, a child shows one side of his personality; in the presence of parents, a child shows a different side. It is the social structuring of the interview experience that predetermines, in large part, the selective quality of the child's reactivity. Changes in the interpersonal situation bring critical shifts in the child's response. The kind of information we obtain about a disturbed child depends upon our way of getting it. What appears in one interview situation as a serious psychoneurosis, or even as a tendency to psychosis, may later prove to be an acute transitory disturbance reactive to current family trauma. Errors may also be made in the opposite direction. A child may be diagnosed as showing normal emotional reactivity when, in fact, the psychiatric interview simply fails to mobilize the expression of the child's inner pathogenic core. Thus, the qualifying features of the examinational procedure can account for a range of errors in the initial evaluation of a disturbed child.

The difficulty of judging a child's emotional response to his family may be illustrated in another way. When a clinical history of the child is presented, certain components of the child's behavior are judged to be "reactive" to the family situation. But reactive to *what* in the family situation? As soon as one demands specificity in such judgments, it is seen that the isolation and definition of the specific pathogenic features of the family environment are no easy task. Often the distinction drawn between the reactive components in the child's behavior and other deviant responses presumed to be rooted in the child's intra-psychic organization remains loose and vague.

Inner and outer, past and present determinants of behavior are thus intermingled in an unclear way.

Still another difficulty can be seen in the way in which the child's clinical record is organized. One part of this record deals with the onset of symptoms, a separate section with the child's development, another with the psychiatric examination of the child, and still another with family background. Again and again, one finds that the psychiatric examination data on the one hand and the social or family history on the other are dissociated. The two sets of observations seem to be collected and interpreted in separate contexts. It then becomes difficult to discern the relevant connections, stage by stage, between the emergence of deviant behavior in the child and the psychosocial development of the family group.

The cogency of these considerations is reinforced by empirically documented observations:

(1) The emergence of psychiatric disorder in a child is regularly preceded by family conflict. There is a demonstrable relation between conflict in the child and conflict in the family. Psychiatric disorder in a child is a functional expression of the emotional warp of the entire family; once the family disorder is internalized, the ongoing interaction of child and family affects the further destiny of the child's illness.

(2) The psychopathology of the child is a response not merely to the individual make-up of each parent, but also to a distortion in the evolving identity representations of the joined marital and parental pair. Specific disorders in the development of the marital and parental partnership are followed by a subtle process of displacement and division of these pathogenic trends among the offspring; each child absorbs and reflects, in a highly selective way, the sick qualities of each parent as individual and of the parents as a joined couple.

(3) If the child is treated and the family disorder ignored, the child again falls ill.

(4) If the child improves, other members of the family may get either better or worse.

(5) Conflict and anxiety in other family members may block the progress of the child's therapy. This is especially so if the child is the pawn of unresolved conflicts between the parents.

(6) If the family group is treated as well as the child, it becomes possible to join the goals of therapy with those of prevention of mental illness.

Other defects of traditional child guidance concepts and practices may be summed up as follows:

(1) The unsolved problems of causation of child disorder;

(2) The unsolved problems of diagnosis and classification of child disorder; the difficulties of integrating descriptive, dynamic and genetic aspects of diagnosis;

(3) The tradition of excessive conformity to the standards of adult psychiatry; the one-sided emphasis on pathology; the failure to weigh pathologic trends within the broader frame of total functioning.

(4) The failure to conceptualize the circular feed-back aspects of the relations of child and family;

(5) The lack of standards for diagnosing the whole family; the failure to assess the balance of health and sickness in child and family and to correlate diagnosis of the child with diagnosis of the family;

(6) The failure to define the interplay of multiple disturbances within the family group;

(7) The lag in conceptualizing "acting out" as a pattern of emotional complicity in family relationships;

(8) The inadequacy of our understanding "secondary emotional gain" of illness as family process;

(9) The complications of an artificial division of labor in the Child Guidance Team; the special problems of "separate treatment" of child and mother; the neglect of father; the failure to conceptualize mothering, fathering and "childing" as interdependent role functions epitomizing the psychosocial identity of the family as a whole;

(10) The delay in integrating psychotherapy with social therapy of the family; the failure of an effective program of prevention of mental disorders in children.

The recognition of such deficiencies in the conventional theory and practice of child psychiatry should in no way be surprising. They are the inevitable difficulties of a way of working with child and family, a way of gathering information. The positive values of clinical study of the child within the usual pattern of child guidance operations have been amply demonstrated, but the limitations, weaknesses and distortions of such procedures are less understood. More often than we like to admit, the essential truths concerning stages of child development and the influence of family become twisted, when part phenomena are artificially separated from the whole for the convenience and familiarity of a particular method of study. What begins as an attempt to simplify the means of study brings in the end an aggravated complexity. We must, therefore, be consistently vigilant lest the customary procedures mislead us, give us false facts and pseudo-understanding. Drawn into a blind alley, we may be led to incorrect conclusions, faulty hypotheses, and a kind of theory-building that impedes rather than facilitates the discovery of the truths of child development. If we want to understand the relations of child and family we must engage in direct observation of these very relations; we must study child and family together. This offers a built-in corrective for a range of possible errors in clinical judgment that derives from psychiatric examination of a child which is pursued apart from the family.

PROBLEMS OF THEORETICAL ORIENTATION

Psychodynamic investigation of the interrelations of child behavior and family experience have been given tremendous impetus through the discoveries of psychoanalysis. Psychoanalysis pointed a beacon light to the basic needs of the child, the stages of emotional development, the integration of psyche and some the role of unconscious conflict. If placed in bold relief the psychic bond of child and mother, the child's fear of abandonment and loss of love, his struggle with parental authority and fear of punishment, and the balance between need satisfaction and need frustration.

Freudian formulation of the psycho-sexual stages of child development, however valuable in its own right, failed to provide a satisfactory framework. A critical difficulty resulted from the tendency to dissociate the biological and the social determinants of behavior. When a psychoanalyst alluded to a certain psycho-sexual level, oral, anal or genital, this carried a dual connotation: (a) a specific level of instinctual organization, (b) an implied level of ego development or total personality organization related to the dominant levels of instinctual drive. This is ambiguous and confusing. Missing in this framework are the identity connections of child and family, the relations of ego and super-ego with family interaction and the interplay of the child's defenses against anxiety with the family group defenses of its integrity, stability and growth.

In psychoanalytically derived formulations, selective patterns of interaction were suggested between the child's unconscious needs and particular elements of parental behavior, or between the overt actions of the child and unconscious wishes of the parent. Clearly such correlations are partial in nature. They hypothesize a relation between a piece of the child and a piece of the parent. This piece of the child is not defined in proper relation to the whole child, nor is the whole child seen in accurate perspective with regard to the whole parent, nor to the full breadth of the relation between the parents, nor to the psychosocial configuration of the family as a whole. Parental behavior is defined intuitively in a spotty, incomplete way, often selectively and with prejudice. Frequently neglected, furthermore, are the inevitable processes of change across time in parents and family.

Clinical interest was usually focused on the relation of specific types of reaction in the child with specific parental attitudes, neglect, rejection, harsh or inconsistent discipline, over-indulgence, overprotection; also, the connection of specific body responses in the child to specific anxieties in the parent. Some correlations were established with regard to the child's reactions to rivals for parental love and to parental punishment. Finally, conflict in the child was related to conflict between child and parent, and between the parents. Today, one must be increasingly sceptical of familiar cliches and stereotyped formulations concerning the child's response to parental rejection, seduction, oedipal involvement, narcissistic exploitation, etc. No one of these "noxious" features of the environment can be under-

stood except in the context of a systematic examination of the dynamic processes of the family as a whole.

It is true that psychoanalytic ideology assigned an important place to family as the shaper and maker of the child's personality, but its theoretical structure has thus far dealt mainly with isolated parts of the family, not with the family as a living unit.

Psychoanalytic theory contains a profound riddle concerning the relations of individual development and family belongingness as they evolve through time. How far is the child's personality individual? How far is it familial and social? How far does the child's personality unfold autonomously from within, how far is it influenced from without? How far does it move outward and forward, how far does it move inward and backward? This is the riddle of the inner and outer face of personality, the mystery of the relations of subject and object, the I and me. In psychoanalytic theory we cannot be clear how far they are joined and how far they are separate. Psychoanalysis reveals with uncanny clarity how the child falsifies his image of family, but not how a child assimilates his correctly perceived experience of the realities of family interaction. Psychoanalysis does not adequately illuminate the merging of old and new experience. It does not show how a child learns and grows, nor does it show the forward-moving, creative expansion of personality. It focuses one-sidedly on pathology, insufficiently on health.

From another standpoint the child was viewed as a polymorphous perverse little animal, a pleasure-bent anarchist; the parent as antipleasure. The parent and child were enemies locked in battle, each exacting sacrifice of the other, or at best achieving an uneasy truce. Is sacrifice the core of parent-child relations? It is so that what the child gains, the parent loses, that what the child loses, the parent gains? Is love in family relations impoverishing or enriching? What is mainly revealed here is the competitive, oppositional aspect, not the joining of child with parent and family. Psychoanalysis tended to dissociate the inner mental processes from the forces of the environment. It viewed social force and reality as a contaminating influence. It dichotomized the biological and the social, conscious and unconscious, pleasure and pain, reality and fantasy. Psychoanalytic theory moved from inside—outward and tended, until now, to neglect the circular feedback aspects of the relations of child and parent.

Hindsight is, of course, easier than foresight. We can now recognize that psychoanalysis, with its extraordinary insights, has given rise to new problems. It is clear now that we must mark out the discrepancies between unconscious and conscious striving, illuminate the influence of specific components of pathogenic motivation within the frame of total personality organization, and finally, relate the child's psychosocial response at each stage of development to a definition of the structure and function of the family as a living unit. The processes are multiple, complex, overlapping, difficult to control and interpret.

A question may be raised about our readiness to quantify data in clinical research. How and what to measure must follow hypothesis finding and testing. The traditional method of the physical sciences which distinguishes dependent and independent variables and preserves the constancy of one variable while observing the effect of altering another, is at present hardly applicable to the problem of the relations of child and family. Nor can the principle of rigid controls in experimental design be implemented. A further handicap is the inability to replicate in any exact fashion a particular, though transitory, configuration of family relationships. For these reasons and more, this field of inquiry does not yet readily lend itself to devices of precise measurement. Again and again, psychiatry in general, and the psychiatry of children in particular, have been critically assailed as being pseudo-science. Continuing pressure has been exerted for "exact" research, for a rigorous test of assumed knowledge by scientific method. But what is a true scientific approach to the relations of child and family? Ought we not here to discriminate between science and scientism? Unfortunately, much of what passes as "scientific" in child psychiatry is merely scientific. We must separate the wheat from the chaff. Are we yet ready to quantify data in the area of child and family psychiatry? Surely there is room for critical doubt on this issue. What exactly shall we try to measure and how shall we do it? Only after we have thought through, talked through, and fought through the complex questions involved, only after we have achieved a coherent, consistent conceptual framework, can we begin to consider the challenge of measurement and verification. We need initially to be crystal clear as to what it is we are looking at, before we can turn reasonably to the task of precise validation. Otherwise, we are in constant danger of measuring wrong events, insignificant events, or even of perverting our definitions of the problem to make them conveniently fit familiar and readily available means of measurement. We are faced today with a plethora of statistical studies that, at the least, are without essential value and, at the worst, are misleading. They may actually derail and delay the development of valid knowledge. Clearly, the discovery of new and relevant ideas is our first responsibility.

Still another set of difficult problems derives from the necessity of integrating the knowledge and methods of multiple disciplines. By the very nature of the problem, it demands the contributions of all branches of behavioral science. There is a prime need to integrate psycho-dynamics and social science, but how shall we provide for this contingency? The special complications of inter-disciplinary collaboration are extensively discussed in the literature. For the study of the clinical aspects of human relations problems, experience shows that one needs a special kind of social scientist. For this need, one searches everywhere but, unfortunately, only with rare success. Too often one is inclined to agree with the frequently expressed sentiment that the best kind of interdisciplinary collaboration is that which can be crowded inside one man's head.

THE CHALLENGE

We are faced with twin tasks, each related to and dependent upon the other: the design of a more satisfactory theoretical framework for the emotional relations of child and family, and the creation of new methods of clinical, social and experimental study by which to test and amend this theory. For this purpose, the older, more familiar methods will not work; we need very much to discover new methods suited to the specific nature of this problem. A clinically oriented exploratory interview with the whole family seems to provide one such approach. Such an interview may be conducted in an office or within the home. It affords us new kinds of information about the emotional relations of child and family. The observations thus gathered and the related hypotheses can be applied to a range of special studies. The data of family interaction can be examined from many points of view, using different points of reference, depending upon one's special interest. For instance, one can pursue a differential study of the characteristics of family interaction which are conducive to psychosis or to neurosis. One can examine the features of family structure and function which predispose to shared patterns of acting out, delinquency, drug addiction, etc. One can examine adolescent problems as a symptom of family disorder. One can examine the way in which the character traits, the anxieties and defenses of the two parents are parcelled out among the offspring. One can examine the relations of verbal and non-verbal communication in family interaction. Interpretation of family process and change can be checked against strategically timed interviews with selected parts of the family, individuals or family pairs. One can compare and contrast a variety of family types belonging to the same sub-culture. One can do cross-cultural studies of different family types. One can objectify the findings in these various approaches by the use of sound tape, moving pictures, TV, multiple observers, etc.

CONCEPTUAL FRAMEWORK

The basic need is for an expanded conceptual framework within which to examine the inter-relations of child and family. In this larger perspective, the child is seen as part of the family, the family as part of the child. Without the family, the child is incomplete; without the child, the family is incomplete. The child takes from the family what it needs for its growth and development. The family, in turn, takes from the child what it needs for its growth and development. Each projects on to the other unwanted qualities. The relations between the two are interdependent and interpenetrating. The exchange of affect and influence is a circular one; it moves both ways, from family to child and child to family. Any change in the behavior of family brings a change in the behavior of the child and vice versa. As the family evolves across time, the child must respond accordingly; as the child's

personality emerges, so also must the family react. The correlation of child and family behavior is differently determined for each stage of evolution of the family group, for each stage of the emergence of the child's personality. The circularity of adaptation at any one stage is, of course, influenced by the quality of adaptation that prevailed in the antecedent stage. The perspective is an ecological one; the unit of behavior to be examined is the child within the family rather than the child alone. The family environment is of the essence of the child's emerging pattern of adaptation; child and family are indivisible. This point of view gives full recognition to the need to interrelate mind, body and social behavior. It integrates representations of the inside and outside of the child's mind. It evaluates within a unitary theoretical scheme conflict within and between the minds of family members. It defines the effects of genetic and constitutional factors within the matrix of the ongoing mutual adaptation of child and family group. It gives explicit recognition to the principle that social and cultural factors play a pre-eminent part in the progressive organization of the child's personality. This, in essence, is the psychiatry of the child within the broader matrix of a social psychiatry of the family.

The significance of this shift in orientation is profound. It dictates a movement away from the traditional, exclusive absorption with the individual manifestations of mental illness to an expanded concern for the relevant processes of social interaction. It relates social health and mental health, social disorder and mental disorder. It impels us to define the unit of pathogenic response within the larger framework of total adaptation, to weigh sickness-inducing forces against those that maintain health. For these purposes, obviously, an explicit conception of health, however elusive, becomes indispensable. The emergence of this perspective is historically reflected in the step-by-step movement away from a primary concern with symptoms to conflicts and related ways of coping, to character structure, to the total functioning of personality, to the relations of personality to social role adaptation, and finally to the dynamics of family and culture patterns. It interprets child-rearing behavior and mothering attitudes, not exclusively as a function of the woman's personality, but beyond that also as an idiosyncratic expression of the character and quality of the family as a whole. Mothering is influenced by fathering, fathering by mothering, both in turn affected by the circular interchange of parents with child, child with siblings, younger and older generations, and by the interplay further between the nuclear family and kin. The influences of social class and culture pattern become internalized in the characters of the parents and in the patterning of the family. It is in this sense that the child-rearing needs to be viewed as a shared responsibility.

Within this framework we are obliged to assess psychopathological deviation in a relation to a normative standard of the emotional development of the child. We need to understand better what is a healthy child, a

healthy mother and father, a healthy family, a healthy community and culture. Admittedly the achievement of such standards is a tall order, a most difficult and complex undertaking. Some investigators shy away from the enormity of the task; they say that health is so extraordinarily relative as to defy description. Others go even further; they assert the position that health in human terms is a sheer abstraction, that it does not really exist and, therefore, we can have no scientific definition of health. However relative such a condition may be, health is a human reality. Just as there are degrees and depths of illness so, too, are there degrees and heights of health. If so, we have no alternative, no excuse for avoiding the issue. Unless we make a significant advance along this path of formulating normative standards of development and health, there will always be some question as to how far we can really be clear and confident concerning the validity of our presumed standards of pathogenic development and illness. All things are relative: what goes wrong makes sense only as we place it alongside of a conception of what goes right in human development and adaptation.

The family "makes or breaks" personality. The family has the power to enhance or impair the mental health of the individual. Interactional processes in the family exercise a selective control of emotional expression, supporting some channels for the release of feeling and restricting others. The family strengthens some individual drives, weakens others. It satisfies or thwarts personal needs. It structures the opportunity for security, pleasure and self-realization. It patterns the lines of identification, thus molding the emergence of the individual's image of self. It defines the dangers the individual must face in life. It lends specific form to conflict and may or may not provide an experimental setting favorable to solution. The group life of the family may intensify or lessen anxiety. It exerts a potent influence towards success or failure of particular defense operations. Finally, it may strengthen or weaken the reality testing power of the individual. In turn, the individual gives preference to those features of family experience which are friendly towards and supportive of his personal strivings. He interacts selectively with those aspects of family life which further his personal aims, values, pleasure goals, relief of guilt, forms of defenses and solutions of conflict.

Family roles, then, are interdependent and interpenetrating. Behavior in a family role is influenced from three sources; individual personality, reciprocity of family roles, and the psycho-social structure of the family as a whole. In triangular relationships one member may bind or disrupt the unity of the other two. Emotional illness may serve to integrate or disintegrate family relationships, the illness of one member complementing that of another or having antagonistic effects. The course of illness may be slowed or hastened by the quality of family relationships. Some forms of illness may be shared by two or more members.

The challenge is to interrelate the growth processes of childhood with the developmental processes of the child's emotional integration into his family

group and social community. It is the interaction and merging of the biological and social forces, stage by stage, that molds the characteristics of child personality.

In the purview of history, the family approach to personality disorders in childhood is propelled into being by several converging forces: (1) the revolutionary transformation of the family pattern, induced by social change; (2) the recognition of principle of contagion of emotional disturbance, and the intimate relation between social and mental disorder; (3) the greater appreciation of the limitations of conventional procedures of diagnosis, treatment and prevention that are restricted to the individual child; (4) specific new developments in the behavioral sciences which include a range of studies in ego psychology, small group dynamics, social psychology, anthropology and communication; (5) the changed role of the psychotherapist in the modern community.

Such developments, rapidly unfolding on the contemporary scene, bring a rising pressure for a method of study of the family group as a behavior system.

The family approach enables us to undertake a critical review of existing concepts of causation of personality disorders in children. It leads to more precise criteria for evaluating disturbances of the central roles of mothering and fathering, for the assessment of marital and parental conflict, the effect of child on parent and the functioning of the family as a whole. It makes possible the understanding of the pathology of the individual members in the context of the life of the group. It illuminates the balance between the integrative and disintegrative forces of family life. It makes possible a parallel assessment of sickness-inducing and health-maintaining forces. It suggests some conceptual paths along which we may correct known deficiencies in child and family guidance practices and in psychotherapy. It provides a scheme for integrating social therapy and psychotherapy in family services. Of focal importance is the clarification of those specific components of marital and parental functioning that are conducive to pathological child development.

CHILD—FAMILY DIAGNOSIS

The task of achieving a more precise correlation of child and family requires the following:

- (1) Criteria for the psychosocial structure and mental health functioning of the family group;
- (2) Elucidation of the stages of development of the family;
- (3) A classification of family types according to their mental health functioning;
- (4) A theory of child personality specifying the stages of development in terms of biosocial integration with the family group;

(5) A system of evaluating deviant units of child behavior within the context of total personality organization and adaptation to family roles;

(6) A classification of psychiatric disorders in children that can be joined with the principles of family diagnosis.

The psychosocial structure and functions of the family group may be evaluated horizontally and longitudinally. In the horizontal or cross-sectional view, we may examine the family from the following points of reference:

- (1) The fulfillment, harmonization and balancing of the family functions;
- (2) The typical family role relationships and patterns of complementarity;
- (3) The conflicts and coping; the alignments and splits within the group; the interplay between family defense and individual defense;
- (4) The identity, stability, value orientation and growth of the family;
- (5) The discrepancy between the family's actual performance and a model of healthy family functioning.

On a more differentiated level, we may evaluate marital and parental adaptation, the fit of marital and parental roles, the parents as individuals, the fit of parent with child, child with parent.

In the longitudinal view, we may examine the family at sequential stages of development and adaptation:

- (1) The stage of courtship;
- (2) Early marriage;
- (3) The expansion of family with the advent of the first child;
- (4) The family with multiple children;
- (5) The family in maturity;
- (6) The dissolution of the old family and the creation of new ones.

We may assess the family's capacity to fulfill, harmonize and balance its multiple functions according to the following items: (1) survival and security, (2) affection, (3) the balance between dependency and autonomous development, (4) social and sexual training, (5) growth and creative development.

We may ask: which of these are selectively safeguarded? Which others are neglected or distorted? Which are sacrificed so as to protect which others? In other words, what is the priority that the family assigns to them and what is the pattern of failure to achieve balanced functioning?

As a next step, we draw judgment on the typical family role relationships and patterns of family role complementarity. In the reciprocal role adaptations of husband-wife, father-mother, parent-child, child-sibling, we examine the question of emotional complementarity with the use of five criteria: (1) support of self-esteem, (2) need satisfaction, (3) co-operation in the search for solution of conflict, (4) support of needed defenses against anxiety, (5) support of growth and creative development.

We discern at what specific levels emotional complementarity is preserved, at what other levels it is sacrificed. We draw a further judgment: in the emotional involvement of triangular relationships such as mother, father and

child, does the need and anxiety of one member of the threesome invade and impair the emotional complementarity of the other two?

We classify role complementarity in three broad categories: (1) lacking, (2) partial, (3) complete.

We say there is a lack of complementarity or a negative complementarity when there is a critical reduction at all levels. We say complementarity is partial when it exists on some levels and is absent on others. For example, a satisfactory quality of complementarity in the items of need satisfaction and support of defenses against anxiety, but a relative lack of complementarity in support of self-esteem, co-operation in the quest for solution of conflict and support of growth and creative development. Partial complementarity may contribute to the control of anxiety; it may offset possible breakdown in one of the partners and yet limit growth both of the relationship and of each partner as an individual. We say that complementarity is high or relatively complete where there is emotional complementation in substantial measure on all five items.

The next stage of family diagnosis is the identification of the main patterns of conflict and coping. Conflict and coping are seen as twin aspects of a single process. We define the main conflicts of the family only in the context of a parallel statement concerning the ways of coping with conflict. Conflict within the family emerges out of a struggle between one part of the family and another about what the family is and ought to be, how the family serves or fails to serve the needs of its members, what the members do, ought to do or fail to do for family. Family conflicts revolve mainly around issues of need satisfaction, love expectation, struggle for control or support of a needed or preferred self-image. In the course of such struggle the family group may divide into competing factions. A conflict of identity, values and strivings brings a split in the family which mobilizes one segment against the other. Such splits may be horizontal, vertical or diagonal. They may set male against female, mother and son against father and daughter, younger generation against older. The opposed factions may be equal or severely unequal in power and position. It may be two against two or three against one. It is rarely "all for one and one for all". The breakup of the family into warring factions distorts the execution and balance of family functions. Family splits of this kind are often organized as a cluster of interrelated roles, that of attacker or punisher, victim of attack, the scapegoat, and the family healer.†

We refer to coping with family conflict as family defense. This has as its purpose the protection of the integrity and continuity of family functions.

We identify family defenses tentatively as follows:

(1) Enhancement of the bond of love, sharing, co-operation and identification.

† ACKERMAN, NANTHAN W. Prejudicial Scapegoating and Neutralizing Forces in the Family Group, with Special Reference to the Role of "Family Healer". *Int. J. soc. Psychiat.* Congress Issue, 1964.

(2) Selective shifts in family role complementarity in one or more of the above mentioned criteria.

(3) Rigidification or loosening of the family roles.

(4) Reduction of the intensity of the conflict by means of manipulation, coercion bribery, compromise, denial or escape.

(5) Shifts in the configuration of alignments and splits within the family group and prejudicial scapegoating of one part of the family by another.

(6) Repeopling of the family, that is, elimination of one member or addition of another.

(7) A significant change of environment.

We endeavor to mark out the interplay between the main family defenses of the integrity and continuity of family functions and individual defenses against anxiety.

We come now to the question of family identity. Family identity is what the family stands for. It pertains to a dominant identity, a representation composed of shared goals, values and strivings. Family identity is not and cannot be a fixed or pure thing; it represents a fluid, continuously evolving image of the family as a living changing unit. It is crystallized out of an ongoing clash of multiple, competing, and co-operating partial identity representations. It is molded by the manner in which each member struggles to reconcile his personal identity and values with the shifting representations of family identity across time. It refers in a special way to the direction and content of striving. It answers the question, Who are we as a family at a given time and place and in a defined life situation?

The concept of family stability refers to the continuity of family identity across time, the control of conflict and the capacity to change, learn and achieve further development. It is reflected in the quality of adaptability and growth of family role relationships.

Family identity and stability must be considered together. Stability epitomizes the family's capacity to protect the continuity and integrity of the family's identity under the pressure of changing life conditions. It insures the intactness of family adaptation in the face of new experience. This is the conservative phase of stability. The other aspect must provide for the capacity to adapt flexibly to new experience, to learn and to achieve further development. It represents the potential for change and growth. Effective adaptation or homeostasis requires a favorable balance between the protection of sameness and continuity and the need to accommodate to change. It requires the preservation of the old coupled with receptivity to the new, a mixture of conservatism and readiness to live dangerously.

Within this theoretical framework it seems possible to outline the pathogenic areas of family conflict, those which push the homeostatic function toward decompensation, aggravating the tendency to disorganization, regression, breakdown of communication and emotional alienation; at the opposite pole, we may define the potential in the complementarity of family

role relationships for providing new paths of solution to conflict, establishing effective compensation or compromise, fostering new levels of identification and individuation, and thereby promoting health and growth. Thus we may more clearly view the balance of forces within the family, those that predispose to breakdown and illness and those that protect health and fulfillment.

The diagnosis of the marital partnership is a part of family diagnosis. To be considered are: the capacity for love, mutual adaptation, adaptation to external change and adaptation for growth.

We are concerned here with evaluating the role complementarity of the marital partnership, the levels of conflict, benign and destructive, and the patterns of coping. Worthy of emphasis here are two special features of defense: (a) the use of the marital partnership to compensate anxiety and support one or both partners against the threat of breakdown; the use of external relationships to mitigate marital failure, to provide compensatory satisfaction. (b) The quality of integration of each partner into the marital role and the fit of marital and parental roles.

The performance of the parental pair can be similarly judged by: 1—the complementarity of parental roles; the mutuality of adaptation, adaptation to external change and adaptation for growth, 2—the levels of conflict, benign and destructive, 3—the integration of each partner into the parental role, 4—the effects of parental behavior on the child, 5—the effects of the child's behavior on the parents.

The final step in family diagnosis is the need to define the discrepancy between the actual performance of the family and an ideal standard of family functioning. One can assess: 1—the fulfillment of strivings and values, 2—the stability, maturity, and realism of the family, 3—the presence or absence of regressive and disintegrative trends, 4—the quality and degree of successful adaptation and growth.

The question here is, how far does the family fall short of what it might be, in the family's view of itself, in the community's view of family; and finally in terms of a professional standard of a mentally healthy family unit.

In the longitudinal perspective, similar evaluations may be made for each stage of the growth of the family, as previously indicated; 1—the stage of courtship, 2—early marriage, 3—the expansion of the family with the first child, 4—the family with multiple children, 5—the family in maturity, 6—the dissolution of the old family and the creation of new ones.

The child's adaptation to his family environment is viewed as a biosocial process. Hereditary factors influence such qualities as physical type, affectivity, motor reactivity, and intellectual potential, but the processes of socialization pattern the form of all behavior. The channels of expression of physiological need are organized by the social interaction of the child and parent, and by the typical interpersonal relationships within the family group. The individuality of the child is incomplete; he develops only a relative autonomy.

The stages of development of the child are viewed as advancing levels of biosocial integration with, and differentiation from his family environment. At each stage of maturation, his drive, defense, perception of self and others, conflict and anxiety are conceived as inter-related elements in a unit of adaptation. The body orifices, the skin, the activity of the internal organs and the muscle systems are regarded not only as sources of pleasure and means of avoiding pain, but also as somatic agencies for the interchange of energy between the inner and outer environment and as sub-verbal instruments of communication. As the child develops, he achieves different levels of emotional union with, and individuation from his parents. When a child acquires speech, independent mobility and increasing realistic mastery of his environment, his identity is further differentiated by his response to his two parents as a joined couple and by his relations with his siblings and grandparents. For purposes of definition, the child's emotional development is divided into stages. Each stage is conditioned by the previous stage, merges imperceptively into and overlaps the next stage. With maturation from one stage to the next, the processes intrinsic to the previous stage do not cease but become less prominent and are differently integrated into the dominant patterns of the succeeding stage. These stages of development are best identified in terms of the characteristic trends of adaptation.

(1) The immediate post-birth stage reflects mainly a vegetative adaptation. The organism feeds, sleeps, cries when hungry. The integration of nervous system functions is incomplete; perceptual responses are crude, relatively unorganized and do not yet leave permanent psychic residues.

(2) The second stage is one of the primary biosocial union with mother. Though physically separated at birth, the infant is totally dependent for survival and development on symbiotic union with mother. It requires nourishment, tender warmth, touch contact and stimulation and protection from danger. At this stage the child's behavior alternates between the extremes of helplessness and defenselessness and a striving for omnipotent control. The urge for omnipotent mastery is conceived not as a function of the child as individual, but rather as a function of the child's biosocial union with mother. The child commands, the mother obeys; the mother commands, the child obeys. The child is not yet able to distinguish the mother's self from the own self. The mother functions not only as the source of love and security but also as the perceptive and executive agent of the child, communicating through her behavior her own affective interpretations of the prevailing realities and also her devices for dealing with them. At this stage the child is already capable of a tender, warm response to mother. Premature, excessive, shocking or sudden withdrawal of mother induces in the child feelings of panic, helplessness, fear of loss of life and outbreaks of aggression.

(3) The third stage is one of gradual separation of the infant's self from mother's self. As the child matures there is progressively less panic and less

aggression on separation. The child begins to assert its separate self with increasing firmness. As he becomes ambulatory, he develops the power of speech and greater physical mastery over his environment. As the original biosocial unity with mother lessens, omnipotent behavior gives way to an increasing measure of real control and progressive testing of reality. Along with these trends social discipline of the child assumes increasing importance. The child comes to terms with parents and family. The mother's care and control of the child are influenced by the quality of her relations with father and family. As a child submits to parental discipline, he begins to internalize social standards, at first depending on the parent as an external source of control, but gradually incorporating these standards into his own personality.

(4) The fourth stage reflects the child's differentiation of the two parents according to sex, redirection of the child's love needs in accordance with the parents' masculine and feminine qualities and the relationship between them. In a parallel process, corresponding identifications emerge with each parent. There is deeper internalization of functions of conscience, now influenced by the distinction between male and female parent and the emerging sexual identity of the child. The further stages of submission to parental discipline are differentiated accordingly.

(5) The fifth stage is one of expansion of the emotional and social spheres of the child's interaction with his environment beyond the confines of his immediate family, testing of social reality and learning in the context of wider contact with peers and parent substitutes. This is a period of broadened social growth, education and preparation for adolescence.

(6) The sixth stage is one of pubescent growth, bringing in its wake the struggles of adolescent adaptation. Differentiated sex drives emerge and there are reorganization of the lines of identification, realignment of group allegiances and roles and anticipation of and preparation for the tasks of adult life.

The role of family in the induction of child disorder rests on the emotional hurts inflicted upon the child, the timing of these assaults and their duration. The eventual outcome is determined by the maturational condition of the child as organism, the vulnerability of the child's personality, and the healing powers that can be mobilized by child and family together.

The more disturbed the family, the more are the relations of child and family bound to the theme of sacrifice, an emotional sacrifice imposed upon the individual as the price of membership. The child suffers this sacrifice as the victim of a form of prejudicial scapegoating that is characteristic of the given family. In malignantly disturbed families the prejudice is, in effect, *the child must not be*; in less disturbed families, *the child must not be different*. The scapegoating of the child may revolve around a range of prejudices which attaches to those qualities of the child that represent a threat to the parents. The prejudice may take the form of an antagonism to anything new, any expression of change or growth; it may be opposition

to the assertion of difference, or to the expression of spontaneous feeling. The prejudice may revolve around issues of conflict between the younger and older generations. It may attach to the war of the sexes. It may become connected with brain versus brawn, smart vs. stupid, fat vs. thin, light vs. dark skin or to a variety of habits concerning food, clothing and cleanliness.

The emotional injury inflicted on the child may result in (1) a fundamental threat to the child's survival, in terms of body injury, neglect, starvation, physical or emotional, or both. (2) A pathogenic symbiosis of child and parent with a fixation of child's growth. (3) Susceptibility either to a major or minor mental illness.

The emotional sacrifice that family exacts of the child as the price of membership may be (1) relatively total, (2) partial and selective. In total sacrifice, *the child must not be*. He has no right to live, breathe, eat or move. The sacrifice imposed is extreme. The family maintains itself in a static equilibrium at the expense of the emotional life of the child. The growth potential of the child is impaired, warped or destroyed. It is this pattern of emotional injury that predisposes to psychotic development.

In the case of partial sacrifice, the relations of child and family are bound to the theme, *the child must not be different*. In order to assure security and approval, he must conform by surrendering a segment of his individual being. The family maintains its equilibrium by imposing upon the child this forced partial surrender. In this configuration of child and family, so long as conflict is contained and defenses are compensated, the disturbance results mainly in psychoneurotic development.

In a deviant pattern of partial sacrifice, where defense operations decompensate and there is a relative failure to contain conflict, the outcome becomes either exile or forced complicity in disordered family relationship patterns.

The result of this trend may be (1) alienation of the family members, each going his own way, (2) A pattern of sociopathic rebellion, indulgence in alcohol or drugs, etc. (3) A perversion of family relationships to the goal of power, degradation, and destruction, (4) psychosomatic disorder. Such disorders sometimes serve the purpose of offsetting a complete breakdown of defenses, and the outbreak of overt psychosis. By identifying patterns of prejudicial scapegoating and the characteristic forced sacrifice, it becomes possible to define those features of the family environment which act as "sensitizers", "pressurizers" and "precipitators" of disturbance in a child. At each stage of child development, the healing of conflict and anxiety may be either healthy or pathological. It is when healthy healing fails that deviant patterns in the child become fixed and persistent. As a child moves to the next stage, new deviations may be superimposed and added to the clinical picture. Thus, multiple types of pathogenic response and mixed symptoms may emerge, referable to different stages of development.

The child may react to threats in the family environment in one of the following ways: (1) he may attack his family and attempt thereby to coerce

PSYCHIATRIC DISORDERS IN CHILDREN
Genetic Schema

External Environment	Functional Personality Disorders			
	Conflict with Environment		Conflict with Self	Structured Patterns of Pathology
1. Unfavorable Environment	Habit Disorders	Conduct Disorders	Neurotic Traits	Character Deviations
	A. Physical B. Social (1) Internal dynamics of family life (2) Interaction of family with environment	Feeding Disorders, Sucking, Biting, Vomiting, Crying, Picking, Scratching, Masturbation, Rocking, Head Banging, Enuresis	Defiance, Rebellion, Disobedience, Tantrums, Cruelty, Destructiveness, Hyperactivity, Negativism, Lying, Stealing, Precocious Sex-Activity, Timidity, Withdrawal, Asocial Behavior	Jealousy, Envy, Inhibition of Curiosity, Play & Imagination, Inhibition of Aggression, Sleep Disorders, Nightmares, Sleepwalking, Enuresis, Speech Disorders, Masturbation, Fears, Disturbances of body attitudes, Fears i.e. of darkness, animals, thunder, water ✓
				Anxiety, Hysteria, Conversion, Hysteria, Obsessive Compulsive, Hypochondriacal
				Undifferentiated, Schizophrenic retreat from reality, falsification of reality, disturbance of thought, affect and behavior, Vegetative disturbance, Depressive (Manic)
				Psychosomatic Reactions
	Primary Behavior Disorders			
2. Favorable Environment →	Primary Emotions			
	Love			
	Fear	→ Anxiety	→ Conflict with environment	→ Anxiety
	Rage		→ Conflict with Self	

(Chart continued on next page.)

Personality Disorders with Organic Base				
	Secondary Behavior Disorders	Mental Retardation Structural Type	Organic Syndrome	Psychoses
<p>1. <i>Impaired</i></p> <p>a. Disorders C.N.S.</p> <ol style="list-style-type: none"> 1. Heredity 2. Congenital 3. Developmental 4. Degenerative 5. Traumatic 6. Inflammatory 7. Deviant C.N.S. Physiology 8. Endocrine <p>b. Normal</p> <p>c. Physical Illness</p> <p>d. Body Defects</p> <p>e. Abnormal Body Functions</p>	<p>Behavior Disorders secondary to Defect, Deformity, Illness, Deviant Physiology, etc.</p>	<p>Weakness of Intelligence Poverty of Association Perception and Apperception Impaired Defect of Judgment Memory Function Variable Inadequate Motor Coordination "Stigmata" of Degeneration</p>	<p>Cortical Impairment Defective Organization of Intellect, Memory, Judgment Paucity of Association Poor Concept Formation Limited Power of Imagination Undue Generalization Defective Organization of Emotions Emotional Instability and Inadequacy</p>	<p>Psychotic Reactions engrafted on Organic Base Schizophrenic Reaction with Organic Base Undifferentiated Psychotic Reaction</p>

gratification of need. In this category fall the aggressive conduct disorders and the sociopathic forms of behavior disorder. (2) The child may withdraw from contact with his family. In this category fall the recessive personality developments and trends toward excessive preoccupation with self and body. (3) The child may react with excessive anxiety, internalization of conflict and with a production of one or another structured form of psychopathology: (a) excessive anxiety with internalization and encapsulation of specific conflicts as in the production of psycho-neurotic reaction, (b) excessive anxiety, defective emotional control, decompensation of defenses, paralysis or disorganization of adaptive functions which may induce sociopathic or psychosomatic tendencies, (c) excessive anxiety, disorganization of adaptive behavior, arrest of development and/or regression and reintegration at a primitive psychic level as in psychotic forms of reaction.

This range of disorders is represented in the following chart.

Psychiatric disorder in a child must be classified and correlated with the specific type of family environment. The classification of family types according to mental health functioning is a complex undertaking. With the limitations of present knowledge we can only suggest a crude tentative grouping of family types. From a genetic or developmental point of view:

(1) *The healthy or expansive growing family* (see below).

(2) *The accidental or unintended family*—one that is forced by external circumstances as, for example, in a marriage and family brought about by pregnancy or other accident of life.

(3) *The abortive or temporary family*—one that emerges out of a kind of life adventure, a trial marriage, a conversion of a sexual affair, unintended basically to endure or evolve into a normal family group.

(4) *The family of flight*—one that results mainly from the urge to escape from conflict with the family of origin or a kind of family that is brought about as a rebound from a prior disappointment in love.

(5) *The family of expediency*—one that derives from an arranged marriage, a pact of security or one that has the purpose of joining two larger families.

From a functional point of view:

(1) *The healthy family*—a theoretical ideal. Mother and father have a good fit both in the marital and parental partnership. They are able to share realistic goals and compatible values. They share awareness of these strivings and values, positive in emphasis rather than defensive. Compatibility is achieved in a reasonable measure in the emotional social, sexual, parental and economic areas. Conflict is not excessive, is under control and mainly has realistic content. When conflict arises, the parents are able to co-operate in the search for the solution or appropriate compromise. A transitory disturbance does not involve an excess or persistence of accusation, guilt feelings and scapegoating. There is empathic toleration of differences based on mutual understanding and respect and also tolerance of residual immaturities that might be present in one or another family member. There is

sharing of pleasure, responsibility and authority. There is reasonable fulfillment of goals, both for the family as family and for the development of each member. There is appropriate concern for the welfare and development of other members of the family as well as for self. In the face of differences the mutual, unreserved acceptance of one family member by another makes these differences a stimulus for growth rather than a basis for conflict, or alienation. The actual performance of the family reasonably approximates its goals. Relatively high emotional complementarity among the family members exists with no significant trends toward isolation, disintegration or regression.

(2) *The immature protective family*—the type of family which emerges out of an original need. One part needs to relate to the other in the role of parent. The relationships remain immature and protective.

(3) *The competitive family*—one in which relationships beginning with the parents are excessively influenced by motives of envy, jealousy and competitive admiration.

(4) *The family of neurotic complementarity*—a type of family in which the special neurotic needs of one parental partner are complemented by the other; one partner serves as a healer of the conflicts and anxieties of the other. The stronger partner in this arrangement is intended to provide immunity against emotional breakdown in the more vulnerable partner. In such families children are exposed to the imposition of a special kind of emotional sacrifice, one which requires them to surrender specific parts of their being as the price of belonging and protection.

(5) *The family of complementary acting out*—one in which the members join a shared pattern of acting out of conflicted urges. There is unconscious complicity in the acting-out pattern.

(6) *The detached, or emotionally isolated family*—a family in which a tolerable balance is struck among the members conditional on maintaining a required degree of emotional distance and isolation.

(7) *The master-slave family*—a family with a characteristic role relationship: one partner seeks omnipotent control of the other. The master needs the slave; the slave needs the master. The one is aggrandized as the other is demeaned. The natural goals of love, sharing and identification are perverted to the goal of power to dominate, degrade, and ultimately destroy the partner. In essence, this is a symbiotic bond in which one partner expands at the expense of the other.

(8) *The regressive family*—a family dominated by a negative orientation to life. There is a shared fear of and prejudice against life and growth. There is a shared expectation of imminent catastrophe. There is an implicit theme of total sacrifice. One member must surrender the right to live, breathe and move in order to assure the survival of other parts of the family. In its emotional orientation the family moves backward in life, rather than forward. Its relationships follow the master-slave pattern. This is the type of family that is most apt to produce psychotic disorder.

REFERENCES

- ACKERMAN, N. W. *The Psychodynamics of Family Life*, Basic Books, 1958, N.Y.
- ACKERMAN, N. W. A Dynamic Frame for the Clinical Approach to Family Conflict. In *Exploring the Base for Family Therapy*, Edited by Ackerman, Beatman and Sherman, Family Service Association of America, 1961.
- ACKERMAN, N. W. Child and Family Psychiatry Today: A New Look at Some Old Problems, *Mental Hygiene* 47, Oct. 1963.
- ACKERMAN, N. W. Prejudicial Scapegoating and Neutralizing Trends in the Family Group, *International Journal of Social Psychiatry*, Congress Issue, 1964
- EPSTEIN, N. B. and WESTLEY, W. A. Parental Interaction as Related to Emotional Health of Children, *Social Problems* 8, 87-92, 1960.
- RAPOPORT, R. Normal Crises, Family Structure and Mental Health, *Family Process* 2, March 1963.
- MEISSNER, W. W. Thinking About the Family, *Family Process* 3, March 1964.
- TYLER, E. A. The Process of Humanizing Physiological Man, *Family Process* 3, Sept. 1964.
- VOGEL, E. F. The Marital Relationship of Parents of Emotionally Disturbed Children: Polarization and Isolation, *Psychiatry* 23, 1-12, 1960.

CHAPTER 2

Family Vicissitudes in Relation to Personality Development

by PORTIA HOLMAN

THE theories of personality which form the basis of the preventive and remedial work of most child psychiatrists are now well known. For this reason and also because they receive detailed discussion elsewhere in this volume, they will be treated here only in summary form.

The up-bringing of a child has to provide both for his immediate needs and for those that are more remote. In the interests of his adult well-being a good deal of parental effort is directed to introducing him to society's demands, to inducing him to forego, postpone or ration instinctual satisfactions and gradually come to tolerate a fairly high degree of frustration. But the parents, particularly the mother, begin by responding to his every demand and continue through his long period of helplessness to supply his needs, both physical and emotional.

It is interesting to note that the Oxford English Dictionary defines "nurture" as (1) "moral training and discipline" and (2) that which "nourishes". To nurture in these two, often opposed, senses is the parents' function. A further element of nurture, begun by the parents, though usually taken over after a few years by professional teachers, is training in skills and techniques for mastering the environment. In this, too, nourishment and discipline are combined, but sooner or later, it provides satisfactions which may serve as compensations for those the child has been obliged to renounce. It is the contradictory nature of these two aspects of nurture which creates the first and most fundamental problem in parent-child relationships.

Throughout childhood the forces of instinct are being confronted with the demands of society. The history of the development of any personality is the history of successive conflicts and their outcome. Thanks to the work of psychoanalysts and ethologists a good deal has been learnt of the processes of socialization. These workers have also provided evidence of the strength of the resistance put up by the instinctual forces, of the mechanisms brought into play for dealing with conflicts beyond the child's strength, and of the persistence of these mechanisms in adult life in the form of neurotic and personality disorders.

Probably no two people are exactly alike in their innate instinctual equipment and no two are subjected to exactly the same social pressures and, consequently, no two personalities are identical. When a child is psycholog-

ically disturbed the fault may lie with his make-up or with the demands that have been made upon him—their nature, their number or their timing. Child psychiatrists, whose understanding of personality development is derived from their study of what goes wrong, are bound to pay attention to abnormalities of make-up, to disease or defect of body which interferes with the child's capacity to struggle with society's demands. These, however, are not dealt with in this paper whose main concern is with some of the psychological and social stresses to which the potentially normal child may be exposed and with ways in which he may react to them.

Because his parents provide "nourishment"—love, basic security and the conviction that he is valued and wanted in the world, the baby comes to accept "discipline". Through identification with his parents, he gradually acquires that way of controlling and criticizing his own behaviour that we call the formation of conscience. In time, he comes to conform to some social code of conduct (not necessarily that of the society in which he lives) because, in the main, he is content to conform.

In the early stages, however, the child sees the parent as "good", when he (she) is giving; bad, when withholding or demanding. The child loves the good parent; hates the bad one. But the parent, the nourisher, is the child's only comfort and protection against bad whether it comes from outside or from the parent himself. At times, this may mean turning to one parent as an ally against the other; but more often the child loves and hates the same person simultaneously and then wants the almost impossible thing, that the parent should be "good" by doing battle with his own badness on the child's behalf.

The infant equates discipline and hate (sometimes rightly) but expects his parent's love to prevail. If this expectation is fulfilled, he will grow up with a personality in which love prevails over hate—the first essential for mental health. In general, the younger the infant, the more unqualified and unconditional is the mother's love. Hence, a child who spends his first few years in contact with a happy and contented mother will have this firm foundation to his character, whereas one who lacks it will have the faults of what we now call the "affectionless character." Bowlby (1951) gives the following list:

- superficial relationships;
- no real feeling—no capacity to care for people or to make true friends;
- no emotional response to situations where it is normal—a curious lack of concern;
- deceit and evasion, often pointless;
- stealing;
- lack of concentration at school.

Bowlby, in a well-known passage, describes the primary nourishing aspects of maternal care: "what is believed to be essential for mental health is that the infant and young child should experience a warm, intimate and continuous relationship with his mother (or permanent mother-substitute) in which both find satisfaction and enjoyment. Given this relationship, the

emotions of anxiety and guilt, which, in excess, characterize mental ill-health, will develop in a moderate and organized way. When this happens, the child's characteristic and contradictory demands, on the one hand, for unlimited love from his parents and, on the other, for revenge upon them when he feels they do not love him enough, will likewise remain of moderate strength and become amenable to the control of his gradually developing personality. It is this complex, rich, rewarding relationship with the mother in the early years, varied in countless ways by relations with the father and with siblings, that child psychiatrists and many others now believe to underlie the development of character and of mental health". A little further on, Bowlby continues "fathers also have their uses, even in infancy. Not only do they provide for the wives and enable them to devote themselves unrestrictedly to the care of the infant and toddler, but... they support her emotionally and help her to maintain that harmonious, contented mood in the aura of which the child flourishes" (Bowlby, 1951).

In this formulation there are some tacit assumptions. Not only is it implied that the bodily health of the child as well as that of the parents, that their economic and material conditions are reasonably good, but also that both parents are capable, for as much time as may be necessary, of being devoted, "child-centred" parents, who not only put the child's welfare before their own, but know how to strike the balance between the child's long and short-term needs. They are expected to provide nourishment and discipline, to know how to do this, and how to vary the proportions of these two ingredients at different stages of the child's life.

Few families can reach this ideal standard in all respects. While the child psychiatrist emphasizes such factors as personality structure and inter-personal relationships, sociological factors, such as the presence or absence of one or both parents, the ages of the parents, the number and spacing of children; economic factors such as fluctuations of income, material conditions of working and living; medical factors such as frequent, severe or chronic illnesses, disabilities or handicaps, and many other environmental circumstances have a considerable influence for good or ill on family life and so on, the opportunities given the growing child to come to terms with social demands and pressures.

The effects of some of the environmental conditions—over most of which the individual has little or no control—may transform a normal family into one that is abnormal in the sense that the development of a satisfactory personality is seriously jeopardised.† For this reason, some of

† There is no one standard or ideal personality from which deviations can be measured. When psychiatrists speak of disorders or distortions of personality, they mean *either* that the individual lacks some traits that are valued in his social group (e.g. psycho-pathic personalities lack "normal" responsiveness to approval or disapproval) *or* that the individual has acquired some socially valued trait or traits only at the expense of his own mental comfort.

these conditions will be discussed later in this paper. Assuming, for the moment, that environmental factors are reasonably good, there are still many psycho-biological stresses to which the developing personality is exposed, with the risk of permanent distortion. The child is particularly vulnerable at certain critical phases which high-light weaknesses and imperfections in the parents' personalities.

CRITICAL PERIODS IN DEVELOPMENT

Childhood occupies a much greater proportion of the total life span in humans than in any other animal. It is unique first in the length of the period of absolute helplessness and then in the long period of dependence, which is to some extent a social artefact. During this long time there are many periods of special vulnerability to psychological stress.

Birth itself is a hazardous event with an appreciable toll of physical handicaps. There is little evidence for the existence of psychological birth traumas, though some psychoanalysts are convinced that they occur. What may be disturbing to the child is the mother's part-partum depression, now recognized as a comparatively frequent happening.

Once the baby is born, feeding, weaning, teething—all normal events—may be sources of suffering with lasting consequences. Feeding difficulties in older children—which are, in effect, conflicts between mother and child—are often found to have their origin in the first few months of life.

After these painful events, the first major encounter with parental demands is over toilet training. What is demanded is that primitive satisfactions connected with excretion be given up and this renunciation is made at some cost to the child. The secure child makes a relatively small sacrifice, but that of the insecure child may be emotionally crippling. Or, he may make the renunciation only after a long-drawn out struggle for mastery which may characterize all his future inter-personal relationships.

With walking, talking and increasing independence comes the phase of "normal negativism" when the child tends to do—and take pleasure in doing it—just the opposite of what is asked of him. This may be the first serious challenge to the parents' capacity to control their child and may mark the beginning of hostility and conflict in their relationship with him.

The Oedipus phase, too well-known to need description, may set in train or heighten bad relationships. Parents who are themselves secure and happy in their partnership are able to help their child through this peak of passionate feeling. It is, however, one of the phases in child development which makes the biggest demand on the parents' understanding and good-will. It provides an opportunity for an unsatisfied mother to seduce and exploit her son (or father his daughter) but it is also possible that she will not be able to tolerate the tyranny of the 4-year old's love and will appear not only unsympathetic but positively hostile.

At this time the boy is a rival for his father and this to some fathers constitutes too great a threat.

Beginning school, finding in teachers authority figures who may outshine the parents, moving to a world of which home is no longer the centre, all these may be critical periods which, though potentially strengthening, may damage the child's developing personality. Still more critical is adolescence with its multiplicity of stresses. As Tanner points out, at this time, "the potentialities for many various kinds of behaviour are still present and mutually incompatible drives and emotions can be simultaneously aroused" (Tanner, 1955). Of the difficulties facing the adolescent many arise from the artificial prolongation of childhood. For many young people it may be 12 years or more after they become sexually mature before they achieve adult status. In this time the young people should be making their final bid for independence; and it is now that flaws in character-structure and deficiencies in their relationships with parents will be revealed. The quest for independence may become rebellion, rebellion delinquency. On the other hand, the fear of independence may shade into neuroticism, neurosis into mental illness. Cf. Stott (1950) and Marris (1958).

POSITION IN FAMILY AND SIBLING RIVALRY

Probably one of the greatest normal stresses that any child has to bear is the coming of the next one. Maternal love may be infinite but time is not: individual care and attention given to one child is likely to mean time taken from the others. The one most likely to suffer is the one who has just been supplanted from his position as "the baby". If he is the first-born, his sufferings will be great. To him mother, father and baby have formed a complete family—a charmed circle now ruptured by the coming of the second child. This breaks into his fantasies of omnipotence, his fantasies of possessing the mother. He is likely to feel unwanted and rejected and the resentment that he harbours against his mother may be transferred throughout his life to all "mother figures". Just how it affects him will depend on the stage he has reached in the formation of conscience. If no conscience has developed, he will express openly all the anger that he feels. Should he have reached the stage where he has made some identification with his parents, he will find ways of punishing himself and incorporating self-punishment in his personality.

Nevertheless, the first child in the normal family has some compensations in that the parents tend to value him more than any other child. Sometimes, indeed, the charmed circle is so strong that the second child does not break into it. He may be regarded, and come to regard himself, as an outsider. In this case, the elder child may escape some of the sufferings of the rejected though, since early life fantasy counts for more than reality, both children

may suffer. A child in any position in the family may be or feel himself to be rejected, but sibling rivalry seems to be less distressing among the younger children of large families than it is for the first two.

CULTURAL DETERMINANTS OF PARENTAL ATTITUDES

This brief account of stresses to which almost every child is exposed is, perhaps, enough to show how difficult is the task undertaken by responsible parents in bringing up a child. However helpless they may feel, they are not entirely without equipment for the task. The mother brings to it her own maternal feelings and her memories of her own childhood and ways of behaving learnt from her own parents. Good feelings learnt from good parents in happy homes, are likely to perpetuate happiness down the generations. Bad feelings, unfortunately, perpetuate unhappiness. Even when a woman makes a conscious effort to be a better mother than her own was to her, she may be at a loss (as, for example, some women whose childhoods were spent in institutions) for lack of a model or, in moments of crisis, she may fall back on her bad model.

The environment also provides help and support. The time-honoured and accepted ways of dealing with all the more important events in life provide a secure framework for members of a primitive society (Benedict, 1935). In our more complex and varied society there is not the same degree of security—the price of private judgment may be loss of confidence—but even the most individualistic have the support of some cultural norms. Our society is not so much composed of individuals as of small groups, each of which may have its own culture pattern. Though never as uniform or rigid in structure as a typical primitive society, there seem to be forces at work in them making for stereotyped values as well as patterns of behaviour. (The reasons for this tendency deserve more study than they have so far received.)

Anthropologists find that among primitive peoples, all the members of any given society tend to be similar in personality structure. This similarity is thought to be associated with the similarity of the child-rearing practices employed by all the families of the society. Kardiner (1945) describes several primitive communities in each of which a uniformity of child-rearing techniques goes with a uniformity in personality configuration. West (in Kardiner, 1945) goes further. He finds the same association between personality structure and child-rearing practices in Plainville—“a living, rural, American community”. In his view, the prevailing personality structure of Plainville makes for unhappiness, and social strife. This he attributes to the uniform culture pattern of Plainville which, in the up-bringing of children “places a high value on cleanliness and early sphincter training, while it denies the importance or even the existence of activities and feelings connected with sex”. Among the consequences are bowel neurosis, frigidity, impotence and other psychosomatic disorders. In addition, “constellations formed in one

domain do not remain localized; they spread over to other activities of the individual... There is a connection between distortions in these primitive activities and such things as the need of the less [socially] successful to create scapegoats and the need of the more successful continually to augment their margin of security... This society never loses its sense of inferiority. Those whose activity is blocked in the sexual and self-assertive spheres carry a heavy load of self-condemnation which is generally projected in the form of hatred of those who achieve the approved goal of success." Plainville, in West's view, is a sick society and the sickness is due to early experiences which are culturally determined.

No doubt, this is an extreme case, but possibly only the leading species of a large genus. Most civilized communities tend to have an obsessional culture. Our own, among them, is a highly structured society in which objects and possessions are valued and in which such things as order, discipline, conscientiousness and cleanliness are regarded as important. Feelings tend to be under-valued and feelings about sex tend to be denied in the way West describes, cf. e.g., the Newsons' description of maternal attitudes in Nottingham, Newson, H. E. (1963). The neuroses and personality disorders found in Plainville are common and, thus, it is likely that this cultural uniformity plays its part in bringing about mental disorders and distortions of personality.

Our society may contain many fairly homogeneous groups in the same way that the United States contains Plainville but, with occasional exceptions, there is a good deal of movement between groups (whether, geographical, "racial", ideological or socio-economic) and there is still some (though possibly diminishing) tolerance of individual idiosyncrasy. Hence, in trying to account for psychosocial disorders we have to look not only to the culture pattern of the group but also to deviations of individuals and families from the cultural norm. There are some respects in which all young children, if they are to remain alive, must have similar experiences—they must be housed, fed, kept warm and given medical attention when they are ill—but even in these respects there is a social gradient such that in the lower social classes not only the mortality but also the morbidity of children is greater than those with more satisfactory economic and material conditions.

Psychiatrists and social workers who pay attention to human motivation and the emotional causes of mental disorders have been inclined to the view that the socially unsuccessful are those whose emotional problems are the most severe. There is in this view something akin to the nineteenth century belief that poverty was the individual's own fault. Lady Wootton (Wootton, 1959)—has criticized this extreme view and pointed out that there are at least as many social and economic causes of psychological trouble as psychological causes of social problems.

A family at the lower end of the socio-economic scale may, for instance, go through a period of poverty when there are several young children and

only one bread-winner. Rowntree, as a result of his comprehensive investigation in York in 1935, wrote "the greatest period of economic stress in a working-man's life is when he has young children to support... working-class people are liable to be in poverty during childhood and women are liable to be in poverty during the time that they are bearing children" (Rowntree, 1941). In the 30 years that have passed since this study was made, poverty has become less common and less severe, but as Carr-Saunders has shown (Carr-Saunders, 1958) economic fluctuations still occur in the course of a life-time and still impose hardships just at the time when there is the greatest need for security. It must be remembered, too, that anyone aged 30 or over—that is, a considerable proportion of the parents of the school-children of to-day—will have been affected by the sufferings of his early life in the 1930s. These painful experiences are bound to be revived even by mild recurrences of economic stringency.

Possibly, too, this fear of poverty based on childhood experience is one of the reasons why older people in our society so greatly value possessions and material objects. Their attempt to inculcate these values in the young may have a variety of unfortunate consequences in the form of conflicts between the generations and lead to adolescent rebelliousness. Fear of poverty may also be one reason why women seek work outside the home—another source for stress for young children (Yudkin and Holmes, 1963).

Few families will escape such stresses. Some, for instance are victims of poor housing and over-crowding. On the London County Council's (fairly generous) standard about one quarter of London families are over-crowded. And many who are satisfactorily housed have been over-crowded in the past. Crucial years in their early married lives and in their children's infancy are spent in circumstances which lead all too frequently to a deterioration of relationships.

ILLNESS IN THE PARENTS

A family can be regarded as normal when one of the parents suffers from ill-health, but illness that seriously interferes with the father's earning capacity or the mother's care of the home transforms a normal family into one that is abnormal. The effect of parental illness on the children is due, in part, to the resulting poverty and neglect: in part, to separation of children from their parents, but probably even more to the anxiety into which they are plunged. The reality of their situation is often bad enough, but their fantasies of guilt and self-reproach make it a great deal worse.

The effects on children of parental illness or handicap have not been sufficiently studied. In all separation of child from parent the child's terror is that he will not see his parent again. If the parent has gone to hospital, this terror must be intensified, whatever the nature of the illness and whatever the prognosis. A seriously ill patient at home also overshadows the household in an alarming way.

If a young child does not get an adequate response from his mother, he will make desperate efforts which may turn into aggression in which all control is lost. Here there may be the sequence of protest, depression and apathy that, as Bowlby points out, occurs in mourning. Very similar patterns of behaviour are seen in children whose mothers are suffering from chronic physical illness, handicaps (notably, deafness) or mental illness, patterns which differ only in degree from those shown by children of affectionless or narcissitic mothers (Stott, 1950). A further development, when the mother's disability is long-continued, is the tendency of the child to identify himself with her and so become incapable of responsiveness (Brown, 1961, and Bowlby, 1960).

Traumatic in a different way are sudden illnesses when, e.g., the parent is taken away while the child is asleep or out of the house, and even worse when the child is a witness of a disaster such as an accident, fit, heart attack or haemorrhage. Worst of all, when one parent attacks and injures the other.

The fact of death of a loved person, however tragic it may be, is for most people less intolerable than the prolonged fear of his death. There are, however, exceptions as, for example, when the child witnesses a traumatic death or is the one to come unexpectedly upon the body.

Elsie S., a girl aged 10, had as parents a diabetic and nearly blind mother and a father suffering from a disfiguring cancer of the face. He was sent home for the terminal months of his illness and during this time a great deal of his care fell to Elsie. The father's appearance, language and, above all, smell were most offensive. Elsie showed many signs of strain but, when he died of a haemorrhage as Elsie was trying to wash him, she became so disturbed that she had to be admitted to a psychiatric hospital.

Christopher, aged 8, was the only child of a widow. Their bungalow was the last of a group, relatively isolated, but passed every night by men on their homeward journey from a public-house. They quarrelled and sometimes fought, terrifying Christopher as they passed his window. His main terror was however about his mother's health. She had "heart attacks" in which she needed the help of Christopher's grandmother. On these occasions Christopher had to fetch the grandmother and was always afraid that they would return to find his mother dead.

When finally the mother was admitted to a hospital for the chronic sick, the child developed a severe depressive illness.

VICISSITUDES OF THE NORMAL FAMILY AND CHILDREN'S REACTIONS TO THEM

In those families—and they are the majority—who escape the sufferings imposed by poverty, bad material conditions, or ill-health, at least two hazards remain; either the family's beliefs, attitudes or patterns of behaviour are such as to interfere with normal development of personality, or the child at a critical period of his life is separated from one or both of his parents.

These are the two causes of trouble most often brought to the notice of the child psychiatrist. His main concern is with the way in which adverse experiences in childhood lead to distortions of personality. But his problems are not presented to him in these terms. Of the children sent to him, some two fifths are described as "difficult"—i.e. behaving in ways indicative of aggression (Holman, 1953), perhaps another one fifth will have educational difficulties—usually failure to make progress at the rate to be expected from estimates of their intelligence. About one fifth, too, will be suffering from psycho-somatic or hysterical disorders. Of the remainder perhaps a half show such problems as fears, anxiety states, or depression, leaving a miscellaneous group comprising a great variety of problems (and some of them severe) but none occurring in more than a few cases.†

Among school children there is little difference between one age and another in the proportion falling into each class. Among children under school age difficult or aggressive behaviour is the only common reason for referral.

Apart from some of the uncommon conditions in the "miscellaneous" group, these abnormalities of behaviour can be regarded as mechanisms brought into use when the child's security is threatened. Nearly half might be called "pure protest behaviour", whereas in the rest there is a considerable element of self-punishment.

Aggressive behaviour is particularly common in children who have been separated from one or both parents at an early age (Holman, 1953) and is seldom found when the children come from homes that are not only intact but also (in the judgment of the child guidance clinic staff) satisfactory. Strong though the evidence is that those who protest most have most to protest about, there is not a one-to-one correspondence between the child's behaviour and the type of home he comes from. In some children aggressive behaviour is due in part, if not entirely, to genetically or prenatally determined organic lesions or to illness or accident. Some children, there is little doubt, are more robust than the average in resisting adversity, and some, as sometimes comes to light in the course of treatment, have had unsuspected help in the form of a warm human relationship at a critical time. The age, too, at which adversity is experienced, or first experienced is of great importance. Young children are more easily damaged and their protests are more undisguised.

Difficult behaviour of all sorts is often attributed to the "broken home", but a break when a child is in his teens is very different in its effects from a break when he is an infant. The reasons for the break also have a bearing on its influence on the child: creditable breaks (e.g., when the absent parent is serving his country overseas, or has died in its service, or even if he is in hospital with a reputable illness) are less damaging in their effects than breaks

† These classes, and the (very approximate) proportions in each, come from figures collected over several years in the Ealing Child Guidance Clinic. A different picture might be obtained from other, particularly hospital, clinics.

so shameful that the absent one may not be mentioned (in prison, in mental hospital, starting a new family far away or, worse still, close at hand). A third important consideration is economic: the child of a middle-class family will suffer from the loss of a parent, but the working class child who loses a parent may lose everything (Wynn, 1964).

The evidence for the harmful effects on personality development of separation of a young child from both parents or from the mother was fully summarized by Bowlby (Bowlby, 1951) and in the past 13 years much has been added to the literature by Bowlby and others. As this work is now classical, it need not be dealt with in further detail but two comments are not, perhaps, out of place:

1. It is often assumed that the child separated from his parents (or mother) is deprived of "normal" home care (Curtis Report, 1946). Apart, however, from special cases such as long-term stay in hospital (when the separation is by no means the only disturbing factor) and, e.g., war-time evacuation, it is not very common for a young child to experience separation from a home that would provide a "satisfactory" up-bringing. The children in the care of local authorities or of voluntary organizations come, for the most part, either from families where one or both parents are missing (five sixths in 1956) (Grey, Parr, 1957) or from intact families that are very much below the general level in providing for either the material or the emotional needs of their children.

2. Separation from the father was little considered by Bowlby or by those on whose studies he drew. Since 1951 the effects of paternal deprivation have been given more attention (Andry, 1960, Ainsworth, Andry *et al.*, 1962, Holman, 1953, McCord *et al.*, 1962). Three recent publications (Marris, 1958, Wimperis, 1960 and Wynn, 1964) have pointed out that children without a father, more particularly those who are without one from an early age, suffer not only from the lack of a relationship and of a figure with whom to identify themselves, but also from the most gross financial and material deprivation. And not only this. If, as often happens, the mother is forced to become the breadwinner, they are also, at least partially, deprived of a mother. And from this very abnormal social environment a disproportionately large number are separated for long periods from their family by being "taken into care".†

† Wynn gives the following table:

Whereabouts of Parents of Children in Care in 1956

Both parents with child	16.4 per cent
Child with father (mother missing or dead)	20.2 per cent
Child with mother (father missing or dead)	25.9 per cent
Both parents missing	37.5 per cent
One or both parents missing or dead	83.6 per cent

INTACT HOMES

A greater variety of behaviour patterns and disorders of thought and feeling is found among children from homes that are "normal" as well as intact. These children have a more sheltered infancy, a better chance to identify themselves with parent figures and to form a conscience. No home can be perfect. There are few children who do not experience some demands that are too great for them, some frustrations which they cannot bear (or on the other hand, excessive indulgence and lack of stimulus to grow up) and to these they will react, each according to his fashion or according to the resources he can mobilize. Short-lived disturbances—unless unusually violent—are not the concern of the psychiatrist, but can be dealt with by "parents, teachers, family doctor or others in daily contact" (Underwood Report, 1955) with the children. The problems that come to the psychiatrist are serious and lasting in their effects on the well-being of the child or of those around him. When these occur, it is presumed by the psychiatrist that they are reactions to equally lasting and injurious stresses. What, then, are these stresses? First of all, it is a common-place but still important fact that many marriages—perhaps one third (Blacker, 1957)—are unhappy. But this only throws the problem further back: why are they unhappy? Some as we have seen, because of circumstances over which the individual has no control—accidents, incurable illness, for example. Rather more often, in our society, one partner may be worn down and lose hope and vitality because of cramped and over-crowded housing conditions. But many happy couples are in extremely poor material conditions. Here one of the main factors accounting for unhappiness must be neurosis or personality difficulties.

These of course are due to the couple's own experiences as infants or young children — experiences which have had lasting effects and which will affect the relationship between them and their own children. "When a woman becomes a mother, many of the same forces which bound her as an infant to her own mother are mobilized afresh to bind her as a mother to her own infant" (Benedek, 1956, quoted by Bowlby, 1958). We now know, too, that we could say very much the same of the man who becomes a father. In just the same way as the mother, he carries over into the relationship with his child patterns of feeling and behaving that were laid down in his own childhood.

Thus when one or both parents are neurotic, it is not only that the child is brought up in contact with mental sickness, but that the neurosis compels its victim to involve his child in it. And the more severe the mental disorder, the greater the involvement.

Mental disorders are so numerous and take so many forms that it would be beyond the scope of this paper to give anything approaching an exhaustive account of them and the way in which mentally disturbed parents affect their children. It is difficult, too, to say just what proportion of the adult population is suffering from neurosis or other mental disorders. There

seems to be agreement on a figure of about one third being so affected and this figure is in accord with Blacker's estimate of precarious marriages.

As Ackerman (Ackerman, 1956 and 1961) and other workers have stressed, the family is, for many purposes, a unit in which each member is assigned his rôle both in conflicts within the family and in those between the family and the outside world. Neurotic adults have many ways of doing this, and so, involving their children in their own neurotic patterns. Two at opposite ends of the spectrum may be mentioned. At one extreme is what may be called the collusive type, where, for instance, there is parental approval (conscious or unconscious) or even parental choice of an anti-social rôle for the child. A similar collusion may be present in a hypochondriacal family. Here the child is taught how to escape into illness by the parents who may, in effect, have selected this particular pathological mechanism for him.

In some families the parents are socially isolated, abnormally dependent and immature. Often the demands such parents make on their children are exceptionally light. They permit their children a long infancy sheltered from social pressure. It is only when pressure comes from the outside world that these children begin to suffer. This is the story in some cases of school phobia—as in the case of George, aged $12\frac{1}{2}$. This boy lived, as if on an island, in a cottage with his father, mother, paternal grandfather and two unmarried uncles none of whom had any contact with the outside world. (The mother, for instance, could not think of anyone outside the family, apart from two delivery men, to whom she had spoken in the past three months.)

George had seemed a shy, quiet, passive child in his primary school, but had given no trouble. He managed his first term in the secondary school, but, after an absence due to illness at the beginning of the second term, developed all the symptoms of a severe anxiety state and was unable to go back to school. None of the five adults could see any reason why George should go back to school, even when there were no further signs of anxiety. For $2\frac{1}{2}$ years they completely out-witted the not inconsiderable forces marshalled against them.

At the other extreme, the rôle is that of scapegoat who is rejected. That a parent should reject his child is, at first sight, hard to believe. However, it may not be difficult to sympathize with the father who has killed his hopelessly deformed child, or to understand the feelings of the man who does not believe that the child is his. That a mother should recoil in horror from her seriously handicapped child is also understandable, but that she should feel implacably hostile to a perfectly normal child is less easy to understand. It is only to be explained in terms of her fantasies. In these the foetus may be regarded as an unclean foreign body forced upon her entirely against her will. If it becomes a living child, then he is seen as a monster, a destroyer, an evil thing. To some neurotic women men are contaminated, others believe

that all women are defiled. "I never thought anything so dreadful could happen to me" said one mother, when told that she had a beautiful little daughter and she continued to believe that she had given birth to an abomination. Seven years later she was sent to a mental hospital and the child, deeply disturbed, went to a school for maladjusted children.

A surprising number of parents express their rejection quite openly; others reveal it in a more indirect fashion or the evidence comes from the family doctor, teacher, health visitor or other social worker. The child of rejecting parents tends to find just the behaviour that is most intolerable to the parent(s). If a mother is obsessively clean, her rejected child may be encopretic; if she is houseproud, he is untidy or destructive; the rigid rejecting bank clerk-churchwarden tends to be the father of the thief, the socially ambitious are shamed by the obscene language their rejected child may use to neighbours and visitors. One 4-year old girl whose refusal of food was becoming alarming explained it by saying, "Well, my mother, my grandmother and my aunt talk of nothing but food all day long". It seems that when the parents reject the child, he will reject what they have most wished to inculcate. This tendency is particularly marked in young children who have not yet developed a conscience, but what begins in infancy may persist throughout childhood or reappear in adolescence—often in a particularly intractable form which damages the young person as much as the parent against whom it is directed.

Maureen, aged 14, had appeared before the Juvenile Court, charged with being beyond the control of her parents. Six months later, having broken her probation, she was committed to the care of the County Council.

Her father, a lorry driver who was away from home a great deal, had never wanted children and had been "furious" when the mother became pregnant with *Maureen*.

He had taken little interest in the child, grudged money for her clothes and even for her food. The parents quarrelled incessantly about money. When *Maureen* started school, the mother got herself a full-time job. She made rather casual arrangements for a neighbour to look after *Maureen* in the afternoons, but quite often the child was left in the street for 2 hours or more after school.

Maureen was a healthy child, but was "born difficult". She had not been easy to feed as a baby and remained a faddy eater. There were battles over toilet-training and even as a toddler she defied and disobeyed her parents and "used shocking language." The father punished her severely and she retaliated by stealing from him.

She was a girl of high intelligence who did well in her primary school and got a grammar school place.

At the end of *Maureen's* first year she was asked to leave the grammar school, because the girls complained of her obscene language and the stories of her sexual exploits. She was transferred to another grammar school where,

very soon, there were similar complaints. She forestalled expulsion by disappearing from the district.

Eventually, she was picked up by the police in the early hours of the morning in a café of dubious reputation in "undesirable company".

She was then admitted to a Children's Home and was found to be about 4 months pregnant.

A little after this time, her father died. The mother then openly lived with a man with whom she had had a long-standing "friendship" during her husband's lifetime.

The warden of the Home describes this girl as follows: "Maureen's goal in life is what she calls 'kicks'. She must always be after excitement. She can accept intellectually that drug taking, sexual intercourse, keeping company with Borstal boys or others temporarily out of prison are not desirable ways of life for a girl of fourteen; but she freely admits that, given a chance, she would do just the same again. Her pregnancy does not worry her in the slightest. She does not fear pain, likes getting jabs at the dentist, finds pain just another kick.

She is at once utterly dishonest and honest. She is an extremely accomplished liar and yet, can be utterly honest about her own lack of belief in the normally accepted virtues. She is of an extremely affectionate and demonstrative nature, hugging, kissing, lying in close contact with other children. She excites them by her apparent maturity coupled with her 'wicked' life.

The mother is very voluble. She complains endlessly. She brings her man friend with her and states openly in his presence that because of her religion she would never have agreed to a divorce, though she had long preferred this friend to her late husband. At the same time, she is bitter about the fact that the council has not arranged for Maureen to have an abortion.

Maureen claims that she has taken every drug. She speaks knowledgeably of heroin at a Notting Hill night club and says she took it over a period of eight months. (This is confirmed by others.) She has a lot of money for cigarettes, pep pills, etc., and her mother says the money did not come from her. Maureen says her mother does give it to her and states that she never steals. As she also states that she never does things we know she does, it is not easy to decide.

Maureen says that she does not want to go back to live with her mother and would like to get away from her old friends and go to a technical college to learn languages. While telling us this, she is writing and ringing up her friends telling them that once her baby is born, she will be back and asking them to procure a stock of drugs for her return. She expects the baby to be adopted."

However, she was allowed a week-end at home and on her return was no longer pregnant. The mother told the warden that she (mother) got Maureen "two pills for £16."

This is the very picture of adolescent rebellion. As soon as this girl knows of the existence of a rule, she breaks it and seems to wish to injure all adults.

With a rejecting father, an ambivalent mother whose moral standards are, to say the least, muddled, what is to be expected?

Not all rejection is so complete or so open. Among middle-class families and those who aspire to middle-class status where parents are ambitious for their children, rejecting parents tend to be "over-demanding". Among their children school failure (failure to work at a rate consistent with intelligence) is unusually common. Often, too, the child combines with school failure some psycho-somatic or hysterical disorder: *Andrew*, the 9-year old son of ambitious Polish parents, a boy of average intelligence, is 3¹/₂ years retarded in school work. He misses up to a third of each term with asthmatic attacks. Nevertheless, his parents continue to urge him to "make an effort" to get a grammar school place and for the last year have been having him coached twice a week. Even if he were working to capacity, it is unlikely that he would get a grammar school place, but his parents will not believe this. He is a wretchedly unhappy, friendless child, retreating further and further into illness and, in all probability, into a life of invalidism.

On the other hand, a child who is succeeding too well in fulfilling parental demands may have recourse to the mechanism of "conversion". *Brian*, also aged 9 and of rather less than average intelligence was sent to the child guidance clinic after he had had a number of fainting fits for which no organic reason was found. Although his attainments are actually about 2 years above his mental age, his parents regard him and he regards himself as a great failure. He is pushed, goaded to do homework and made to do lessons with his father. He has now found an escape in dizzy spells, headaches and faints.

Patricia, a girl of 6, was pushed by her parents not so much in the direction of academic success but towards social conformity. She was the "perfect child", always clean, tidy, obedient, well-behaved, when suddenly one day she took and spent on sweets all the money that was in her mother's handbag.

Over-protection, though often a genuine excess of normal parental solicitude, is at times a way of expressing rejection. *Billy*, a highly intelligent 7-year old, came to the clinic because of two problems: he was terrified of dogs and he was insufferably rude. To the kindest enquiries about his health, his reply was apt to be unprintable. Neighbours were tending to ostracize the family and would not let their children play with Billy. It appeared that the father was very strict with Billy and very frightened for the child's safety. He would not let Billy climb trees, go swimming, ride a bicycle, have any pet or even cross the quiet cul-de-sac in which they lived. He reinforced all his prohibitions with stories of the dreadful fate of those who disregarded them—tree climbers had broken their necks, swimmers had been drowned, cyclists ended up having legs amputated and dog-lovers died of rabies. After a long period of treatment Billy's father admitted to his resentment of Billy, almost amounting to hatred, and was able to see that his "overprotection" was a form of sadism.

The case of *David*, a child of $6\frac{1}{2}$, of rather more than average intelligence, shows the way in which a child can become involved in the neurotic pattern of his rejecting mother and at the same time react in a way that defeats her conscious wishes.

David is said by his mother to have been much wanted but, from the age of 18 months, he has presented a feeding problem, eating so little that, according to his mother, from the age of 2 to the age of 5, he gained no weight. From the age of 2 he has suffered from severe constipation lasting for many days but alternating with bouts of incontinence and soiling. The mother describes occasions when she has left him on his pot for 2 or 3 hours only to have him defaecate copiously on the carpet immediately afterwards. He has been terrified of enemas administered in a brutal and frightening way. Recently he has become constipated again. The mother says she beats him to make him pass a motion. All her handling of him has been aggressive. When he was 3 months old she found that "life was revolving around him" and determined to stop it.

She herself has a history of gastro-intestinal disorders in her own infancy and childhood. She describes herself as a "cold fish", is sexually frigid, makes no friends and is glad that her husband is on the night shift for 6 out of each 9 weeks. She was ill throughout the pregnancy, had a very difficult labour and, although David was a little under average birth weight, had a third degree tear. In conversations too lengthy to quote she revealed that she was completely preoccupied with bowel function.

A visit to the child guidance clinic seemed to have a good effect on both mother and child. David was free of both constipation and diarrhoea for the fortnight before their second visit. Mother said she felt much better "knowing that David was empty inside".

What these and other similar cases seem to show is that there is both a quantitative and a qualitative aspect to the child's reaction. He may be submissive or he may be rebellious. This will depend on many things, among them on whether he has had a chance to identify himself with his parents and begin to form a conscience or not. What seems to be much more completely determined by the parents is the sphere in which the reaction will occur—the rebellious child unerringly finding the way to "get under the parents' skin". Submissive children are very apt to take on a family pattern of social isolation, abnormal dependency and refusal to grow up. These children may have no need to protest, because the demands on them are unusually light. Other apparently submissive children, such as Brian and Patricia, eventually find the burden placed upon them too great. There may be an explosive protest but far more often a retreat into illness.

Reactions such as these distress the child and disturb those around him. Once learnt, they become more readily available each time there is a recurrence of stress. At the same time, they tend to call forth a repetition of the type of parental behaviour which provokes them and, thus, the vicious

circle becomes complete. In both parents and children each recurrence exacerbates guilt and anxiety which tend to intensify the pathological mechanisms. In this way, they become part of the child's definitive personality ready to be used in difficult relationships with his contemporaries or with the next generation.

SUMMARY

What has been attempted here is a brief account of a few of the environmental conditions influencing the development of personality. As is almost inevitable, attention has been focussed more on noxious than on favourable factors. Human up-bringing is made difficult and human personality is bound to suffer because society demands sacrifices of the developing child. The same social pressures impose on parents two mutually contradictory attitudes to the child—on the one hand loving and “nourishing”, on the other, educating and “disciplining”. The long period of childhood dependence, with its numerous critical periods of special vulnerability, magnifies the difficulty of the task and provides an almost infinite number of situations in which it is more likely that things will go wrong than that they will go right.

Some of these situations and some aggravating factors are described and some of the ways in which children of different ages react to stress.

REFERENCES

- ACKERMAN, N. W. *et al.* (1959) *The Psycho-dynamics of Family Life*. New York, Basic Books.
- ACKERMAN, N. W. *et al.* (1961) Exploring the Base for Family Therapy. New York, Papers from the M. Robert Gomberg Memorial Conference Family Service Association of America.
- AINSWORTH *et al.* (1962) Deprivation of Maternal Care. Geneva, W.H.O. Public Health Papers.
- ANDRY, R. G. (1960) *Delinquency and Parental Pathology*. London, Methuen.
- BENEDEK, T. Adaptation to reality in early infancy. *Psycho-Anal. Quart.* 7, 200–215.
- BENEDICT, R. H. (1935) *Patterns of Culture*. London, Routledge.
- BLACKER, C. P. (1958) Disruption of marriage. *Lancet* i, 578–581.
- BOWLBY, J. (1951) *Maternal Care and Mental Health*. Geneva, W.H.O. Series 2.
- BOWLBY, J. (1960) Grief and mourning in infancy and early childhood. *Psycho-Anal. Study of the Child.* xv, 9–52.
- BOWLBY, J. The nature of the child's tie to his mother. *Internat. J. of Psycho-Anal.*, xxxix, 1–24.
- BROWN, W. F. Depression and childhood bereavement. *J. Ment. Sci.*, 107, 754–777.
- CARR-SAUNDERS *et al.* (1958) *A Survey of Social Conditions in England and Wales*. Oxford, Clarendon Press.
- DUNHAM, H. W. (1964) Schizophrenia in two urban communities. *Proc. 1st Internat. Conf. of Soc. Psychiat.*
- Ministry of Education (1955) *Report of Committee on Maladjustment*. London (Underwood Committee).
- GORER, G. Themes in Japanese culture. *Trans. N.Y. Acad. of Sciences*, Series II, v, 106–124.

- GREGORY, I. Studies of parental deprivation in psychiatric patients. *Am. J. Psychiat.* **115**, 432, 442.
- HOLMAN, P. Maladjustment in children. *J. Ment. Sci.* **99**, 417, 654-688.
- Home Office (1946) *Report of Committee on Children deprived of Normal Home Care*. London (Curtis Committee).
- KARDINER, A. (1945) *The Psychological Frontiers of Society*. New York, Columbia Univ. Press.
- MARRIS, P. (1958) Widows and their Families. London, Report Inst. of Community Studies, 3 Reports.
- MORRISON, S. L. (1959) Schizophrenia and social class. *J. Ment. Sci.* **105**, 438, 999-1011.
- NEWSON, E. (1963) *Infant Care in an Urban Community*. London, Allen & Unwin.
- ROWNTREE, S. (1941) *Poverty and Progress*. London, Longman Green.
- STOTT, D. H. (1950) *Delinquency and Human Nature*. Dunfermline, Carnegie United Kingdom Trust.
- TANNER, J. M. (1955) *Growth at Adolescence*. Oxford, Blackwell.
- WIMPERIS, V. (1960) *The Unmarried Mother and her Child*. London. Ed. C. Whitting (Sir Halley Stewart Trust).
- WOOTTON, B., SEAL, V. G., and CHAMBERS, R. (1959) *Social Science and Social Pathology*. London, Allen & Unwin.
- WYNN, M. (1964) *Fatherless Families*. London, Michael Joseph.
- YUDKIN, S., and HOLMES, A. (1963) *Children of Working Mothers*. London, Council for children's welfare, Michael Joseph.

CHAPTER 3

Family Relationships, Fathers, and the Law

by R. G. ANDRY

THIS chapter will deal with some of the complexities in family relationships and with the role of the father, which has in recent years been overshadowed by the importance placed upon the mother's role in the family. These problems will be related to the law on divorce and to the custody of children.

It would be fair to assume, taking into account current literature on the subject, that workers in child-guidance clinics tend in the first instance to look for the origin of disturbances in children's behaviour to the pathogenic role of the mother in particular, and are inclined to overlook the role of the father, and indeed the whole subtle interrelationship of both parents in the family group. Historically speaking this has not always been so, for in the past there seems to have been a tendency to look for the origin of behavioral pathology either in the child himself (on the assumption that he was basically wicked, and also morally responsible), or in environmental factors other than those involving the direct parent-child relationship, usually placing the blame on poverty, malnutrition, poor housing, etc. as major contributory factors. The aetiological role of inheritance as an explanation of maladjustment has had its ups and downs, in the delinquency field. For instance from Lombroso's atavistic theory, via twin studies and others on inheritance and environment (Lynn and Gordon; Shields; Sears, Maccoby and Levin; Sears, Rau and Alpert), and aspects of Eysenck's (Eysenck a, b, c) bi-polar factor-analytical theory of introversion-extraversion and neuroticism via the works on drive reduction theory (Miller and Dollard; Hebb) to Trasler's modification by learning (Trasler) partly based on Mowrer's learning theory (Mowrer). It seems rather interesting in age when people no longer believe in single as distinct from multiple causative factors, that the pathogenic parental role tends to be isolated and overstressed by comparison with genetic and other environmental factors. What seems even more curious is that to some extent since Freud, S. (Freud) and Freud, A. (Goldstein and Katz), and especially since Bowlby (Bowlby), the alleged damaging role of the mother in preference to that of the father or siblings is stressed as if these roles were stereotypically static rather than dynamics entities.

It is the intention in this chapter to look as dispassionately as possible at some of the arguments and evidence in favour of some of the theories mentioned, and in particular to relate such seemingly academic problems to the reality situation of the Law Courts. For instance, in divorce and children's custody cases, judges must decide in favour of a mother or a father either on the basis of their own experiences or prejudices, or on the basis of psychological knowledge. As long as psychiatrists and psychologists of various schools are still divided in this field, particularly with regard to the relative importance of the father versus the mother, judges can hardly be blamed for being sceptical of advice proffered by conflicting expert witnesses. For under current British law, barristers have every opportunity of using these disputes to further the interest of the particular parent, i.e. father or mother, who happens to be their client. The point at issue is whether this situation justifies the oft-haphazard methods which at present seem to be employed in courts where judges are inclined to fall back on their own common sense, or if under the influence of the modern maternal deprivation theory, are in danger of overlooking the importance of the father's role in view of the scarcity of information on this subject in the literature.

It is not intended in discussing these issues to offer a viewpoint hostile to the LOGICAL application of the maternal-deprivation theory, but rather to suggest that the maternal-deprivation theory in its PUREST form—without taking cognizance of paternal roles is so over simplified as to be of doubtful use as a theory for realistic court work. It is hoped by bringing out the theoretical points of dispute to enable judges, who have in the final instance to find for one parent or the other in the best interest of the child, to base their findings on the results of current psychological knowledge. It is also intended in this chapter to look into the manner in which most existing courts are currently conducted and to suggest possible modifications based on psychological and psychiatric findings in order to ensure that the distress suffered by a child involved in a disputed custody case will be minimized. The first part of this chapter will deal with the theoretical issues involved and the second with the practical and legal issues.

A. CRITICAL EXAMINATION OF THE "MATERNAL-DEPRIVATION THEORY" WITH PARTICULAR REFERENCE TO THE ROLE OF THE FATHER IN THE FAMILY

Elsewhere the writer (Andry a, b) has drawn attention to the apparent oversimplification of the maternal-deprivation theory in the light of investigations made into the family-patterns of emotionally disturbed delinquents with behavioural disorders which emphasize the negative role played by the fathers in the family relationship rather than offering evidence of pure maternal-deprivation. It would perhaps be of relevance here to define in simple terms what is meant by the maternal-deprivation theory:

The original maternal-deprivation theory (which is closely connected with John Bowlby's stimulating and original work on 44 juvenile thieves and his book on the subject of maternal deprivation) seemed to imply:

- (a) that a child's physical separation from his mother during the critical stages of his life between 6 months through 3 years up to about 6 years, may have more or less damaging effects on him for the rest of his life;
- (b) that even where no physical separation has occurred, but faulty psychological mother-child relationships exists, then psychological damage to the child may ensue;
- (c) that a great deal of these damaging effects depend on the intensity and frequency and quality of the deprivation between mother and child, which is ameliorable, to some extent at least, by surrogate-mother figures (including nannies and fathers);
- (d) that whilst it is not clear whether such essential child-mother bonds are mainly instinctive, the evidence in favour of this theory is fairly strong, particularly in view of the works of ethologists, like Tinbergen, Lorenz, Thorp and others, and animal experimental psychologists, especially Harlow.

It is not the purpose of the writer to disagree with all aspects of the original and subsequently modified maternal-deprivation theory, but to emphasize the following points, which unless taken into account could detract considerably from the efficacy of the maternal-deprivation theory as a whole:

- (i) the theory, though useful in some aspects, throws far too much emphasis on the two-way relationship between mother and child and tends to overlook the fact that a child has from the beginning of his life concomitant, multiple relationships between himself, his mother, his father, and his siblings (and often other close relatives), and that a disturbed or interrupted relationship between himself and his father (and/or siblings) may, under many conditions, be just as harmful as a disturbed or interrupted relationship between himself and his mother.
- (ii) the maternal-deprivation theory, as a psychological model, is in danger of being neither as flexible nor as comprehensive as other psychological models which are gathered together under the general generic name of personality theory. The latter emphasises an organism's behaviour less in terms of a single variable (e.g. maternal-child relationships) but in terms of very many inter-related environmental and inherited factors (Vernon; Miller and Dollard).
- (iii) the maternal-deprivation theory is in danger of becoming an oversimplified concept for it is often used not only where it applies, but as a general diagnosis for a much more complex combination of causative factors. For instance, irrespective of whether a maternal deprivation factor is present it can be seen that child-rearing practices which differ subtly from family to family (e.g., some families are more tough or tender-

minded than others, as Eysenck and others have pointed out); practices from person to person within families, (some mothers are more tough-minded than others, and this of course applies to the different qualities of fathers); practices differ over a period of time according to the beliefs or habits that a parent has at a particular stage in his life as distinct from his or her previous or future behavioural and attitude stages (for instance young and vigorous parents may get more relaxed or rigid as they grow older, as Kagan (Kagan) Mussen (Mussen) and others have shown); practices differ from sub-culture to sub-culture (working-class child-rearing patterns differ considerably from those of the middle-class and include differences in speech-strategy patterns as Bernstein (Bernstein) and others have shown; and practices differ from country to country (Ainsworth, Andry, Mead *et al.*)—i.e., from culture to culture. For instance, Anglo-Saxon parents are said to be more aloof than those of effervescent Latin countries, and European child-rearing techniques, are by no means always similar (and certainly are different to those of Polenesian, African, Indian, etc., as M. Mead and others have shown).

- (iv) the maternal-deprivation theory seems, paradoxically enough to be at the same time both too much and too little linked with the genetic component of the entwined theory of nature and nurture. Recently, maternal deprivation theorists (Bowlby and Ainsworth) seem to imply that mother-child bonds are so primary and instinctive as to take precedence, when the child is very young, over all others, including father-child bonds. This seems arguable both in terms of cultural and cross-cultural observations and on theoretical grounds of multiple as distinct from single causation factor theory (Yarrow). The still unresolved question is this: is a child instinctively i.e. genetically bound more to his mother than to his father (independent of such factors as the 9 months' gestation attachments, etc.,) or is such an attachment mainly environmentally enduced, due to the fact that fathers do not bear children and that the majority of fathers, especially in most current Western cultures, are away from home working. Thus, in the West, mother-child relationships have a greater chance to develop closely through feeding and other pleasure-goal reinforcements. But what of the fathers who can take a close part in the child-rearing processes—do they not have as good a chance of establishing an equally close relationship with the child? (conclusive evidence either way is sadly lacking in the current literature on this subject.) Conversely, many maternal-deprivation theorists do not seem to place sufficient emphasis on the genetic components in the child-parent relationship structure in so far as the relationship between a child and his parent need not primarily be one of pure environmental child-mother involvement but may also be based on such "accidental" non-environmental factors as the sex of the

child, or whether she or he is an introvert or an extravert adequately matched vis-à-vis the mother's introversion or extraversion. Temperament is very important—he may share with one parent genetically a greater number of characteristics than with the other, or with one sibling rather than with the others. Similarity in temperament may make for better rapport between a child and some members of the family as distinct from others and not necessarily mainly between the child and his mother. Conversely the mother or other members of the family may find it difficult to relate deeply and easily to a particular child if his innate temperament is basically different from her own.

Briefly, criticism of the maternal deprivation theory rests on the findings of a number of studies made during the last 10 years, in which the following points have been made by a series of research workers (Ainsworth, Andry *et al.* Mead *et al.*,) not all of whom agree with each other.

1. Deprived and non-deprived children were matched and it was found that in a high percentage of cases no lasting effect was in evidence among the deprived group, and that among the small percentage of those who had been affected, research workers tended to blame the inadequacy of poor types of orphanages as mother substitutes, more than the maternal deprivation factor.
2. Margaret Mead has observed that in some tribes, children are mothered in the same proportion by several women with no ill effects.
3. Some research workers claimed that the genetic differences for instance among delinquents are not taken sufficiently into account.
4. The writer (Andry (a)) in his study among 80 delinquents and a control (which also included both parents) found through the medium of a clinical questionnaire, that apparently only a very small percentage of children came from maternally-deprived homes, but on the contrary found that delinquents tended to express feelings of rejection from their father, whereas the normal control group tended to say that they felt loved equally by both parents. The apparent paternal neglect extended to inconsistent child-training and a lack of physical and psychological communication. On a sub-sample of thirty delinquents and an equivalent control, these findings were supported on the whole by the parents themselves. In contrast to the control group, a picture emerged not of maternal deprivation, but of faulty relationships within the family and particularly with the father.

Whilst no suggestion was made that such disturbed paternal relationships were the sole cause for deviant behaviour it seems plausible nevertheless, that the oft-neglected role of the father may have accounted for a great deal of the "variance", had the study been subjected to a full factor analytical study. (This in fact was done in a later study by the writer: "The Short-Term Prisoner", (Andry (c)) which tended to bear out the hypotheses with a slightly older population of delinquents.) In fairness to the maternal-

deprivation theorists (for instance Bowlby and Ainsworth), they have pointed out repeatedly that few people claimed the maternal deprivation factor as an irrevocable and necessary condition to maladjusted behaviour.

However, more recent publications show that the issue between maternal and non-maternal deprivation theorists is still far from being resolved owing to the differences of emphasis placed on the importance of the maternal-deprivation factor (Ainsworth, Andry *et al.*). Bowlby (B. Foss) shows in recent works that he is inclined to find further confirmation of his theory in animal ethology where some young animals appear to make their mother their instinctive and primary love-object. Similarly Ainsworth agrees that the "attachment" behaviour of a child for the mother is its first and most important emotional experience and that this radiates only later to other people. On the other hand, R. Schaffer (B. Foss) and (Schaffer) feels that this does not necessarily follow, a view borne out by Margaret Mead's cross cultural experiences among groups which do not share the Western approach to child rearing. She found among certain tribes which she investigated, that the children learn to get used to all sorts of parental figures. Concerning the impact and durability of "attachment" behaviour between mother and child, many maternal deprivation theorists have recently moved closer to the Tinbergen and Lorentz "imprinting" theory (Tinbergen and Lorentz) relating it to Tanner's work (Tanner and Inhelder). This is in the belief that humans, probably like chicks and other animals have the inborn capacity to form, at a crucial stage in infancy, a deep-seated attachment which lasts throughout a lifetime with any love-object figure, but usually the mother since she is more likely than anyone else to be around when the infant passes through the crucial imprinting stage. However, as Gewirtz (B. Foss) rightly points out, the theory of inborn "imprinting" seems to imply, perhaps erroneously, an all-or-none state, whereas, following normal learning theory, it is more probable that whilst special "stages of readiness" for learning may well exist, the phenomenon is closely linked with environmentally challenging conditions for the child. This has been pointed out by Piaget and his followers (B. Inhelder) in connection with the theory of developmental stages in psychological child growth. Further—a point often overlooked is that if pure inborn "imprinting" exists in the very young before they develop speech (which is by no means certain according to Gewirtz and others), then it does not follow as a necessary corollary that the effects of such a phenomenon cannot be offset to a very great extent through the later acquisition of language, with all the additional advantages that this implies with regard to the laws of learning and reinforcement, at the non-verbal as well as at the verbal level. The importance of this has recently been emphasized by Bernstein (*op. cit.*), though in a slightly different context. Further, it should be noted that if the imprinting theory for very young humans were valid, it could apply just as easily to the father, providing that such a father (or sibling or any other figure) happened to have

been exposed often enough to the young child at the "right" time of imprinting—a state of affairs which many a fatherly person may have achieved with a degree of success in the present age when parents interchange child-rearing roles with increased frequency. After all, many a modern father bottle-feeds and changes the infant, often without the mother's supervision.

Still on the controversial problems of nature versus nurture, P. Woolf's very careful study of the infant's smiling response seems to have important implication. Woolf (in B. Foss) found that the infant up to his first month responded to stimulation with smiles just as much to the male experimental psychiatrist as to the mother (even though he saw less of the child than did the mother) providing this was reinforced at a later stage by a reassuring high pitched voice. Suppose that the mother had faded out of the child's lifespace and that the father, or the male psychiatrist, or the nanny or grandmother had taken over, is it not possible to assume that the child would have been increasingly conditioned to the substitute to the extent that the comforting smiling response would eventually become associated with the substitute mother? The important factor here does not appear to be so much the instinctive bond between mother and child, but the extent and manner to which a child is exposed to a genuine love object, irrespective of sex. Admittedly, as it was generally the mother who, until recently, was entirely responsible for looking after the child, it seems but common sense to assume that under such conditions "separation anxiety" would be felt more by a child when separated from a mother than from the physically less involved father. However, in a modern age, where fathers have started to shed aspects of their over-emphasized masculine role, perhaps inherited from a nineteenth-century Anglo-Saxon culture, more in favour of the subtle parental role previously confined exclusively to women (father pushing the pram and bottle feeding the baby is no longer regarded as "sissy"), can it still be maintained that mother-child bonds are more "instinctive" than father-child bonds? Is it not more likely that such special bonds exist in a child sometimes with a father, sometimes with a mother or sometimes with both, depending on the occasion, due to a combination not only of "inherited compatibility" but also to environmentally learnt relationships regulated for instance by the amount a "modern and warm-hearted" father (without displaying a strong masculine protest in reverse) finds it easy to relate to his child? On the assumption that some such broad biological learning theory model (not necessarily in conflict with Freudian or Bowlby's theories) is more likely to explain and predict the complexity of most child-parent relationships than the restricting "pure" instinctive maternal deprivation theory, it is proposed here to examine some of the family, cultural, sub-cultural and institutional behaviour patterns in greater detail (it must be repeated that without doubt the maternal deprivation concept has its valuable though restricted use in explaining those special cases where it applies).

In trying to understand child development behaviour, it is desirable to keep in mind both the distinction between, and the interrelated effects of, "nature and nurture" during the pre-speech and post-speech stages, and also between "unconscious" conditioning and systematic learning in relation to these two stages within a very complex family setting.

To take some hypothetical examples first, before returning to some of the evidence, might it not be arguable that the maternal deprivation theory is far too specific and not sufficiently universal in accounting for some of the following family patterns? For instance, what would predictions be with reference to causality of behaviour in the case of a male child who practically since birth had been observed to be torpid, but who was born to a mother known to have been a hyperkinetic baby maintaining her characteristic excitable behaviour pattern in adult life (scoring high on any extraversion scale), as well as to a father who, on the other hand was known to have been torpid as a child like his male baby (scoring in adult life high on an introversion test). Taking into account close chromosome matching between child and father in terms of similarity in looks, colour of eyes, somatotype, etc., might it not be possible to predict that, other things being equal, such a child and such a father would probably operate on a similar "wave-length" of introversion, whereas this is probably less likely to apply in relation to the extraverted, hyperactive, often hysteroid, though possibly kind mother. Let it be assumed further that such a child, though obviously loved by his mother, is not only loved equally by his father (whose balanced introversion may make him more emotionally stable with a greater ability to communicate than is possible for his loving but hyperactive-extraverted mother whose communication capacity are assumed to be relatively weak by comparison) but is also cared for to a considerable extent by his sensitive and "modern" father who does his share of changing nappies and bottle feeding.

Might not such a child have built up very close mutual ties with the father through conditioning, long before proper learning, through speech communication, had been established, and as a result under situations of stress and deprivation begin to develop greater separation anxiety vis-à-vis the father rather than the mother (incidentally without such a relationship having to be in any way latently homosexual)? Further, is it not likely that once speech-communicating patterns are firmly established, as the child passes the toddling stage, that the non-verbal and verbal communication between father and child will further strengthen the bonds between them in view of the combination (which may be more prevalent in some than in others) of circumstances in their backgrounds and relationships?

Leaving learning theory aside, it is interesting to note that psychoanalytical theory is not so different in conceptualization when it comes to the point of pronouncing on developmental stages and socialization processes. Accordingly, boys near the age of five, are said to identify themselves, via

the resolution of the Oedipus complex, with their fathers and according to Melanie Klein (Klein) at an even earlier stage.

According to psychoanalytical theory this is assumed to be a continuous process and thought to be reflected in the boy's attempt to play "masculine" roles within a cultural milieu which arbitrarily describes the boundaries of "masculinity" (which incidentally are by no means static). For instance, what was once considered as non-masculine acts such as fathers looking after small babies, or men weeping or expressing their emotions in public, are beginning to become incorporated as aspects of normal masculine behaviour under appropriate circumstances. There were, of course, times, as there are indeed still cultures, where sex-role identification was held within the simplest of boundaries—for instance women's and older girls' primary role was to rear small children and attend to housewifely duties, and the men's role was to hunt and to train the older boys to become providers and huntsmen. However, it is doubtful whether this is an entirely "instinctive" pattern since under modern industrial conditions, a great deal of role interchangeability has taken place, encouraged perhaps by the gradual awakening to Freud's theory that the adoption of an overtly masculine role is not necessarily proof of masculinity. It should be noted that even in a non-literary society such as the Arapech, role interchangeability between mothers and fathers does not appear to be instinctive, but seems to be learnt, and because of its complementary nature apparently leads in the long run to great family harmony.

The existence of shifts in role perception both within a culture over a period of time, and between cultures, was recently emphasized by such workers as Bronfenbrenner and Devereux who in their American-German cross-cultural studies recognize five different patterns. (i) Patriarchal family structure; (ii) Patrocentric family structure; (iii) Egalitarian family structure; (iv) Matrocentric family structure; (v) Matriarchal family structure. With regard to the patriarchal family structure—this follows the traditional line in which the father is almost totally dominant in most spheres. This is almost the same in the patrocentric family, although there is not quite so clear a differentiation of roles. In the egalitarian family structure, the parental role is practically interchangeable. In the matriarchal family structure—and this applies, though to a lesser extent, in the matrocentric family, the mother is the more dominant of the two parents. The research showed that children from these different types of families behaved in very different ways. (For instance, Germans coming more from a patriarchal family structure and Americans from a matriarchal family structure, showed considerable variations within and between the two cultures.) Children from the egalitarian family structure were, in comparison to the others, more considerate, cheerful, liked by others, but had less sense of responsibility, were childish, wilful, anxious and resistant to authority, and their standard of achievement in school was fairly low. They were friendly well-adjusted children, emo-

tionally stable but with a moderately low level of achievement. Children from the patriarchal and patrocentric family structures were "leaders", hard-working with a high level of achievement, but they were indifferent to others and were inclined to be aggressive and sometimes hostile. They appeared to have gained a sense of dominating self-control at the expense of a sense of balanced adaptation. Children from the matriarchal and matrocentric family structure, whilst showing a high standard of achievement, ambition and responsibility were found to be submissive, inclined to be shy and without too much interest in the opposite sex. The research showed not only the differences in these family structures and the resultant behaviour of the children within cultures but also between cultures. The results confirm the findings of many other research workers in the child research field, namely, that "optimum" amounts of "mothering", "fathering" and punishment exist, and that too much or too little of any of these can be harmful but that some form of appropriate punishment not only helps character training, but relieves feelings of accumulated guilt and anxiety with a resultant positive effect.

Other cross-cultural studies bring out the complexities of child behaviour vis-à-vis parental relationships and inheritance factors, without being committed primarily to a plain maternal-deprivation theory model. For instance, Mussen, Young, Gaddini and Morante (Mussen (b)) studied boys of Italian descent in four different localities (Rome, Florence, Palermo and Boston) and found that in a variety of cultures, the son's behaviour, personality and attitudes are directly related to the degree of affection given to him by his father. Those with insufficient affection showed poor social adjustments, were tense, unhappy and insecure and were lacking in confidence as well as in affection towards their families and people outside the home. On the genetic side, Lynn and Gordon (Lynn and Gordon) suggest that American and English middle-class mothers are more punitive than those from the working classes. The authors suggest that the hereditary factors of extraversion in children accounts primarily for their aggressiveness, irrespective of whether the mothers have been punitive or not, and hence the hereditary factor is probably a more important determinant of aggression than the mother's punitive habits. This topic was also touched on, though in a different context, by Schaefer and Bell and by R. Shields (Shields) and Sears, Macoby, Eleanor and Levin (*op. cit.*) and D. H. Stott in Britain (Stott). He found that it is probably the underprivileged children who are more liable to congenital impairment which makes them more vulnerable to stress. That child-parent separation as such need not necessarily be disastrous was shown by Naess (Naess), by Hilda Lewis (Lewis), by A.D.B. and A. Clarke (Clarke (a) (b)) and D. Miller in his therapeutic experiment, as well as J. Howell (Howell (a) (b) (c) (d) (e)) the latter having investigated the therapeutic effects of child-parent separations (a theme which is especially familiar to juvenile court psychiatrists who recommend, on occasion, the institutionalization of children, though rarely at too early an age).

None of this bio-social viewpoint (in contrast to the idea of "instinctive maternal-deprivation" theory) is to deny the natural and still-powerful role of the mother regarding the rearing of very small infants. This is particularly relevant in the present pre-robot age when children are still born of women and are not yet conceived in test-tubes, even though gestation may one day take place outside the natural mother's uterus (recent experimental work with cows and other lower order mammals has shown that in the future this might be within the realm of possibility). But what of the future, when father's influence over his children's development may possibly increase as a result of automation? By then he will not only have more leisure time to stay at home, but also more time from the moment a child is born, or before, to devote himself, if he feels like it, to the welfare of his child in a manner that partly for economic and partly for psychological reasons, has been confined only to women up till now.

It is of course recognized that most average "normal" mothers have a special role to play in the bringing up of their newborn and for physiological reasons the closest relationships are fostered (reinforced by conditioning and later learning paradigms), between mother and child throughout pregnancy, and on parturition through breastfeeding, constant mother-baby contact well in excess of that of father. But what of "abnormal" mothers of which the psycho-analytical case-book histories abound and which may increase in an age which is undergoing vast social revolutions resulting in a high incidence of neurosis, of delinquency, of divorce—all consequences of personal and social maladjustment.

The importance of attitude formation and sex-linked role behaviour tends to be under-rated. Time plays an extremely important part in attitude formation as does the sex of the child and the personality pattern based on chromosomes and environmental factors as discussed earlier. A Mother's reciprocal attitude to anxiety and separation between herself and a daughter might under some circumstances, have a deeper impact than vis-à-vis a small son, who may already have started to emulate the cultural, stereotype tough-minded masculine role of the father's world, where for instance it is "not done" for little boys to cry when saying "good-bye" to their mothers (leaving aside for the moment arguments of the cross sex-linked oedipal situation or the relative permanence of any damage to the unconscious). Following learning theory here, observations of children in Israeli Kibbutz's have repeatedly shown that even very small children of either sex can become conditioned fairly quickly to separations probably from either parent depending on the cultural milieu and the skills of conditioning and displayed forms of mental weaning. However, if the mother, departing say for a stay in hospital, dramatizes the separation event, the damaging effects are likely to be greater than when the departure is underplayed and non-verbal distractive techniques are employed or if the child is old enough to understand verbal re-assurances. In more extreme cases,

it is quite possible for children to become conditioned to their separation-anxiety, (though the accumulation of some residual anxiety cannot be ruled out) as court visitors know who have observed the behaviour of children who in custody cases are being visited regularly by a parent of either sex. Providing these visits do not violate the findings of the basic laws of learning, i.e. recency, frequency, and effect—the children seem to adapt themselves to what initially was a traumatic event. For instance, the parents through trial and error must find the “right” intervals (bearing in mind the laws of frequency and recency, between visits), for over-visiting can have the opposite effect and produce anxiety in the child that sensible parents attempt to minimize. As stressed earlier, the enormous differences to be found in the child before and after speech has developed must not be overlooked with respect to the alleged existence and accumulation of maternal separation anxiety (as well as paternal separation anxiety) which, as therapists know, can so often be minimized through verbal explanation as well as non-verbal communication. Earlier, attention was drawn to the probable differences, in some instances with regard to anxiety, between a girl separated from her mother as distinct from a boy, who may already be taking cues from a western stereotyped “tough” father, a role often re-inforced by the school, especially through boarding-school placement (Himmelweit, H and Oppenheim, A). Taking these permutations further, it should be recognized that any amount of “natural” variables with regard to the emotional effect of separation anxiety can be experienced under appropriate circumstances by a boy or girl both from their father or mother, depending on such factors as the strength of the relationship between the child and both or one or the other parent. Also, it must be remembered that it is highly unlikely that the bonds of affection between a child and either parent remain fixed and constant, even though the all-over personality structure of humans is thought to vary relatively little under normal (though not of course, under abnormally-extreme) conditions. The emotional attitude of the child is likely to change according to varying conditions and the stage of maturity he has reached. For instance, it is often assumed, especially by analysts, that a shift from the primary maternal love-object occurs with a child of either sex during the oedipal stage, only to revert to the mother in the case of girls, and in the case of boys switch to the father on the resolution of the Oedipus complex. If these shifts occur, it does not follow that they are a final static condition during infancy. In observing infant behaviour it can be seen that toddlers go through various experimental stages of playing one parent off against the other by offering one parent more open love than the other to test their reactions. During an adult analysis, analysts have often enough testified to the effect that at some stages patients are more inclined to select from their analyst, be he male or female, the paternal, and at other times the maternal aspects of the original parent-figure. In other words, a patient during the emotionally vacillating experience of getting his relationship with his parents

into perspective as a step towards maturity, is inclined to go through various acting-out stages. Thus, in the same way as a child experiments with traumatic events during play, an adult attempts to work through his or her traumatized feelings vis-à-vis not only the mother but also the father. Couched in less psycho-analytical terms, this means that one selects in life not only different roles, but different facets of these roles which are constantly altering in the light of everchanging real-life experiences. Thus according to the circumstances, it is sometimes the mothers, and at other times the fathers who are felt to be the more dominant source of comfort. For instance, the writer, when asking his sample of children (Andry (a) *op. cit.*) which parent they would prefer to deal with them when in trouble, found that in the first instance they tended to choose their mother, but when in serious trouble they preferred their father to deal with them as the ultimate source of authority. There are numerous variations around this theme. Some children work only through the mother, but others will pass through this stage to an ultimate cathartic paternal relationship. Others will work first through the father to an ultimate maternal or paternal relationship according to the emotional stage they have reached both in reality and in their fantasy life. The literature is full of descriptions of the seemingly covert-homosexual stages of the young; for instance in their peer-group, adolescent, gang-relationships which only later in life—often through a successful marriage—take on a relatively clear-cut cross-sexual bias on the parallel assumption that the relationship between husband and wife has the same complementary elements of security that the child felt earlier in his parent's relationship (Argyle). In the light of these considerations, is it not probable that the maternal-deprivation concept is far too specific and over simplified, when applied to so many varying circumstances? Even where gross maternal separation may have occurred, it seems distinctly possible for a really perceptive and sensitive father (or some other substitute) to breach the separation gap successfully and to neutralize the child's anxieties since fathers are known to have successfully raised children who were neither neurotic nor delinquent after they had lost their mothers in infancy.

So far, a child's relationship with only one or the other of his parents has been discussed on the assumption that they are primary vehicles for the formation of attitudes and anxiety. However, it must be remembered that in a close family with several children an enormously complex verbal and non-verbal network is likely to have been built up between a child and his *sibling* from a very early age which must be viewed *in toto* and not in segmented child-mother and child-father relationships. In a family with one child, there are three two-person relationships—father and mother, father and child, mother and child; in a family of five persons, there are ten two-person relationships; in a family of seven, twenty-one. The number of potential relationships in a family with three children, taking into consideration relationships between two persons and those between any one

and combinations of two or more, is sixty-five (Elkin and Thibaut and Kelly). This numerical factor, in itself, is likely to effect the particular character of emotional relations and anxiety patterns. Coupled with this and following the works of R. D. Laing and D. Scott, one can imagine the varying impact of family members on a child due to differences in personality patterns—both inborn and environmentally induced—where it might be assumed that according to some form of vector theory (as enunciated by Lewin), the child resolves the conflicting variables in some compromise direction both to the comfort of his inner life-space and at the same time as closely as possible to the realities of an outer-life-space, endeavouring in this manner to avoid the pains of conflict through residual and cognitive dissonance (Festinger). Accordingly, one can imagine for instance that in certain circumstances a comforting sibling could be of enormous help in reducing maternal-separation anxiety, possible even to the extent of neutralizing it almost completely, particularly if they are further re-inforced by a comforting type of father, grandparent, aunt or uncle with a really deep capacity for giving comfort and for reducing anxiety. Clinicians will have come across many case-histories of large happy, say, Irish families similar to those observed by Woolf (the Celts are said to be more emotionally expressive), where although the mother died young, the children grew up with a great capacity to express warmth, assisted in childhood by the comforting actions of warm-hearted fathers, siblings and close relatives. Incidentally it is of interest to note that a religious belief in an eternal God is expressed as an all-comforting Father, and not in Western cultures as a mother, whose worship appears to help reduce depressions which are interpreted by some as being the result of primary and secondary maternal-separation anxiety.

Before considering the pathological aspects of child-parent relationships, it should be emphasized that the basic natural affinities probably existing (though not automatically) between a mother and her child are not confined exclusively to the mother but exist just as basically between the child and the father. Therefore affinities between a child and either of his parents can be reinforced or countered (explicable in terms of learning and psycho-analytical theory) depending on many circumstances (such as the attitude of the parents towards an older or younger child as well as the child's towards the parents (Schachter). All forms are explicable therefore in terms other than, as well as by the maternal-deprivation theory. Case-histories show repeatedly that some mothers, who hoping for a boy, were forced to adjust to the arrival of a daughter, whereas the father of the little girl may have always hoped for a girl. Hence the pre-condition was laid which is more likely to result in a closer relationship between the girl and her father rather than inevitably between the girl and her mother. Similarly, a father who had longed for a son (in contrast to a mother who had looked forward to a girl or did not care much either way), may be assumed to have on the birth of his son that deep and instinctive bond that some maternal-depriva-

tion theorists tend to claim primarily for the mother vis-à-vis any child. Whilst several other permutations exist, it is stressed that such initial reactions may or may not persist. There seems in children to be both degrees of, and near absolute, feelings towards one or both or neither parent, as the writer found in his study (Andry) (*op. cit.*), where many non-delinquent boys said they felt closer to both parents whereas delinquent boys tended to feel closer to their mother than to their father. However, some delinquents as well as non-delinquents unhesitatingly stated that a closer relationship existed between him and his father, thus showing the individual complexities involved in child-parent relationships which do not seem to be based automatically on a positive mother-child interaction pattern.

There are in all probability other conditions which may, either initially or more or less permanently, limit the bonds of deep affection between a mother and a child, leaving the field open in particular circumstances for a warm-hearted father to come into his own and exhibit demonstrative and protective qualities which he may have felt too inhibited to express before. For instance, some mothers giving birth to a child by a caesarian section may feel cheated out of the natural feelings of the normal childbearing process, and may express their resentment unconsciously towards the child, whereas other mothers may be able to express their love for the child just as much. Or some ambivalent mothers who because they are poor breast feeders or give birth to damaged children, may rationalize such limiting factors and hence have difficulty in expressing their love freely. It is suggested here that the father's equally warm-hearted attitude towards the child in parental combination with the mother (preferably reinforced by sibling and relatives) is likely to make for an optimal amount of good mental health.

No doubt, there are many other factors which can prevent the positive relationship between a mother and her child from developing effectively. For instance, the attitude of a mother may initially have been very positive but may have deteriorated as a result of the child's negative reaction towards the mother. If the child spurns the breast or begins to behave aggressively, the mother's warm feelings may turn to resentment and she in her turn may respond with anger or guilt or both. Again, there are many case histories which indicate that many immature mothers are competent with children only as long as they are very young, but are incapable of coping with children once they begin to express their own individuality. Such mothers may enjoy having a series of small children whom they can treat as placid toys, but are often wholly emotionally dependent on their husbands to provide the effective responsibility for their children's emotional and physical upbringing. Indeed in such a case the father's role is essential to effect the balanced emotional development of his children, for unless the mother matures by his example, the children may find themselves increasingly rejected by her.

Most clinicians have observed the capacity of some children—even those maternally-separated—to select “security” from their environment and adjust to the damage efficiently and quickly under propitious circumstances. Good nannies, grandparents, etc., reinforced by particularly good fathers may quickly minimize the effects of separation anxiety, especially if in the first instance the mother has been unsatisfactory (e.g. immature or frozen). In addition, it must not be forgotten that with children who are either very small and not yet verbal, undergoing a separation-experience, it is of enormous importance not only to provide substitute security in terms of an adequate surrogate parent (male or female) but also of familiar objects such as the room and house, the cot and blankets or the toys. It is often forgotten that deep-seated damage is frequently effected not only by the absence of the parent but also by the removal of deprived children to unfamiliar surroundings such as orphanages or the co-respondent’s home in divorce and separation cases. It seems that children not only feel secure in familiar environments but develop relationships quite separate from the familiar security of their relationship with the mother, with people as well as objects connected with the home and the surroundings, all of which play an important though varying part in satisfying their need systems at different stages in their personality development. For instance (as mentioned earlier), even small babies can be observed playing-off mother against father to satisfy the need system of the moment, thereby showing that the baby can invest emotionally in his father when playing up mother and vice-versa. The child may soon come to learn that in certain situations it may pay off to invest emotionally in the mother to the near exclusion of the father, and in other situations to invest temporarily or permanently or spasmodically in the father to the near exclusion of the mother. Again in some situations, the child may prefer to invest emotionally in both parents. Very young children can become conditioned to one or both of their parents going out at night (be it for amusement or work), and may at some stage resent it more than at others. If the mother goes out regularly at night, for instance to work, leaving a warm, demonstrative father in charge, it may well emerge that a strong separation anxiety is expressed not so much when the mother goes out regularly but on the very few occasions when the father unexpectedly goes out too or instead of the mother. During a crisis or following emotional regressions children have been seen to cling not necessarily to their mothers but where deep bonds exist between them, to demand their fathers as well. Often it may be true that because in Western and many other societies mothers spend most of the day with the children they become for the babies the permanent security-making love object, and as a result the babies tend to cling primarily to the mother in a crisis and only to father as second best in preference to a third lesser-known person. However, a perceptive father knows how quickly this picture can change when he has the opportunity of spending some time at home with his children,

particularly during the "near-imprinting stages of learning readiness" when even very small babies want to explore their relationships not only with the mother but with any other human being close at hand, be it a nanny or a father. Conversely, perceptive babies and small children will quickly learn under which circumstances a mother or a father, or nanny, etc., will be of comfort value to them. Almost contrary to the instinctive maternal deprivation theory, it is suggested that a perceptive baby or child will learn sooner rather than later that it pays to place its emotional investment not only in the one maternal figure, but in several, including the father, nanny, favoured siblings and favoured relatives (Bandura and Walters). This is not to deny the latent danger of psychopathy, where emotional investment, spread out among too many people, can make for great shallowness in feeling. However, there are many people, who in the height of their maturity can invest deep warmth not only in mothers but with equal depth in their father, siblings and relatives, and at the same time can show deep compassion even for the outside stranger who is in need of comfort. It is suggested that such comfort-seeking strangers have at least as good, if not more chance of finding comfort from a person who has been the offspring of a secure relationship with both parents than with someone who has simply never suffered from serious maternal deprivation. Individual comfort-giving acts are often recognized by perceptive infants as emanating from either parent or specifically one parent who is not always necessarily the mother. For instance, a crying baby's attention may be averted practically every time on being picked up and held in front of a mirror or placed on an adult's shoulder. If these mechanical comforting acts become associated with the father rather than the mother, a conditioning-response is set up between crying and ceasing to do so as soon as the father approaches in anticipation of being picked up. This is not intended to deny that there seem to be higher order responses of mothering and comfort but rather to show that they are not the only ones.

Unfortunately, there is such a dearth of research material in this field that one is constantly forced to fall back upon raised hypotheses and personal observations. However, the writer has demonstrated elsewhere that at least under some circumstances a satisfactory relationship with both parents rather than with only one is more likely than anything else to achieve a mature well-balanced personality. This is not to deny the possibility that a perfectly satisfactory adjustment to life can be made by anyone who has achieved a satisfactory relationship with one or the other of his parents, but it is easy to deny that the maternal deprivation factor is the pre-requisite to healthy adjustment—on the contrary it is only one—albeit important—of the many factors which go to make up the complex system of a mature human being.

In this connection the manner in which a person chooses his marriage partner can be of relevance, as an indirect consequence of different degrees

of childhood deprivation in relation to one or the other or both parents. It could be that in the absence of the ideal close tie with both parents, deep maternal ties are especially desirable for a girl to become in later life a satisfactory wife to a man, who having been maternally deprived in his youth, particularly needs the element of motherliness which she may have absorbed by reason of her close relations with her mother. Again, it may be useful for girls to have especially close ties with their fathers, if they are to make good wives for latent homosexual husbands who tend to see in their wives a quasimale figure (always assuming that such a girl will not be too emotionally frozen to be incapable of having a really effective relationship with either parents or husband). Conversely, good husbands for latent lesbian wives may well be men who had a closer relationship with their mothers, on the assumption that the wives also feel more at ease with a slightly feminine man. Again a partner representing the parental figure of the opposite sex may be chosen, in an attempt to resolve late in life an oedipal relationship, provided the personality is not too rigid and frozen.

The point is that in these and several other possible permutations some matching and others not, with Freudian oedipal theory, it is obvious that it is not only the mother-child relationship, but also the father-child relationship which is relevant in the multiple complexities of human nature where it is even difficult to decide under what varying circumstances a person is homosexual or bi-sexual and to what degree. Once again, this is not to deny that some classic maternal-deprivation cases do exist which can play havoc in later life and on occasions prove disastrous especially in marital relationships.

B. THE LAW, CHILDREN, AND THEIR MOTHERS AND FATHERS

As long as a family stays united, the various normal cross-tensions between a child, his siblings and both his parents (and between the parents and the siblings) are assumed to find their own levels. Whatever insecurities may exist in a child, be it due to the anxiety of losing his mother, father, or siblings (in reality or fantasy), it is thought that the family group as a whole acts as a security-enforcing agent, even if one of the members is temporarily absent (in which case the emotion invested in the absent member gets largely transferred to one of the other members, or becomes fantasized). Naturally, if the preferred or "warmer" and more affective parent (the mother or the father) is absent, a great deal of behavioural disturbance can result (as experienced by working mothers and fathers who spend long periods of time away from home—i.e. long-distance lorry-drivers and sailors). However, research shows clearly that such absences need not be the major cause of maladjustment (McGregor and Rowntree).

The family group (taking it beyond the basic triad of child, father and mother, including in most circumstances, grandparents, uncles, aunts, etc.),

probably follows behavioural laws which are similar to those evolved in relation to any group as enunciated by such workers as Bales, Bion, Slavson, Foulkes, Anthony, Ericson, and others. For instance, a child in looking at the leadership structure of his family is likely to find that at times the family is more task-orientated than at others. Thus he finds that the mother under certain circumstances (for instance, in matters appertaining to the household) and father under other circumstances (for instance as the final authority in monetary and disciplinary matters) or both parents together (under many circumstances) become the main decision makers. Hence either parent may acquire particular status, respect and love (which may or may not coincide with a child's primary preference for one or other parent). Following Bales' notion of the dual function of leadership in a group—i.e. instrumental (more task-orientated) and expressive (more interested in achieving harmony), it seems that a child may look for both forms of leadership. The former often being associated with the father and the latter with the mother. Thus the withdrawal of the father from the family group could therefore be just as damaging as that of the mother. Following Bion and others, families under stress probably develop their own dynamic "healing" pattern where the "catalyst" function is taken on variously by one of the siblings and the role of the "scapegoat" occasionally or semi permanently by another sibling or by either parent. Following Freud, these family patterns are often themselves reflections of each of the parent's own parental and sibling backgrounds which, according to their fixations and the extent to which their oedipal relationships were not fully resolved, may give rise to conflict in the next generation when friction may be generated by the parent who has least resolved his oedipal situation. As a result it is likely that a child will have a better affective relationship with the parent whose own oedipal relationships have best been resolved. Again this is not automatically or necessarily the mother.

When families do not remain united, considerable additional stress is naturally imposed upon a child (as well as other members of the family). Thus he can come near to breaking point unless stresses are relieved or redistributed within himself or within what is left of his family and peer group. Judges and magistrates are invariably called upon in divorce and subsequent custody cases to administer "justice" in the primary interest of the child to enable him to come out of the stressful situation as lightly as possible (E. Miller). This means, that the judiciary must rely partly on common sense (alas often not based on the best in psychiatry), and the inevitable personal frame of reference which a judge or magistrate carries into a courtroom. Hence it is important to highlight some of the psychological factors involved in the hope that thus a psychologically-based judgement will be introduced into judicial circles, based less on the combination of personal attitudes, hunches and unconscious feelings of indignation, but more on science. Therefore, it is important, in so far as judges are trying to be "scientific",

to ascertain whether their decision of, say, giving a child (or children) to the divorced mother or father is related to the simple-structure "maternal-deprivation" theory (which would favour the divorced mother, even if she were an unsatisfactory recipient for the children) or the complex "duo-parental" family theory, here advanced (which could favour either parent). The theory is based upon investigations into the whole complex range of the child's relationship with both the parents and his siblings at the conscious and unconscious level as well as the deep-seated parental and sibling attitudes vis-à-vis the child. There is a great danger that judges and magistrates may not always recognize that parental attitudes towards the child are being simulated by one parent when in fact the other parent may feel much more deeply for the child (feelings which are often reciprocated subtly by the child himself). Again, it is essential to recognize that a parent with a guilt-ridden and immature type of super-ego might make a plea to keep the child because he or she feels it is the proper thing to do, and is more concerned with the stereotype of what the neighbours would think if a struggle was not endured, than with personal feelings. How is a Judge to differentiate between real (i.e. pre-consciously-desired) feelings and "sham" (i.e. rationalized) feelings? Lie detectors, attempting to measure emotional involvement, are hardly feasible in the criminal field, let alone in this civil field, nor is the application of sodium pentothal or other products, in attempting to gauge the "real" feelings often lying beneath the surface of consciousness and which bear no relationship to conscious actions. Thus judges tend to rely on the expert opinions of psychiatrists and children's welfare officers or some will fall back on their own preconceived ideas on the nature of the parent-child relationship often formulated as a result of their own personal experiences in childhood. Can legally trained judges be expected to know that the level of diagnostic opinion among the so-called experts can range from a skilful barrister presenting for one parent a psychiatric "maternal-deprivation theorist", and the barrister for the other parent calling upon an expert who is less committed to the maternal-deprivation theory, but more to the "duo-parental" theory which would give both parents at least an equal chance to claim their child? And how can judges take these "expert" opinions seriously when some barristers set out to play off one theorist against another in order to reveal their lack of unanimity (some of these problems have been discussed by Professor Sheldon Glueck)? Similarly, how far are judges aware that so-called experts have often written their verbal evidence on the basis of a single interview, the child often accompanied by only one parent? An investigation by an objective team of experts, representing neither disputing party, conducting prolonged observations of the child or children vis-à-vis both parents is surely infinitely superior? It is true that judges can order welfare workers to report back to them but at the same time it is equally true that at present this is not a matter of routine; that welfare workers are neither

psychiatrists nor do they make it clear to which psychological school they belong in relation to the controversial maternal deprivation theory. Judges themselves unfortunately do not as a rule have personal interviews first with the child (or children) under dispute, then with one parent and the child, followed by the other parent alone, then with the child, finally with both parents and the child. The inevitable conclusion must be that judges should in future be assisted in these investigations by a full psychiatric team consisting of a psychiatrist drawn from each of the opposing schools, as well as other clinically trained workers in this field, such as psychiatric social workers and clinical psychologists the latter being accustomed to giving personality and other tests with a high probability of objectively detecting lies or emotional instability in either parent. This should help to objectify a situation upon which hangs the happiness of children, and help prevent a child being sent to the "wrong" parent simply because this parent was able to put up a better "front" in court or was assisted by a more "convincing" barrister, or skilful solicitor.

It is suggested here that the present system is distinctly unsatisfactory, although it is recognized that it is not ill-will that has given rise to the present situation, but rather that the judges, magistrates, barristers and solicitors who usually act with a high degree of idealism and fair-mindedness, are the victims of the traditions of the law's lack of time and finance.

It is recognized that individual judges with experience in this field spend many conscientious and heartsearching hours in resolving the present predicament but it is difficult to see how such individual attempts can be superior to those of a scientifically-based clinical team. Before considering basic reform plans, it is necessary briefly to examine the current legal position in Great Britain and elsewhere with the object of attempting to understand its historical origins, and in order to relate these in future to a system which will make not only good legal but also good psychological sense (James; Paxton; Cavenagh; Kahn-Freund; Rubenstein).

To begin with, it is salutary to remember that in Britain, both civil and criminal justice is based essentially on an "accusatorial" system as distinct from the continental "inquisitorial" system, where it is essentially the task of a judge (and not the barrister) to bring out facts and to go personally into the minutiae of the case (Mannheim). Oversimplified, this means that in Britain the tradition grew up that the figure of justice in the guise of a judge should listen blindfolded and impartially to the disputants on either side. In so far as one advocate, on behalf of his client, is cleverer than his opponent, he has a good chance of winning his case through sheer brilliance of advocacy. It is not primarily the function of the judge representing the blindfolded figure of justice, to ascertain "the truth" of the matter, but to dispense whatever seems fairest and equitable in the light of the facts put before him. It is not his task to remove the blindfold and look at the disputants directly but rather to keep on the impartial blindfold in the know-

ledge that two intermediaries exist on either side between him and the disputees—a solicitor to prepare the case and a barrister to plead in court—who can be relied upon to conduct most of the business objectively and efficiently according to the legal rules (which they understand and will probably respect more conscientiously than can be expected of the ego-involved disputing parties themselves). Thus the law attempts to keep the human emotional squabbles down to a bare minimum whereas the psychiatrist may aim to do exactly the opposite in order to observe the human dynamics in action but as a result judges tend to make decisions through a thick window put up by legal and other advisors with the danger that “the truth” gets more and more diluted as successions of intermediaries come between client and judge (as Sir Frederic Bartlett (Bartlett) demonstrated in his psychological laboratory in a different but related context, and which was confirmed recently in Chicago with simulated juror’s behaviour under experimental conditions). This system in Britain is adapted from the criminal to the civil side, since it is considered to be the fairest. In practice, this means many things.

For instance, a potential divorcee with a deep-seated desire to claim his children must in the first place show great perspicacity in selecting the right kind of solicitor who is a top expert in this specialized field since it is he who in turn is in touch with expert barristers known to have a knack of presenting cases of matrimonial dispute better to some judges than to others. Sometimes it is considered sounder strategy to choose a woman barrister, as she may be more adept at enlisting the sympathy of some judges. The bruised potential divorcee is thus forced to unburden himself in the first instance to his carefully-chosen solicitor, rather than to the judge himself as the final arbiter. This being somewhat analogous to the psychiatric patient in the army who has to unburden himself first to the sergeant-major (often well-meaning though not the final arbiter of the case but who has to decide whether this is a case for the medical officer or not). To be fair, it is the highly skilled and sympathetic solicitor who comes to live with the client’s problems (which are often as much psychiatric as legal) with only a legal training to assist him. Often he is forced into a psychiatric role at the beginning of a divorce case when he has to stand by until literally tearful clients have called the proposed divorce on and off several times and has to advise them on practical problems such as names, suitable domiciles, etc. Thus solicitors (like sympathetic sergeant-majors) are exposed to the psychiatric problems of their clients without themselves having the psychiatric expertise or time to deal with them exhaustively. In this manner neither the solicitors’ nor the clients’ stresses are relieved with any speed but on the contrary, are likely to continue for many months. Near the time of the final divorce, several intervening legal actions may suddenly spring up such as alimony pending suit “hearings” (for a husband in charge of the children even though he is found later to be blameless may still have to support his

“guilty” wife irrespective of whether his wife is contesting either his divorce or custody of the children, on the outmoded assumption that wives can’t support themselves by work). Thus a vindictive wife may be advised by her solicitor to take only a part-time job to demonstrate first her willingness to work but her incapacity to support herself fully, and secondly her desire to spend as much time as possible with her children in order to influence the final custody case. In such a situation it would be difficult for a Judge without the assistance of a psychiatric team to discover that the possibly wealthy co-respondent may be keeping the mother in comparative luxury anyway, or to ascertain whether the mother’s feelings vis-à-vis the children are genuine or simulated for the sake of convention. Again a “guilty” wife and ambivalent or cruel mother may be advised by her solicitor to put in a separate action before the divorce case comes up in order to try and claim the children, thereby demonstrating for the benefit of the divorce judge in the final action that she is not as black as the facts would make her. To complicate the present British position further, the judge may not necessarily be the same person in all three independent actions. Thus there is no opportunity for a single judge to feel out the complexity of the case. What is more the co-respondent may be a married, wealthy man in the process of deserting his own wife and children, a position which is not generally revealed to a judge during the interim actions but psychiatrically is of great importance. Thus it is concealed that the co-respondent’s solicitor, whose task is to win the case, not to go into the psychiatric pros and cons of such conduct, may have to advise—irrespective of psychiatric consequences—that the co-respondent inform his wife that he has no intention of returning to her, but if she consents to the divorce on his terms, he will settle more money on her and their children than he is legally obliged to. Thus, by way of indirect blackmail, children of several families are drawn into a valid legal game of strategy and counter-strategy, usually without psychiatric aid, by solicitors whose training and function does not enable them to deal fully with the emotional side of such problems and without full knowledge of the suspected “manoeuvres” behind the scenes. A solicitor’s task is to plan the best strategy, under current British law, to help only his client (in this case the co-respondent) achieve his wishes (quite irrespective of the fact that the client in his present infatuation may not know what is best either for himself, his wife and children, nor for the home of his mistress which he has helped to break up). A non-psychiatrically-orientated solicitor or judge may be unaware that the co-respondent in his immature inability to make a clean break is for instance returning home occasionally to his estranged wife to tell her of his sexual exploits elsewhere. This demonstrates that although he may be legally entitled to a divorce (if the wife agrees to sue him), it may be unwise psychiatrically to grant him one while he behaves in such an unsound manner.

The solicitor, like the sergeant-major, has primarily a non-therapeutic, non-diagnostic task, which is to ensure that legally he has a water-tight

case. Indeed, the solicitor, together with his barrister, will often take great pains to ensure that certain information as mentioned above does not reach the judge, for the latter may take a poor view of the vacillating and indelicate behaviour of a co-respondent which, thus in turn, may affect the outcome and the main case.

Under an "inquisitorial" system, a judge could inquire normally into such details, which would give him deeper insight into the personalities involved. However, under the British system, such relevant material would be swept under the legal carpet, as irrelevant evidence, and no judge would hear of it. It is true that under recent legislation some form of collusion between the parties is now permissible, provided the judge is informed of it in the end. However, wide discretionary powers as to exactly what the judge is told still exist among the conferring solicitors (the husband's, the wife's, the co-respondent's and his wife's), and although facilities exist, there is rarely a place for a solicitor representing the children nor for a third party, for instance—grandparents, who may feel in the interest of the children that they can see beyond the follies or lies of the disputants.

The solicitor and the barrister stand in some ways psychiatrically between the client, the children and the judge. According to the British legal system it is the custom for the client to unburden himself to the solicitor (but not the judge) of most information with regards to matrimonial difficulties which will satisfy the former as being legally relevant from the point of view of fighting and attempting to win the case, quite irrespective of the psychiatric implications, which as such are constantly in danger of being disregarded. It is then the solicitor and not the client who will present the legal side of the problem to the carefully chosen barrister. Thus the barrister gets his story second-hand and often he will only check on one or two vital points with the client whom in some instances he may meet for the first time ten minutes before the case begins. It is the barrister's and solicitor's task between them to plan the strategy of battle in terms of an admixture of law and case-law and not in terms of what the disputant may "naively" think important enough from his personal point of view to place before the judge. There is a dilemma here for if this were done, it might bring relief psychiatrically to the client but could prove legally fatal and lose the client the case.

The judge's task after all is to listen with a legal, not a psychiatric, ear. Should the judge ask for more details of one of the people named in the affidavit before him—the barrister himself may not always be in a position to supply the information, and will have to enquire of the solicitor who in turn may have to ask the client. This only serves to show how remote the judge can be from the person he is to pass judgement upon, under the present legal system: this applies also, to a lesser extent to the barrister. From the psychiatric point of view there is much that is unsatisfactory under the present legal system and nothing perhaps quite so much as the question of

settling of access, custody, care and control of the children involved in divorce cases. The resolution of these problems tend to follow certain well established patterns which may make legal sense but may do considerable psychiatric harm to children torn between the love of both their parents. The legal position is set out in clear terms in section 1 of the Guardianship of Infants Act (1925) with reference to custody of the child vis-à-vis either parent. The act states clearly that it is the welfare of the child which must be given paramount importance in the deliberation of these cases, and furthermore, that the rights to custody of the father and mother are exactly the same. Historically it used to be the father, as the head of the family who was often given custody of the children especially if his adulterous wife was considered to be the "guilty" party, or even if he was guilty. (Also in Britain and on the Continent there used to be a trend which is less clearly observable now according to which, in disputed cases, fathers were given custody of boys and mothers of their daughters.) In more recent years this paternalistic practice has been considerably modified in favour of the mother, even if "guilty", especially with reference to very small children, since it is the welfare of the children that the court has basically in mind. In the eyes of the law a mother would have to be morally very bad, or physically very destructive, before her claim to custody would be overlooked. However, it should not be forgotten that in psychiatric terms it is seldom possible to blame the break-up of a marriage on only one partner, and although ostensibly the "guilt" may be laid at the feet of a mother, the husband too may also be to blame, at least partially. In such a case the judge may find the wife to be an entirely satisfactory mother. At present it is the judge who decides whether the mother is adequate or not, and even if she is the "guilty" party, unless she is overtly very neglectful, she stands a very good chance of getting the children, for without psychiatric expertise it is very difficult to differentiate between the many shades and degrees of physical and emotional maternal neglect. However, if the same mother underwent prolonged investigation by a psychiatric team looking into the more subtle personality dynamics, rather than for superficial signs of neglect, it might well emerge that she was the less satisfactory parent. It is feared that without such refined investigations that there is a danger that too many hit-and-miss judgements are given by judges who though legally eminent and personally humane can hardly be expected under the present system to display skills in psychiatry as well.

Allied to this is the whole question of the interrelationship between custody, care and control, and access, of divorced parents and their children. Normally, judges are rightly reluctant to allow a state of affairs to develop which makes it easily possible for one parent to play off the other where one has custody, for instance, and the other has the care and control. Where such conflicts do develop it might be a step forward in the direction of reform at least legally (though some psychiatrists may disagree), to

award custody to neither parents but to the state. Often, both disputing parties can be relied upon to be civilized in putting their personal needs second to those of their children. However, there must be many parents who cannot be relied upon to be fully rational, especially at a time when their emotions are deeply disturbed. Whilst under the impact of the formal court and its procedure, either parent can be in a great state of tension which prevents them from being necessarily the best arbiters of the number and frequency of visits in the best interest of the child, particularly as often these decisions have to be made in great haste in the corridors of the courts during an adjournment. Mostly these arrangements are left to the disputing parties based on the advice of their lawyers, who try to ensure that decisions are as fair as possible for the children. These often hastily worked out compromises, rarely based on psychiatric advice, are then made firm by the court order of the judge. Again, on the face of it, this seems eminently reasonable in that it is hoped that future squabbles are thereby prevented; but is it, when no psychiatric advice is sought? Careful investigation carried out by a psychiatric team might easily find that access granted often in a rule-of-thumb manner usually allowing 50 per cent of time in school holidays to each parent, or alternate weekends, etc., is not necessarily the best for a heavily traumatized child, made deeply unhappy by the break-up of the home. On occasion, it may be more expedient from the point of view of the children for one of the parents to visit the children less at the start, to allow them time to adapt to the new regime. However, to make such concessions may be unwise from the legal point of view for the parent concerned (particularly if a later counter-action to reclaim the children is planned, for instance, where access is regulated by court action before the divorce and final custody ruling is made), for it may be legally foolish for a party to forego visits—even temporarily—for fear that thus a precedent is created by the time the final court case comes up. Conversely, there are times when it may be highly desirable for the deserting parent (mother or father) to visit the child frequently if the child obviously benefits considerably from these visits. Again, however, it might make good psychiatric but bad legal sense if the “non-guilty” parent allows the “guilty” parent increased access because this might adversely influence the final custody decision. Further, after the judge has made his order, and unbeknown to him, the “guilty” parent on a legal visit to the children may take the opportunity of these occasions either consciously or unconsciously to “get his- or her-own back” on the spouse by encouraging the distress of the children. Under such circumstances children will not be able to settle down for a long time since these frequent visits will continually re-open semi-healed wounds, representing the negative side of the learning laws of re-enforcement. Since it can take a long time for a divorce to come through, a child and the parents may suffer in this manner without psychiatric aid for as long as three years or more, and even after divorce and custody has been settled, the court’s

decision can be challenged and is never final, thus placing the parties under prolonged strain. This means that a "guilty" wife and ambivalent mother anxious to marry the co-respondent, can agree to the husband having care and control of the children in order to gain his consent to the divorce, but immediately it is obtained she can bring in a new action to claim the children, thus prolonging strain even further. In fairness to the court at present judges are inclined to move the children around as little as possible and tend to leave them in the familiar surroundings of the "matrimonial home".

However, the point is that decisions of this psychiatric nature rest upon the judges who are not psychiatrically qualified and who, in most cases, do not as a matter of course consult with psychiatrists, let alone with psychiatric teams.

On those occasions when psychiatric reports are taken into account the judge is generally forced to decide between the opinions of conflicting psychiatrists often carefully chosen by the lawyers representing both parents for the very reason that they will support the view of the parent they represent and oppose the other. Rarely does a judge under the British "accusatorial system" use "inquisitorial" methods by talking the matter over exhaustively *in camera* with the parents themselves in order to gain his own impressions. He can, of course, do so or appoint a court-welfare worker to investigate the case objectively, but rarely have the latter sufficient time or facilities or even adequate training to deal fully with such a highly complex matter. Also, their reports are confidential and it is not really possible, under the present system, for parents to see them nor to challenge their content and to call in a further opinion to validate and test the findings put before the judge.

A further complication under the present system springs from the fact that custody matters can be dealt with by three separate courts (and by several judges or magistrates within each court at different times). Skilled legal advisors can help their clients considerably by deciding in which court to start, finish or concentrate the case. Conversely a person unable to afford legal advice may apply for assistance to a magistrates court when in fact under certain circumstances he may have done better in the Divorce Division rather than the Chancery Division of the High Court. (In this connection a projected study by L. Blom-Cooper, O. R. McGregor and A. R. Ilersic on the social consequences of wives who live apart from their husbands, is to be welcomed.)

A further difficulty under current procedure arises in connection with the "co-respondent" or future-step-parent in connection with the divorce and custody decision. Naturally, the co-respondent will be disinclined to declare his or her intention of marriage while the divorce of the person he or she wishes to marry is still in process. The correspondent obviously wishes to remain protected from damages and from jeopardizing his or her own possible divorce suits. This sentiment of anonymity is encouraged to

some extent by the court which infrequently involves "fringe" people (i.e. people with only an indirect bearing on the case) in custody cases in order to complicate matters as little as possible. However, in view of the fact that subsequently a "stepfather" or stepmother will play a considerable part in the children's lives, surely it would be wise psychiatrically to look into what manner of person the co-respondent is (if he or she is reasonably certain to become a stepparent), before the judge makes a final ruling in custody cases?

In point of fact third parties (such as grandparents) can of course enter the proceedings when they feel they have relevant information (usually on behalf of their own relatives) which may influence the final outcome of a custody case. However, such cases are rare, since they are not only costly but the substance of their complaint against the other parent is often difficult to establish. In some ways this tendency to omit third parties is unfortunate since, for instance, a court welfare worker, if routinely interviewing as many third parties to the dispute as possible, might gather much important psychiatrically meaningful information. Under the present system this tends to be ignored for fear of over-complicating the issues, since many statements made by third parties are not considered, from a legal point of view, as strict evidence, but merely opinions and hearsay.

Again, psychologically speaking, it is regrettable that under present court practices the opportunities are limited for "inquisitorial" investigations into important facts which have a direct bearing on the case, but for some reason or another are not brought out by either side. For instance, no paternity blood tests are ordered by the court even when it is suspected that a male co-respondent is, in fact, the father of one of the children of the disputant to the divorce case. Whilst such tests do not always give absolute proof, they may at times do so and naturally this will have great bearing on the final decision as to who is to have the children. Admittedly this may not always matter in the case of a child where the non-natural parent has become devoted to the child and is a better parent than the real one, or where the existing matrimonial home is better than the new one (where such a child would be recognized as legitimate and belonging to the "children of the family"). However, the point is that where paternity can be verified, it is usually a pity, not to mention dishonest, when all the facts are not ascertained and put before the court.

To revert briefly to the matter of custody, and care and control, (especially if there is a danger of dispute over this among the parents, regretably from a psychological point of view) there seems to be a tendency among many judges and parents to make a boarding school (for children of middle-class divorcees) serve as a convenient way out of the impasse—of deciding which parent is to have care and control in the knowledge that it is easier to divide the holidays equally between both parents. However, in this way, children may be sent to boarding schools not only too early in their lives, but they may also be totally unsuited emotionally to boarding—on the contrary they

may require a great deal of extra care at home to overcome the damage they have probably suffered through the divorce and the events leading up to it. This is not to deny that some children of divorcees, irrespective of class background, may do better in a boarding rather than a day school (P. D. Stott) just because such a school may provide a more stable background than a semi-divided home. In such cases, however, one would hope for such a school to provide a psychotherapeutic environment (D. Miller, *op. cit.*). However, the point is that it is dangerous to use boarding-schools indiscriminately in order to avoid the complex psychiatric investigations necessary to determine which parent is more "akin" to the child and would make the better guardian. For these reasons, and many others, "rule of thumb" measures are not suitable to determine the allocation of children to the "right" parent—even though there has been a tendency also in other countries to use such measure. The general tendency was to allocate boys, once they had reached school age, to the father, on the assumption that as it was they who carried on the family name, they needed essentially a father-figure with whom to identify; and for girls to be allocated to the mother for the same reasons. As was also stated earlier, in most Western countries during recent years, the patriarchal family structure seems at times to have given way to the other extreme, to a matriarchal family structure (according to U. Bronfenbrenner and G. Devereux, *op. cit.*) or in some countries more healthily to a balanced equalitarian (mother and father) family structure. Naturally, a balanced shift in the direction of the latter is most welcome, but it is extremely important that current relevant sociological and psychological research findings become knowledge in the courts, for only then will it be possible to achieve a rational as well as an equitable decision-making policy.

Most of the comments made here are of course applicable not only to cases of divorce and custody but equally to other cases where the welfare of children is of primary importance, including cases of adoption, "care and control", juvenile court cases, and where parent management (or the absence of it) is an integrate part of the process (T. Gibbens).

As mentioned earlier, it is useful to recall that at present a number of different courts can deal with parts, but not always all aspects, of cases where child welfare is concerned, and that the procedure not only differs but is probably child-centred in name only. This is so because the psychiatric team plays in most courts—with the exception of juvenile courts—a very subsidiary role in the diagnosis and decision-making process. A plea is made, therefore, for this policy to be reversed where needed, to bring it into line with at least the psychiatric-team approach of the juvenile courts, but if possible to take it one step further, and in the light of already existing knowledge and practice in child psychiatry and psychology, to bring it into line with the possible future development of family courts (Longford; Cooper, Nicholas) and quite generally within the context of community mental

health (Caplan). It is not intended here to supply a fixed blueprint for future Family Courts or court proceedings which will at least be based on the spirit of the child-guidance approach. However, it may be useful to take some of the following basic general ideas into consideration, especially with reference to the possibility of making family court tribunals where the bench is presided over by a judge who is aided by lay-assessors, thus changing the pattern of the High Court and divisions of divorce and chancery and ordinary magistrates' courts.

In the first instance, in considering aspects of family courts, attention should be given to the following three phases: (a) psychiatric teams and pre-court investigations; (b) psychiatric teams: and the court procedure; (c) psychiatric teams and post-court procedure. Secondly, thought must be given to the problem of whether different courts and procedure (such as magistrates', juvenile, chancery and divorce courts) ought to continue to exist separately with their somewhat different functions or whether there is a case for the gradual establishment of a uniform family court, and whether more uniform procedures should be adopted which are geared to criminology on the one hand and child-guidance and human-relationship work on the other. Thirdly, to what extent will it be possible for lawyers and judges to get together more often in the future with psychiatrists, psychologists, psychiatric social workers and allied professionals in order to absorb from each other relevant basic psychological concepts for the benefit of the parents and their children who come before the courts, not only to seek justice but also to be helped to live through their traumatic experiences as part of a therapeutic experience.

With regard to the first point, a great deal of thought will have to be given as to how the law and para-medicine can best co-operate really effectively during the three outlined phases. During the pre-court stage, solicitors who have been consulted by potential divorcees should perhaps at once as a matter of routine, contact a psychiatrist (or clinically trained and recognized psychologist) for consultation in much the same way as solicitors consult early with a barrister. (At present many people avoid consulting a psychiatrist for fear that the opposition may use the visit in court as a means of demonstrating their instability.) Only after such a consultation has taken place, will it be possible to decide not only the legal prospects of such a case, but also the possible psychiatric damage or advantages that would result from a divorce, not only for the sake of the children, but also for the potential divorcees as well. This first step towards an all-round diagnosis need not take very long, but would usually be followed by a second and much more time-consuming step to help decide whether the divorce should take place at all, whether a reconciliation is possible or even advisable, and if so, what treatment could be provided. Alternatively if there is to be a divorce, decisions must be made as to how the children might be allocated, whether they are to have contact with potential co-

respondents—and if so, under what circumstances—how visits of the parent who has left the matrimonial-home are to be conducted, etc.

The point is that all this can only be gauged by imaginative trial and error long before the case comes up before the court, not in the current hit-and-miss fashion where psychiatrist or marriage counsellors are occasionally involved, but not as an absolute matter of routine, with the evidence arising from these investigations being placed before the court. Thus there is a need at the earliest opportune moment to impress upon the parties the need for keeping to the suggested arrangements. It is important that during this stage not only certain psychiatrists will be “statutorily” involved, but also other qualified members of the para-medical profession whose status within the framework of a genuine team has steadily improved in this century in the same way as that of psychiatry itself (R. Andry). For instance, in their final combined report (signed by each expert separately as an independent piece of evidence), they will have to have satisfied themselves about a number of specialized points which no single expert is likely to have had the time or full understanding to do on his own. For instance, psychiatrists would concentrate on the over-all personality pictures and decide whether from a long-term point of view it would be possible to treat the parents effectively for latent depressions. Solicitors should make sure that under certain circumstances, psychiatrists from opposing schools (psycho-analytical and non-psychoanalytical) will be involved at this stage (since if they are not, it will make it that much easier for the solicitor representing the “other side” to involve a psychiatrist from an opposing school). Psychologists would wish to supply a great deal of factual evidence rather than rely on clinical impressions alone, not only with intelligence-test scores, but also with detailed personality tests, observation charts of group dynamics (i.e. how each of the children behaved towards either parent, each other, other family members in the home and towards potential step-parents who may be the co-respondents, etc.). They would want to administer known tests, for instance of introversion–extraversion and neuroticism as well as potential ego-strength and other psycho-dynamic variables (making it clear at the same time to which school of thought such a psychologist belonged, unless he is an eclectic). Psychiatric social workers could have a great deal on which to report with regard to their visits not only to the matrimonial home but also to that of the deserted spouse (which is often a love-nest with the co-respondent frequently flying in and out), to the deserted or semi-deserted marital home of the co-respondents, and to the homes of grandparents and other interested parties, including in special circumstances those of responsible neighbours who may wish to give sworn evidence. Special schoolmasters, geneticists (in case of disputed paternity suits), probation officers, general practitioners, speech therapists and other specialists (in the case of retarded speech or backwardness in the disputed children) may well have very relevant information to give. All these experts

should have the opportunity of meeting to be able to submit not only their own documents, but a combined report as well, in the light of which the solicitor in charge of the case can decide further with his client and the barrister (and one or several representatives from the investigation team) how best, if at all, to proceed with the court hearing, or if it is decided to call it off, how best to arrange for treatment to proceed along the lines of the recommendations contained in the team's report.

During the second stage, that is the actual court case, judges (or magistrates) should make sure that they have in front of them all the psychiatric documents (including the experts' individual and combined reports) and if necessary they should be empowered to empanel a new team or add new members onto a team if they are in the least dissatisfied with the report. Alternatively it may be expedient to make more extensive use of the court's already existing powers by getting the bench to appoint a "guardian *ad litem*" quite automatically for every case and by getting him to empanel a balanced psychiatric team and then to pass the team's confidential report to the bench. The bench may then decide to handle the case more along "inquisitorial" or along "accusatorial" lines, depending on the nature of each case. (This concept was discussed between the author and Mr. Patrick Gardner.) Further, should be encouraged to question any members of the team or any person giving evidence to the team, should the need arise. In the same way, they should not hesitate to question the parents or the children individually or collectively in an informal court room. However, it is important that such "inquisitorial" functions of the judiciary get combined with some of the traditional legal safeguards in the British "accusatorial" system where a distinct role should continue to exist for the barrister and the solicitor. It should be the function of the solicitor to prepare the case and to liaise between his clients and the clinical team, and for the barrister to direct in court the trend of the arguments in favour of his client. In fact, this could in future lead to two kinds of hearing in every case. First the informal hearing *in camera* to enable the judge (and possibly his assessors) to acquaint himself personally with all the parties, including the children. Secondly the formal hearing where the parties (which ideally should include not only the mother and father, but also older children, on occasions, and in exceptional circumstances grandparents, so that a fair over-all picture can be obtained and worked out), should be represented through a solicitor and a barrister. Thus the over-all presentation of the case could remain in the hands of the parties' solicitors, and barristers (with the psychiatric team-members remaining purely technical witnesses).

During the third stage—the post-court stage—the judge may decide (1) not to proceed with a divorce or the award of custody, or (2) may defer decisions, on placement for the being, but (3) may try out various combinations of therapy either through the already empanelled diagnostic psychiatric teams or, depending on the circumstances, by empanelling a new psychiatric

treatment team under the guidance of the two opposing solicitors. After such trial periods, a decree might then be made absolute or a discharge given depending on the results obtained. Undoubtedly, if such a scheme gradually came to be adopted, this would increase costs and time enormously. However, any scheme that may save marriages and lead to better mental health in the children and their parents is surely worth the cost. Even if a divorce ensues despite all efforts, at least all parties could be satisfied that every avenue of diagnosis and treatment had been explored, which is far from being the case at present.

With regard to the second suggestion (as to whether family courts ought gradually to take over the diverse functions of the chancery, and divorce divisions of the High Court, magistrates and juvenile courts, or at least strive towards the establishment of more uniform procedures along the lines suggested above) it is not possible here to explore this further since a great deal would depend on the constallation and working of the progressive or reactionary social forces, irrespective of political parties, in the community. Law reform is in the air in the criminal field (*Children and Young Persons in Scotland*, Gardner, G. and Martin, A.), this should make it easier now for the civil field to join in this, as society begins to demand it.

Ideally speaking, it is here felt that the family court should essentially be a tribunal presided over by a judge, specially trained in legal social and psychiatric work to be joined on the bench by lay assessors, one of whom might be a psychiatrist, another a psychological social worker etc. Together they could involve diagnostic and therapeutic agencies, being themselves in a position of being able to evaluate complex behaviour from different points of view.

Allied to this, is the third and final point which concerns the problem of frequent lack of inter-communication between lawyers, psychiatrists and other qualified experts (Ormerod). In the past, various types of medico-legal societies (without incidentally extending membership to the newer qualified professions) have served as a useful platform for inter-communication at a time when experts were less busy, and at times less knowledgeable of detail than is the case today. However, with divorce figures constantly rising, and the older established professions taking so long to absorb the findings of the newer professions who make the most of the computer machine age, some new impetus is required. Although some lawyers may not be interested to hear psychiatrists, psychologists, statisticians (Wilkins), computer forecasters, and others, debate the pros and cons and pitfalls of such theories as "maternal" or "paternal" deprivation within a wider framework of learning and instinct theory (Andry(a)), others may feel the need for such intensified debate (Ormerod *op. cit.*). In the same way, non-lawyers may wish to learn a great deal more about the finer legal points, especially as it affects matrimonial and "patrimonial" cases. It would seem therefore that the time is fast approaching when it will be essential to

establish alongside institutes of criminology (which deal with aspects of crime), institutes of legal and human relationships (with a sophisticated multidisciplinary team-approach) which will be able to deal with civil law and human problem cases under conditions of stress in society.

REFERENCES

- AINSWORTH, MARY, ANDRY, R. G., MEAD, MARGARET *et al.* (a) Paternal and Maternal Roles and Delinquency. In: *Deprivation of Maternal Care, a Reassessment of its Effects*. W.H.O. Public Health Papers 14, Geneva, 1962.
- ANDRY, R. G. (1960) (b) *Delinquency and Parental Pathology*, Methuen, 1960.
- ANDRY, R. G. (1964) (c) *The Short-Term Prisoner*, Stevens and Son Limited, 1964.
- ANDRY, R. G. (1965) (d) *Teamwork and Criminology in Transition*, ed. Grygier, T., Jones, H. and Spenser, J. and Stevens and Son Limited, 1965.
- ARGYLE, M. (1964) *Psychology and Social Problems*, Methuen, 1964.
- BALES, R. F. (1950) *Interaction Process Analysis*, Cambridge, Mass.: Addison-Wesley.
- BARTLETT, F. SIR (1932) *Remembering*, C.U.P., 1932.
- BANDURA, A. A., and WALTERS, R. H. (1959) *Adolescent Aggression*, New York, Ronald, 1959.
- BANDURA, A. A., and WALTERS, R. H. (1963) *The Social Learning of Deviant Behaviour*, New York: Holt, Reinhart and Winston, 1963.
- BERNSTEIN, B. (1959) A Public Language, *Brit. J. Sociol.* 1959, 10, 311-326.
- BION, W. R. (1961) *Experience in Groups*, Tavistock Publications, 1969.
- BLOM-COOPER, L., MCGREGOR, O. R., and ILSERIC, A. R. (1964) Wives who live apart, *The Times*, July 31st, 1964.
- BOWLBY, J. (1952) *Maternal Care and Mental Health*, W.H.O., 1952.
- BRONFENBRENNER, U., and DEVEREUX, G. (1958) *Legislation and Social Class*. In: Eleanor E. Maccoby, T. H. Newcomb and E. L. Hartley, Ed. *Readings in Social Psychology*, Holt, 1958.
- BRONFENBRENNER, U. (1961) The Mirror Image in Soviet-American Relations: A Social Psychologist's Report, *J. Soc. Issues* 17, No. 3, pp. 45-46.
- CAPLAN, G. (1961) *An Approach to Community Mental Health*, Tavistock Publications, 1961.
- CAVENAGH, W. E. (1959) *The Child and the Court*, London, Victor Gollancz, 1959.
- Children and Young Persons: Scotland, 1964*. Report by the Committee approved by the Secretary of State for Scotland, H.M.S.O., Cmnd. 2306, 1964.
- CLARKE, A. D. B., and CLARKE, A. M. (1959) Recovery from the effects of deprivation, *Acta psychol.* 16, 137.
- CLARKE, A. D. B., and CLARKE, A. M. (1960) Some recent advances in the study of early deprivation, *J. Child Psychol. Psychiat.* 1, 26.
- COOPER, B., and NICHOLAS, G. (1964) *Crime and the Labour Party*, Conservative Party Pamphlet.
- ELKIN, E. (1962) *The Child and Society, the Process of Socialization*, Random House.
- ERIKSON, E. H. (1951) *Childhood and Society*, London, Imago.
- EYSENCK, H. I. (1956) (a) Inheritance of extraversion-introversion, *Acta psychol.* 12, pp. 95-100.
- EYSENCK, H. J. (1960) (b) The Development of moral values in children, *Brit. J. Educ. Psych.* 30, 1, 11-21.
- EYSENCK, H. J. (1964) (c) *Crime and Personality*, Routledge and Kegan Paul.
- FOSS, B. (Ed.) (1963) *Determinance of Infant Behaviour*, Vols. 1 and 2, London, Methuen.
- FOULKES, S. H., and ANTHONY, E. J. (1957) *Group Psychotherapy*, Penguin Books.
- FREUD, A. (1965) In: J. Goldstein and J. Katz, *The Family and the Law*, N.J., The Free Press.

- FREUD, S. (1946) *The Ego and the Mechanisms of Defence*, London, Hogarth Press.
- GARDNER, G., and MARTIN, A. (1963) *Law Reform Now*, London, Victor Collanz.
- GEWIRTZ, J. L., and BAER, D. M. (1958) The effect of brief social deprivation on behaviour etc., *J. of Abnorm. and Social Psych.* **56**, pp. 48-56.
- GEWIRTZ, J. L. (1959) Discussion of the use of open end conditioning techniques in children, pp. 127-136 in S. Fisher (ed) *Child Research in Psychopharmacology*, Illinois, Chas. C. Thomas.
- GIBBENS, T. C. N. (1959) Supervision and probation of adolescent girls, *Brit. J. Del.* **10** 84-103.
- GLUECK, S. (1962) Dilemmas in the partnership of law and psychiatry. In: *Law and Psychiatry*, Tavistock Publications.
- HEBB, D. O. (1955) The mammals and his environment, *Amer. J. Psychiat.* **11**, 826-831.
- HIMMELWEIT, H. T., OPPENHEIM, A. N., and VINCE, P. (1958) *Television and the Child*, London, O.U.P.
- HOWELLS, J. G. (1963) Child-parent separations as a therapeutic procedure, *Amer. J. Psychiat.* **119**, 922.
- HOWELLS, J. G., and LAYNG, J. (1955) Separation experiences and mental health, *Lancet*, Aug. 6th, 1955, pp. 258-288.
- HOWELLS, J. G., and LAYNG, J. (1956) Child-parent separation: its causes and care of the child during separation, *The Medical Officer*, Nov. 2nd, 1956.
- HOWELLS, J. G., and LAYNG, J. (1956) Day foster care and the nursery, *Lancet*, Dec. 15th, 1956, pp. 1254-1255.
- HOWELLS, J. G., and LAYNG, J. (1956) The effects of separation experiences of children given care away from home, *The Medical Officer*, pp. 26, 95 and 345.
- INHOLDER, B. (1962) A contribution of the genetic method to the study of various phenomena in the psychopathology of thinking, *Clinical Psychology, Proceedings of the XIVth Int. Congress of Applied Psych.* Vol. V, 1962.
- JAMES, T. E. (1962) *Child Law*, London, Sweet and Maxwell.
- KAGAN, J. S. (1963) in MUSSEN, P. H., CONGER, J. G., and KAGAN, J. S. *Child Development and Personality*, New York, Harper and Row.
- KAHN-FREUND, O. (1960) The Legitimacy Act, 1959, M.L.R./56.
- KLEIN, M., HEIMAN, P., ISAACS, S., and RIVIERE, J. (1952) *Development in Psychoanalysis*, London, Hogarth Press.
- LEWIN, K. (1947) Frontiers in Group Dynamics, *Hum. Relat.* **1**, 2-38.
- LEWIS, H. (1954) *Deprived Children (the Marshal Experiment)—A Social and Clinical Study*, London, O.U.P.
- LONGFORD, the Earl of (1964) *Crime, a Challenge to us all*, Labour Party Pamphlet.
- LORENTZ, K. (1935) Companionship in bird life. In: C. H. Schiller (ed.) *Instinctive Behaviour*, London, Methuen.
- LYNN, R., and GORDON, J. E. (1962) Maternal attitudes and child socialization, some social and national differences, *Brit. J. of Soc. and Clinical Psychology*, **1**, Part 1, Feb. 1962, p. 52.
- MANNHEIM, H. (1955) *Group Problems in Crime and Punishment*, Kegan Paul.
- MCGREGOR, O. R., and ROWNTREE, G. (1962) *The Family in Welford*.
- MILLER, D. (1964) *Growth to Freedom*, Tavistock Publications.
- MILLER, E. (1958) Problems of Custody, from *The Twentieth Century*.
- MILLER, and DOLLARD (1941) *Social Learning and Imitation*, New Haven, Yale University Press.
- MORSEN, O. H. (1960) *Learning Theory and the Symbolic process*, New York, John Wiley.
- MURRAY, H. A. (1963) Studies of stressful interpersonal disputations, *American Psychologist*, **18**, No. 1.
- MUSSEN, P. H., YOUNG, J., GADDINI, B., and MORANTE, C. The influence of father-son relationships on adolescent personality and attitudes, *Brit. J. Child Psychology and Child Psychiatry*, **IV**, No. 1, April 1963.

- MUSSEN, P. H., CONGER, J. J., and KAGAN, J. (1964) *Child Development and Personality*, London, Harper and Row, 2nd edition.
- NAESS, S. (1959) Mother-child separation and delinquency, *Brit. J. Del.* **10**, 22.
- ORMEROD, ROGER, SIR. (1964) The developing relations between the law and the social sciences, *Brit. J. Criminology*, **4**, 4 April.
- PAXTON, M. (1963) *The Family and the Law*, Penguin Books.
- RUBENSTEIN, R. (1963) *John Citizen and the Law*, Pelican.
- SCOTT, P. D. (1964) Approved school success rates, *The Brit. J. of Criminology*, Vol. **4**, No. 6. October 1964.
- SCHACHTER, S. (1959) *The Psychology of Affiliation*, The Trauford University Press.
- SCHAEFER, E. S., and BELL, R. Q. (1958) Development of a parental attitude research instrument, *Child Development* **29**, 339-361.
- SCHAFFER, H. R. (1958) Objective observations of the personality development in early infancy, *The Brit. J. Med. Psychol.* **31**, 174-183.
- SEARS, R., MACCOBY, E., and LEVIN, H. (1957) *Patterns of Child Rearing*. Evanston, Ill. Row, Peterson.
- SEARS, R., RAU, L., ALPERT, R. (1958) *Identification and Child Rearing*.
- SHIELDS, J. (1958) Twins brought up apart. *Eugenics Review*, **50**, pp. 115-133.
- SLAVSON, S. R. (1963) *An Introduction to Group Therapy*, New York Commonwealth Funds.
- STOTT, D. H. (1936) The Effects of Separation from the Mother in Early Life, *Lancet*, **1**, 724.
- STOTT, D. H. (1962) Delinquency and Cultural Stress, *Brit. J. of Social and Clinical Psych.* Vol. 1, Part 3, Oct. 1962, p. 182.
- TANNER, J. M., and INHELDER, B. ed. (1956) *Discussions on Child Development*, Tavistock Publications, Vol. 2, p. 228. (Proceedings of the Second Meeting of the W.H.O. Study Groups on the Psychobiological Development of the Child, London.)
- THIBAUT, J. W., and KELLY (1959) *The Social Psychology of Groups*, New York, John Wiley and Sons Inc.
- TINBERGEN, N. (1951) *The Study of Instinct*, O.U.P.
- TRASLER, G. (1962) *The Explanation of Criminality*, Tavistock Publications.
- VERNON, P. E. (1964) *Personality Assessment*, London, Methuen.
- WILKINS, L. T. (1964) *Deviant Behaviour*, Tavistock Publications.
- YARROW, L. J. (1961) Maternal deprivation: towards an empirical and conceptual re-evaluation, *Psychol. Bull.* **58**, 459.
- YARROW, L. J., and YARROW, M. R. (1964) Personality continuity and change in the family context, in P. Worchel and D. Byrne (ed.), *Personality Change*, New York, Wiley, pp. 489-523.

SECTION 4

SOME THERAPEUTIC METHODS AND
PROPHYLAXIS

CHAPTER 1

The Value of the Therapeutic Consultation

by D. W. WINNICOTT

There is an aspect of applied psycho-analysis which has come to interest me more and more in the past two decades. This is the exploitation of the first interview, or the first few interviews. I am in process of publishing a series of such interviews, and here I shall give one example, Ashton, aged 12 years.

First I must make it abundantly clear that what I am describing is not psycho-analysis. If starting an analysis I do not adopt the procedure described here. Nevertheless I hold the view that in order to prepare himself to do this work the therapist should make himself thoroughly familiar with the classical psycho-analytic technique, and should carry through to the bitter end a number of analyses conducted on a basis of daily sessions, continued over the years. Only in this way does the analyst learn what has to be learned from the patients, and only in this way does the analyst master the technique of withholding interpretations that have validity without immediate or urgent relevance.

I would not say that a full-scale analysis is always better for the patient than a psychotherapeutic interview. Treatment by psycho-analysis often leaves the symptomatology untouched for a period of time during which social repercussions may infinitely complicate the issue; moreover, treatment may necessitate the child's removal from a good-enough home to a strange setting and this again is a complication that were better avoided. In other words, there are cases in which a quick symptomatic change is preferable to a psycho-analytic cure even though one would prefer the latter.

Apart from this, there is a vast clinical demand for psychotherapy that is not related in any way to the supply of psycho-analysts, and therefore if there is a type of case that can be helped by one or three visits to a psycho-analyst this vastly extends the social value of the analyst and helps to justify his needing to do full scale analyses in order to learn his craft.

It is well-known that the first interview in an analysis can contain material that will come forward for analysis for months and even years. Students are

advised to make careful notes of first interviews, notes which can be used at all later stages and which make possible a reconstruction of the analysis in terms of the discovery of deeper and more subtle meaning in events and free associations given in the first session.

That which I am calling the psychotherapeutic interview makes the fullest possible use of this relatively undefended material. There is real danger in this work, yet there is danger of doing nothing at all, and the risks come from the therapist's timidity or ignorance rather than from the patient's feeling of having been tricked.

The psychotherapist at this the stage of the first interview is a subjective object. Often a child will dream of the psychiatrist *the night before* the day of the interview, so that in fact the psychiatrist is fitting into the patient's preconceived notion. In another language, the patient brings to the situation a certain measure of belief or of the capacity to believe in a helping or understanding person. Also he brings a measure of suspicion. The therapist cashes in on what the patient brings and acts up to the limit of the chance that this affords. The patient goes away without having made an objective perception of the therapist, and a second visit will be needed to get the therapist objectified and shorn of magic.

There is a difference, then, between this technique and that of psychoanalysis in that whereas in the latter the transference neurosis gradually unfolds itself and is used for interpreting, in the psycho-therapeutic interview there is a fore-ordained role for the therapist, based on the patient's pattern of expectation. The difficulty often is for the therapist to do as well as he could find himself allowed to do. Many patients do indeed expect to be basically understood immediately, and it might be said that we either fit in with this or else we work on the basis of "psycho-analysis or nothing." Of course we cannot understand immediately unless we are briefed, and in the first interview the patient is often willing and indeed eager to brief the therapist, giving all that is needed for the deep significant interpretation.

It often happens that we find a child has given all to the psychologist who is performing an intelligence test, and the fact that the material presented has not led to understanding (this not being included in the psychologist's aims) has proved traumatic to the child, leading to a strengthening of suspicion and an unwillingness to give the appropriate clues.† For this reason I have always seen my patients first, referring them to the psychologist where necessary, after I have come to grips with the case by doing something significant in the first interview or first few interviews.

I would say that it is a common thing for patients to go away from a first interview disillusioned and unwilling to make a further attempt to seek psychiatric help, because of the failure of the consultant to use the material presented. It is comparatively rare for a patient to be hurt by wrong inter-

† This especially applies in T.A.T. tests in which the patient has reached to unexpected ideas, fears, states.

pretations made in a genuine attempt to use what is presented, the mistakes in omissions being due to the limits that belong to all human endeavour. I learned this from my psychotic patients (borderline schizophrenics) who are remarkably tolerant of an analyst's limitations of understanding, though they may be at the same time extremely intolerant of irregularities in the analyst's behaviour (his unreliability, an uneven performance, display through reassurance of unconscious hate, bad taste, etc.).

TECHNIQUE

In order to make the most of a first interview the therapist needs to be very careful not to complicate the situation. All sorts of things need to be said and done which simply belong to the fact that the therapist is human and is not sitting on a professional high-horse and is nevertheless aware of the sacredness of the occasion. This is true regardless of the age of the patient.

A little girl, 2½ years old, saw me five times. She demanded that she should see someone to ask about a fear which her parents could not understand, and when she got some help from me she insisted on making further use of me until she had resolved her problem. Each time she gathered herself together for the interview and after it she emerged in a relaxed state. The fifth time, for instance, she came up (by train journey) curled up on her father's lap, sucking her thumb or her father's finger. She was very tense right up to her arrival at my door, and on entry she immediately went into my room and took up her position on the floor among the toys. After this interview she (now three years old) was in a happy state as usual. She was interested in everything she could see on the way home by train. In the afternoon she was playing constructively and with great satisfaction. In the evening she made one remark that was appropriate to the work of the session.

This was like a child's reaction to some analytic sessions but there was, in a sense, more at stake, because of the distance of the child's home from my room, which she actually talked about in the session.

A boy of 6, with a relatively low I.Q., the backwardness being secondary to an infantile psychosis, came to his first and only interview in a state of apprehension. The mother wrote: "He naturally wanted to know where we were going and we had to give him a definite answer because of his experience at 4 when he had his tonsils out. I didn't quite know what to say, so I mentioned something about learning at school and his sometimes annoying habit of finger-sucking. Anyway he mentioned after the interview with you that you hadn't asked him about this. He seemed to feel that I had misled him slightly... When he asked again why we had gone to visit you and not taken our other boys I replied that you were a friend and that we thought he would enjoy meeting you, and we had only taken

him as he was our biggest boy. He was contented with this answer. On that morning he had been very anxious to go straight to you and not waste time on proposed shopping."

This boy made significant use of his interview, and came away "delighted", and he was jealous of his parents when they came to see me a few weeks later.

It is good to be able to prepare the parents beforehand, perhaps by 'phone, that it will probably be best for the child to be seen first. The fact is that the parent may have to be neglected on this first occasion. It is the patient's right to be the patient, and if the parent cannot co-operate in this arrangement then one needs to consider whether in fact the ill person may not be the parent rather than the child. If it is the parent who is the patient, then the parent should be seen first, in which case it may be best to do nothing with the child, so as to avoid raising hopes that cannot be met.

It is axiomatic that if a proper professional setting is provided the patient, that is the child (or adult) who is in distress, will bring the distress into the interview in some form or other. The motivation is very deeply determined. Perhaps it is suspicion that is shown, or too great a trust, or trust is soon established and confidences soon follow. Whatever happens it is the happening that is significant.

A boy of 8 had a very rich interview with me; we had worked hard and I had been able to give help on the basis of the clues provided. At the second interview nothing happened at all. I allowed the boy his full hour, and all I said was: "I don't know what is going on but I do know that you have a reason to be in control of me. Last time you helped me to help you; this time I can do nothing." So we parted. That evening this boy casually told his mother while he was in the bath that a man had tried to assault him in the park; the mother said: "Did you tell Dr. Winnicott?" and he said: "No!" in a surprised way, as if he could not have imagined this to be an important thing to do. He had in fact told me in a better way, by being suspicious of me and by having me in his control. I saw him next day as an emergency case, and he gave me another richly rewarding interview, reporting the incident and his own imaginative homosexual yearnings, based on a relative father-deprivation.

The point in all this was the boy's communication through making nothing happen, and my acceptance of this as a communication.

There is no clear-cut technical instruction to be given to the therapist since he must be free to adopt any technique that is appropriate to the case. The main principle is that a human setting is provided and while the therapist is free to be himself he does not distort the course of events by doing things or not doing things because of his own anxiety or guilt, or his own need to have a success. It is the patient's picnic, and even the weather is

the patient's weather. The end of the interview belongs to the patient too, except where there is no structure to the interview because of a lack of structure in the patient's personality or in the patient's relating to objects, in which case this lack of structuring is itself communicated.

A student attempting to study my personal technique would need to study the way that I behaved in a long series of cases, and it would be found that what I did in each example belonged to that particular case. I can give only one example in full, and it must be emphasized that what I did here can only be taken as a description of what I did *in my contact with this boy*.

I choose this one example with the greatest difficulty because it may be thought that a set technique can be observed, whereas in order to gain an impression of my technique many other examples need to be examined.

I hope that the only set feature that will be observed after a broad examination of my cases will be a freedom on my part to use my knowledge and experience to meet the particular patient's need as displayed in the one session that is being described.

One more general observation: it is necessary to do this work in a wider setting in which there is opportunity for a case to slip over into another kind of child psychiatry category. There is no need for any case to fail (except where one lacks the necessary understanding, in which event there is no need for self-criticism). If the psychotherapeutic interview should prove inadequate even under the slogan: "How little need we do in this case?" then a more complex mechanism can be set in motion. The case can become one of those that need the full child psychiatry system of management.

It is wise, however, not to think in terms of *psycho-analysis* for the cases in which the psychotherapeutic consultation with its limited objective does not succeed; better, if psycho-analysis is likely to be a practical proposition to work from the start on the basis that psycho-analysis will be instigated. The reason for this is that a high-powered use of the first interview tends to make the initial stages of a classical analysis difficult, especially if the analysis is to be done by someone else, other than the initial consultant who went deep quickly in the first interview when attempting to make a diagnosis.

COMPLETE ACCOUNT OF A THERAPEUTIC CONSULTATION

Here is an example of a therapeutic consultation. There was a significant result in that the boy became able to go forward instead of continuing regressively in his emotional and intellectual development, and in his use of his good home and school environment. If the result had not been favourable then the management of the case would have altered, and this would have involved the boy's removal from the school to a home-from-home in the London area, which alone would have made possible a full psycho-analytic treatment. There were powerful reasons for avoiding this procedure.

Diagnostically in this case the label must be: towards schizophrenia, away from psychoneurosis, and not manic-depressive. Had he become more ill the schizophrenic features would have become more organized.

Case of Ashton, at 12 Years

This boy was referred to me by his General Practitioner.

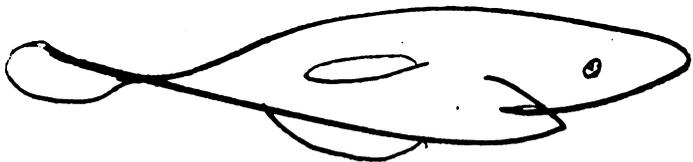
"... exceptionally intelligent but unfortunately with most of the snags of the people who approach a genius. He is very irritable, nery and worried about his health. He invariably becomes ill and runs a temperature prior to returning to school. Recently he has developed habit spasms and has become rather difficult to manage at home. In addition he has been having great difficulty with sleep and a lot of trouble with night-mares. ... the parents' views on coping with the situation are opposed ..."

In this case I saw Ashton first except for a few minutes at the start when I saw him along with his parents. The interview lasted an hour and a half, in the course of which the father disappeared to fulfil an engagement. At the end I saw the mother for two or three minutes, explaining why I had to give the whole time to seeing the boy.

Ashton turned out to be a very exceptional person as a description of the course of the interview will show. He had a married sister who has two children; he is therefore an uncle.

I give the minimum of information in order to make the case suitable disguised.

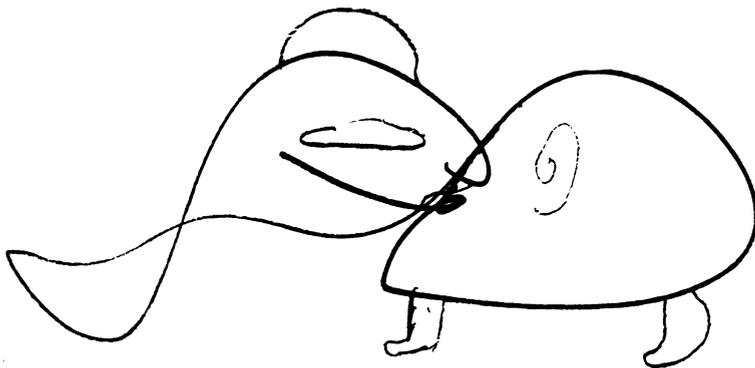
It was not difficult to form a contact. I quickly got evidence of the fact that this boy has a high intelligence, and in fact this applies to both parents and to the boy's sister. There was paper in front of us and Ashton and I started by playing squiggles. (We take it in turns to make a squiggle; the other one turns it into something. It is a game without any rules at all.)



(1) He turned my first squiggle into a fish.



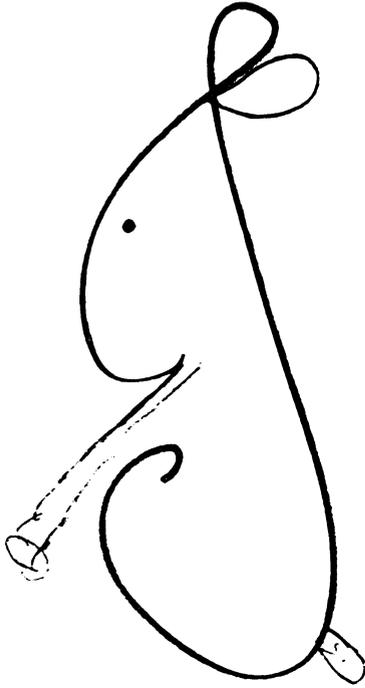
(2) I turned his into a snake with a snake charmer.



(3) He turned mine into a fish swallowing a turtle or a large jellyfish. He was very amused at the squiggles which seemed to mean something special for him.



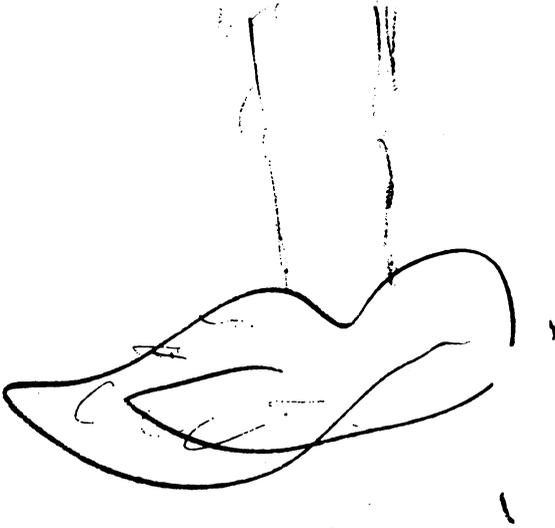
(4) I turned his into a kind of dog.



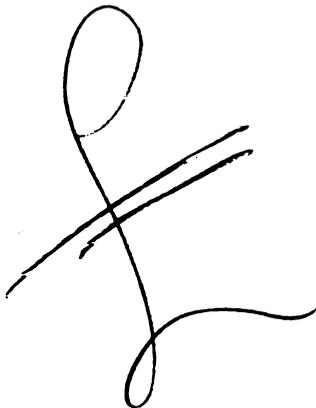
(5) He turned mine into a rabbit sitting down.



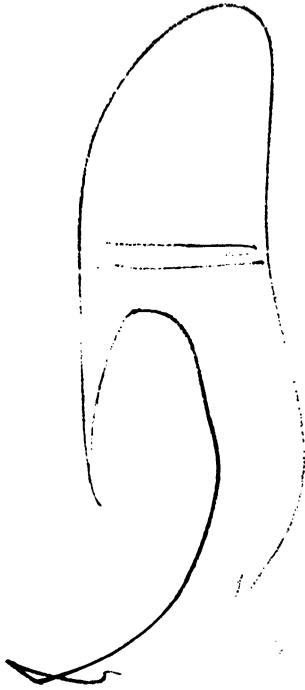
(6) I made his into a face.



(7) He turned mine into a wooden clog.



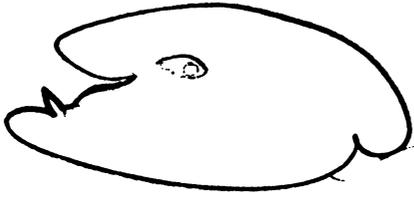
(8) I made his into a pound sign.



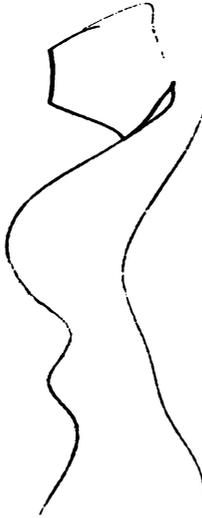
(9) He turned mine into a bottle opener.



(10) I turned his into a kind of figure or doll and from this we discussed objects that people take to bed with them to keep them company. He told me about his having had two teddies.



- (11) He turned mine into a fish-head, like one in an advertisement he knew. At this point I could introduce the idea of dreams. "When you dream do you see things like that (fish-head)?"



- (12) So he drew this. It is "a detail of a weird dream, very difficult to describe or to draw. It is ghostly and moves". "It tied me up with pieces of string. When I broke the string it looked at me rather nastily."

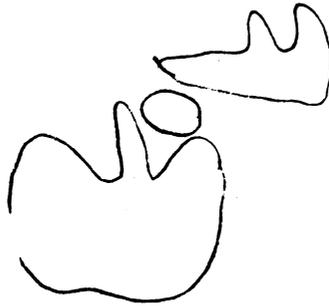
It is difficult to describe the way in which Ashton took over the interview. When he spoke it was in a highly sophisticated rather stilted way like a much older and an erudite person. He operated, so to speak, through the intellect, and had a quick grasp of intellectual concepts and of the relationships between ideas.

Ashton then went on to talk about his dreams and about nasty noises. "You can't draw them; it might be as if a house were falling down. Once I had a nasty experience. I was in bed and as I could not go to sleep I was listening to music, that is to say, going through a symphony. I must have been half asleep because at a pause, when there was a break in the music, the next bit came as a weird noise instead of as the bit of music that was due." This seemed to him to be a very

frightening state of affairs and it was quite clear by this time that music meant a great deal to him because it deals with a chaotic and frightening noise hallucination by displacing it.

There was a pause here, and he recounted how in physics he once made a machine "which was supposed to make sand pictures if you made a noise." He went on to describe something that was very frightening. "I turned over in bed and saw the curtains drawing themselves to and fro. The worst thing was that in the dream the curtains were left drawn to, but on waking I found they were *not* drawn to." Then he said, as if to get away from the deep meaning of dreams: "Dreams, you know, are often governed by the day-before happenings. For instance, the bathroom light went off so I had a dream like that the next night."

After this we talked about music and painting as a way of getting control over hallucinations. Then he said: "Recently I did an abstract; it was a rather complicated drawing, but I will take this bit out of it to show you." At this point he drew.



(13) (Detail taken from the abstract.)

COMMENT

As it turned out this was the main thing in the interview. I felt he had trusted me with something sacred, he had almost given me the clue to his abstract, although an abstract is by nature a hiding as well as being a demonstration of a constellation in the artist's personal pattern of inner economy.†

I ventured an interpretation, hoping it might be right to some extent, and I knew I must speak in terms of primitive mental mechanisms. I said: "It could be a representation of simultaneous acceptance and refusal."‡

† Afterwards I saw the whole drawing and I would not have been able to have used the total picture in the way that I used the detail, as the main theme was almost hidden.

‡ I could have gone on to say that the object was himself, in between the opposing attitudes of the parents — see the letter from the referring doctor.

Ashton was very excited about this interpretation. He exclaimed: "When I drew this picture I had no idea it could mean anything. I know that it had to do with a picture I had seen the day before, of a monster with the lady on the tip of its tongue."

Although I did not expect to be understood I made another interpretation. I said: "This has to do with your love of your mother which includes eating her. The monster in that case is yourself." I said that the object in the abstract could be the breast or the nipple, and that the simultaneous acceptance and refusal could be a conflict in him (Ashton) because of protecting the mother from being eaten and destroyed.

To my surprise he said: "I understand perfectly what you are saying, but it is new to me." Then he went on to describe watching his nephew taking the bottle. I found that he had not been told (or he had not assimilated the knowledge) about breast-feeding, and he was very pleased to have the chance to discuss this with someone. As if to clinch the matter he added: "That reminds me of a story father told some people, and I could not see why it was thought to be funny. This was of a small child who had said: 'If I like something I eat it.'"

Here I felt encouraged to talk and I gave him all I knew about oral sadism and early object relationships, and the beginnings of the sense of guilt.

Ashton was now eager to communicate freely about things that interested him. He told me of a dream in which there was a ghost in the house. To get rid of the ghost he used a magic formula which he was able to spell out exactly. Some of the words were familiar (invisible, spurious, matured); others were invented words. I could not make accurate notes of this formula.

Next he told me of an earlier dream in which there was a car travelling along with a man in it. "There was another in the car, either in front or behind, and this man attacked the other. I rushed to his aid. The frightening thing was that I realized that both the men were myself."

I knew this had been remembered specifically for me to interpret. What I said was: "That nicely gets you out of the clash between you and father when you both love mother."

This was what he wanted because he went on to tell me another dream of early years, a dream of a level crossing. "A train ran across a level crossing and killed an animal." From my point of view the symbolism here was clear. It was a dream of the danger to the child of intercourse between the parents. I said nothing, and he went straight on with his own comment, which gave the characteristics of his own personal defence organization. He said: "I can see now that the important thing was the death of the animal, but what I remembered until now was not the death of the animal but the noise of the train

coming; and then I forgot that and remembered the music which keeps the noise away." Here then was a clear statement of music dealing with noise, and noise remembered in avoidance of the death of the animal (child).

Together Ashton and I linked up this noise with the sound of the parents in intercourse. He knew of laboured breathing in intercourse. This led on to the further exploration of the antagonism between son and father. In his curiously stilted way he said: "Is the son jealous of the father's adult relationship to the woman or the father jealous of the infant's infantile possession and intimacy?" He added: "I think that in my case the accent is on the second of these two alternatives." He then reconstructed the child's position in between the parents in bed: "up to a certain stage he would be in possession of his mother; then after a period of time the father resumes his adult relationship with the mother and the child is the one eliminated, as the animal was in the dream of the train and the level crossing."

It will be agreed that this boy's ability to take up ideas and develop them was quite out of the ordinary.

I had to terminate this one-and-a-quarter hour interview because it seemed unlikely to end by natural process. Ashton was quite willing to go and he was obviously very satisfied with what had happened.

Subsequent Procedure

Four months later Ashton had his second interview with me. He and I communicated again through a squiggle game but there was no significant feature arising out of the game. This interview was necessary because of the patient's need to get me down to my real size. I can do nothing except on the basis of clues offered by the patient.

The parents came for a long interview and they showed that in spite of high intelligence they had not understood deeply what was going on in their son. They made good use of what I was able to tell them of the interview. Also they gave many important details which cannot be reported here because of the need to keep the case unrecognizable. Fortunately, it is not necessary for me to give these additional details in this description of a psychotherapeutic interview in which significant things happened and which led to a clearing up of the boy's main symptoms.

A full description, if it could be given here, would show Ashton as a boy who has many of the general features of a schizoid personality, but who is a near-genius. He had been degenerating prior to the date of the consultation, and after the first interview he went forward in all respects, and especially in the special art form in which he is creative; moreover he ceased to find it difficult to get to school from home, and he made excellent progress scho-

lastically being in all ways in advance of his age except when hampered by psychiatric disorder.

COMMENT

In this sort of case the interview cannot do all. At best it unhitches at the place where the patient's development is hitched up. My interpretation of my central theme of the abstract did precisely this. The increased understanding of the parents was of special importance, and a cessation of the opposed attitudes that the referring doctor described and which the boy showed in his "abstract".

Also, very important in this case was the school's special effort to understand and to tolerate this odd boy's personal struggle along with an appreciation of his special talent.

It was with great relief to the parents that the case could be managed with the boy still living in his home several hundred miles from the nearest psychoanalyst, without change of school. This method therefore justified itself in this one case.

SUMMARY

1. A diagnostic interview must of necessity be a therapeutic one, since one of the main criteria for diagnosis is the response that indicates the degree of rigidity or relative lack of rigidity of the defence organization. The overall clinical picture may be deceptive without this additional key to the assessment of the patient's personality.
2. A human setting is provided, and into this setting the patient brings and displays the immediate strain and stress.
3. The psychiatrist is a subjective object, and the use that is made of the interview represents the patient's capacity to believe in significant persons, that is if the psychiatrist does not interfere with the pattern of the interview.
4. The psychiatrist needs to have training and experience based on long treatments, in which the work is done on the transference material as it gradually evolves, and which allows for the patient's objective perception of the analyst.
5. In this work interpretation is reserved for the significant moment, and then the analyst gives as much understanding as it is in his power to give. The fact that the patient has produced the material specifically for interpretation gives the therapist confidence that interpretation is needed and that it is more dangerous not to interpret than to interpret. The danger is that the patient will feel confirmed in the belief that no-one understands and that no-one wants to understand.

6. This is not "wild" interpreting; though even wild interpreting may convey the idea of a wish to understand.
- A girl of 10 said to me: "It doesn't matter if some of the things you say are wrong because I know which are wrong and which are right." A little later on in the treatment she said to me: "I shouldn't go on guessing if I were you", implying that she could tolerate my not knowing.
7. The example given (Ashton) displays the following special features:
- (a) Case of a boy, 12 years old, presenting clinically as a schizoid personality, with good home and a school that wished to cooperate. High intelligence.
 - (b) Preliminary phase of play.
 - (c) Imagination leading to dream.
 - (d) Dream leading to auditory and visual hallucinations.
 - (e) Second phase in which the boy risked exposing the central theme of his "abstract." The interpretation of this in terms of conflict proved to be the dynamic moment of the interview.
 - (f) Subsequent phase in which the boy followed up with rich material which he had never hoped would be understood. This led to the Oedipus complex.
 - (g) The boy used this interview in such a way that his main symptomatology cleared up. He remained somewhat schizoid in personality type, but his tendency to psychiatric degeneration changed into a definite forward movement in respect of his emotional development. Follow-up: 5 years (1966).

CONCLUSION

Attention is drawn to the unique opportunity which a first interview affords in psychiatry.

CHAPTER 2

Community Therapy

by SERGE LEBOVICI

INTRODUCTION

If we are to understand the psychiatric disorders of children and treat them rationally, we must study their environmental features. Child psychiatry is in fact a chapter of pathology in which just to study the symptoms, which manifest themselves essentially in behaviour, would never lead to a correct diagnosis. Behavioural disturbances in children are the expression of a complex and progressive situation which reflects difficulties in the family's interpersonal relationships, and these can be studied only with reference to a larger social context, taking into account the impact of its various environments on the child's familial and personal life. This double situation—on the one hand the slight importance and labile character of the symptoms in child psychiatry, and on the other the importance of the family's living conditions and its place in the socio-economic and cultural context—has led to the therapeutic and clinical distinction between structural and reactional disorders. For the former group, we speak of organization and structure, or at least pre-structure, in referring to the concept of neurosis, psychosis, or even disequilibrium and psychopathy. For these structural disorders require personal treatment, either as an outpatient or in an institution. The reactive disorders, on the other hand, call for therapeutic measures aimed essentially at the child's family and environment, personal psychotherapy being of only secondary importance.

This convenient schematic distinction has long remained valid and provided an important theoretical point of reference for the child guidance clinics, which seem specially organized for dealing with disorders of medium severity in which the reactional element is predominant. In such cases one is led to adopt bifocal therapy, aimed simultaneously at the child and his family and usually applied by two different therapists. Nevertheless, even in these cases, bifocal therapy has come in for a considerable amount of adverse criticism in the past few years, and many authors have insisted on the importance of family treatment, various techniques of which have been studied, to which we shall return later.

Further, the distinction between structural and reactive disorders seems to be based on certain theoretical concepts of psycho-analysis, and particularly those which regard the child's earliest experiences as most decisive in explaining not only the genesis but also the specific characteristics of its objective relationships. It is no doubt possible to explain this trend by referring to the work of the so-called English School of Psycho-Analysis. Melanie Klein⁽¹⁾ in studying child phantasies, sketched the picture of what she called the central depressive position, between paranoid and depressive; in this way she defined the site of origin of psychoses and neuroses in the child and the adult. In her opinion this central depressive position develops during the second half of the first year of life, after which period the further evolution of the child's psychic organization is more or less definitely fixed. Similarly, John Bowlby,⁽²⁾ who has studied the peculiar early relationships between the child and its mother, regards the various manifestations of anxiety in the child as a result of the traumata that may interrupt the organization of a link which is established from the earliest days between the child and its mother. This view is supported by the ethological references on which this author bases his views.

Though all psycho-analysts, whether child or adult, insist on the decisive importance of the first structural relations between the mother and the child; though the geneticists have shown that the Ego is based on perception of the object; though recent studies of communication tend to consider the objective relationship as the result of a reciprocal reaction between mother and child, most psycho-analysts remain convinced that the organization of personality in the process of development is not solely a result of early experiences, but that the external environment, familial and institutional, continues to play an important part in these young children, even up to school age.

In other words, admitting that the psychological object or the real living and inanimate objects which surround the child are ambivalent precisely because of the neonate's immaturity which makes it dependent on these objects, it should not be forgotten that in its behaviour, throughout the stages of maturation, the child reacts not just to objects, but to internalized objects as well as to its projections of these internalized objects on the external world. In other words, in development its ego is built up as a function of the earliest experiences, but also as a function of the manner in which its later experiences are related with these early experiences, not forgetting the fact that these late experiences may modify the secondary elaboration which occurs as part of childhood phantasies in connection with the very earliest experiences.

These complex considerations raise some doubt concerning the validity of the relation between structural and reactive disorders. In any case, they leave one thinking that reactive disorders in the strict sense of the term—those that are definitely connected with the child's life-conditions—must be

highly exceptional. Conversely, one must conclude that in apparently structural disorders it is essential not to neglect forms of treatment that depend on the environment or can be applied through the child's conditions of life, since at this age pathological lesions are still so labile.

In this perspective, it becomes possible to understand Anna Freud's⁽³⁾ chronological study of the defense mechanisms of the ego. The most regressive aspects in the child's behaviour or phantasies do not suggest that these disorders originate at the beginning of life. We should also take into consideration the failures in maturation of the ego, and the consequent difficulties of maturation brought about by the complicated vicious circles effected by the pathogenic environment and the child's reactions to the images it constructs from more or less pathogenic experiences.

We do not propose here to study the pathogenic factors acting at the social level, except to note that the children's future seems to be decisively affected by the housing conditions and socio-economic and cultural level of their families. Behaviour disorders and disturbances of adaptation are often severe in families that are highly asocial or are victims of the social scourges that accompany a low economic and cultural level (tuberculosis, alcoholism, delinquency and crime, etc.).

On the other hand, if we consider the distribution of the community services and the public who use them, it is clear that as a rule these services touch only a relatively small part of the population for which they are intended viz. the part which, owing to its socio-economic and cultural level and the pressure exerted on it by the community, has begun to be interested and anxious about their child's troubles, whether at home or at school.

For instance, disturbances in a child's adaptation to school-life will clearly cause more anxiety as the family's social and cultural levels rise. Some minor disturbances in behaviour seem to be of no significance whatever in families of low socio-cultural level. Similarly, intellectual subnormality causes most anxiety in communities with satisfactory economic and cultural environments. In such communities, feeble-minded children run a considerable risk of being less well tolerated or even rejected. On the other hand, communities with an insufficient cultural level and a bad economic level seem to produce more feeble-minded children than those in more satisfactory economic circumstances.

This question is complicated by the fact that the establishment of a community service always increases the morbidity rate or at any rate seems to increase it, thus creating needs which the community had hitherto not felt. In child psychiatry this apparent increase in the morbidity rate, due simply to the establishment of a new service, has the effect of making the means available to a community always seem insufficient.⁽⁴⁾

In recent years, considerations of this kind have led child psychiatrists to aim their therapeutic efforts at the community rather than at individuals, by searching for the latent disorders that may be the most important for the

children's future, and by treating the community itself as responsible for the children's disorders.

These considerations lead us to study community therapy from two angles, that of the milieu and that of the community as such:

1. Since the child's disorders cannot be regarded in isolation, there is a need for treatment which takes into account its milieu of life, not only that of the family but also that of the community institutions, which may play either a pathogenic or a therapeutic role.

2. Preventive treatment of the community is one aspect of child psychiatry, which acts either by improving the community's mental health, and accordingly the state of its constituent families, or by curing the disorders found to be present in the community.

1. Milieu Therapy

In this section we shall only briefly consider the treatment of the family, regarded as the living milieu of the child, but will give detailed attention to what is nowadays generally called "milieu therapy".

(a) Family Psychotherapy⁽⁵⁾

The activities of the child guidance clinics have almost always been organized on the basis of a simultaneous action on the child and its family. In particular, when psychotherapy is organized, it is practically always associated with social case-work on the family and particularly on the mother, as a rule through the intermediary of a psychiatric social assistant. This bifocal therapy is necessary because the parents must understand what is being done for their child, but more particularly because the mother may still play a peculiar pathogenic part because the special organization of her personality provokes reactions in the child. In most cases it cannot be said that the mother exerts an actual psychotherapeutic effect, but the aim is not only to enable her to support the treatment being given and strengthen the reactions it provokes, but also to modify her understanding of her child's behaviour and modify her own behaviour, analysing it in the light of her own past.

This practice, which is applied in almost all child guidance centres, has stimulated some criticism. The fact that two people take part in the therapy does not simplify the position, although it may also have advantages. Communication between the child psychotherapist and the social assistant who deals with the mother is indispensable, though it often complicates the therapeutic process, while both are commonly under the impression that the professional secrecy indispensable with this treatment is not being respected. The transference situation and the contra-transference attitudes engendered are apt to become highly complicated and confused.

Some say that the complex interpersonal relationships existing within the family would be better manipulated by a single therapist. Further, it has been

proposed that the family should be regarded as a genuine group whose members would be treated as in group therapy. This was the origin of family therapy, though its technical methods still differ considerably from those of group therapy. Some look upon family treatment as only a supplement to individual psychotherapy and psychosocial case-work. Others regard it as indispensable, especially in cases where the treatment is aimed at deconditioning relations of the sado-masochist type which have become established between the child and its mother. Thus, while family treatment sometimes constitutes only a supplement to individual psychotherapy conducted along its classical lines, in other cases it may be regarded as a specific form of treatment aimed at developing the family group as a whole and simultaneously. In the scope of this communication it is impossible to give technical details of these various forms of family treatment, which most authors think should be reserved for children of 10 years and over. With most of these methods, the child patient is placed in the centre of treatment, together with his mother. However, in other cases it is thought useful to bring in the father, and sometimes even the patient's brothers and sisters also.

It goes without saying that the treatment is organized in this way not for reasons of economy but only for the sake of efficiency.

One might compare these methods of family treatment with those effected through the mothers, either in the absence of their children or in the presence of younger children. The promoter of this technique was Freud himself, who, in the first case of child psychotherapy that he published—the case of little Hans who had developed a phobia for horses—treated the child through his father as intermediary, advising him on the interpretations he might give his son. Therapy of the same type has since been described many times.

(b) *Milieu Treatment*

This subject has been studied mostly in connection with institutional treatment of children, where it is an indispensable aspect of the therapeutic plan.⁽⁶⁾ It is in fact no longer possible to consider that an institution, whether specialized or non-specialized, should limit itself to supplying the child with an environment where it will be easier to apply the various forms of therapy and re-education which analysis of the case shows that it needs. This idea has no doubt played a part in the proto-history of the institutional psychiatric treatment of children. But the organization of therapy planned only to create the possibility for the child to receive the various forms of treatment it needs, would probably lead to a muddle. The multiplicity of therapies would in fact involve a danger that diffusion of transference phenomena would render the child's behaviour incoherent. The opposition between educational and therapeutic measures would make it possible for the child to escape from both, on the one hand because he does not understand

the differences in behaviour between his parent substitutes and his therapists, and on the other because his complex reactions must provoke dangerous oppositions between the two categories of staff who have charge of him.

In fact, institutional treatment must enable the child to develop and expand in a favourable environment where the various forms of treatment given are combined as harmoniously as possible and special methods of education are organized. Further, the institution itself should become a therapeutic tool. In a sense the institution should become a therapeutic community to which the child can effect what has come to be known as an institutional transference.

How the therapeutic climate of milieu therapy is to be organized naturally depends on the institution's social structure and the views of its management. If the institute is small enough to be regarded as a single social group, but is nevertheless equipped to offer various types of treatment and attract patients who need to be dealt from three different points of view of assessment, education and psychiatry, these children will naturally be grouped according to their dormitories, school activities, leisure activities and other occupations. A systematic grouping in "families" may be preferred. Whatever solution of the educative problem is adopted, and on whatever school of psychiatry the treatment is based, the principle of the modern institutional centre is to facilitate and promote the child's development under specialist control. Special forms of psychiatric, educational and social treatment can be applied to meet the requirements of individual cases.

The concept of milieu treatment implies that the establishment itself is called on to play an active therapeutic part, and that it offers the possibility of modifying this role and methodically adapting it to circumstances and needs. In this way, the institutional centre becomes a true therapeutic tool not only because the daily routine is organized so that the child must keep to a regular time-table—which includes facilities for mental and physical relaxation after work and makes it possible for the child to profit from recreative and cultural activities—but also because it serves as a therapeutic instrument in all the situations, some of them unexpected, which result from group life.

Both in theory and in practice, the importance of milieu treatment may vary, but in any case, the milieu exerts a predominant influence in the child's life.

The aim of milieu treatment is to improve the child's relations with its social environment, first by making its reactions more realistic. All the facilities of the centre are brought into action to achieve these aims, and the staff must therefore receive suitable specialist instruction. To some extent, the staff has to play the parents' part and they must therefore be ready to serve the children at all hours of the day or night, regardless of the hours set apart for class instruction or individual therapeutic interviews. In so far as the staff promote the children's normal development through giving them

a social education while constantly making use of the influence of interpersonal relationships, they create a psychological and dynamic milieu.

In such a milieu there is no place for rigid authoritarianism; instead, the aim should be a liberal way of life and a climate of tolerance, though this does not exclude a methodical organization of each child's daily life. Intensive character and personality studies have led to the conclusion that the staff, being adults, must present a firm attitude towards aggressive conduct, particularly when dealing with children who might otherwise develop guilt feelings. An atmosphere of controlled freedom is a good general rule, particularly because the complete absence of restraint sometimes favours the disappearance of impulsive antisocial conduct. Modern methods forbid a system of regulations and automatic punishments, but a liberal educational atmosphere does not exclude the application of moderate sanctions, which are acceptable to the children and furnish them with norms that enable them to assess their progress and learn to control themselves.

The therapeutic role of the milieu can be summed up as follows:

1. In the daily life of the institution, the staff who care for the children create the desired therapeutic atmosphere by their attitude to one another and the children and by the measures they take.

2. The mere fact that, in a therapeutic climate, good relations between a child and the adults are established, often has a favourable effect on the development of the personality of subjects with severe deficiency symptoms. It often proves impossible to modify their antisocial conduct without first creating closer links between them and the adults, which then improve the chances of successful psychotherapy.

3. The efforts of the re-educators and psychotherapists cannot so easily be rejected by the child when it is exposed to them in a therapeutic milieu than when the re-education takes place on the border-line of its life.

4. The fact that, in an institution, the child has sometimes to be subjected to control or surveillance, may have a regressive effect. But the constructive effect of the milieu on the child's personality finally enables the child to integrate its affective experiences in the situations created by its re-educational requirements. The formation of staple groups of children who take part in the collective activities and derive satisfaction from the reciprocal reactions of group life are in themselves a means of mutual education.

In this connection, Amado⁽⁷⁾ has written: "It is their human relations which serve as a common denominator of the different therapeutic and re-educative methods used in the institutions for maladapted children... If their relations are good, the children's personalities may, by different methods, be improved. If not, all attempts are doomed to failure."

"The relations of the adults to the children, and the relations between the children themselves, are inevitably affected by the atmosphere of the institution. In its turn, this atmosphere largely depends on the relations between the management and the staff."

“A director can never pay too much attention to his attitudes, his reactions and his feelings, which together make up his style of management. The same is true of his collaborators, as regards their handling of the children. And, we might add, the same is true of the children’s conduct towards each other and of each child to himself.”

Thus in organizing treatment in the institution it is best to avoid an accumulation of specialized psychotherapies and methods of education and to favour milieu treatment as far as possible. In view of the important part played by the transference phenomenon in psychotherapy and education, the various elements in the child’s treatment programme must be arranged in hierarchical order.

There is a danger that the various psychotherapeutic or educational treatments may become numerous enough to overburden the child and limit its experience of the collective life and the effects of the institutional milieu on its development. Too many forms of individual treatment may have the further result that the transference reactions become multiplied and complicated. In such cases the whole treatment programme should be given into the hands of a single person.

The life of the children in a group may strengthen the resistances sometimes provoked by contact with members of the staff, whereby some children feel in honour bound obstinately to oppose all the staff’s efforts. Hence all the children must be convinced that everything done in the centre has a therapeutic purpose.

Too much insistence on the psychotherapeutic role of the institution sometimes suggests that individual psychotherapy, in the strict sense of the term, is no longer used in such institutions, at any rate for most of the children admitted to them. The indications for individual psychotherapy rather than milieu therapy cannot be discussed here. Since the actions of all members of the staff have a therapeutic purpose, it is difficult to draw a precise line between such actions and individual psychotherapy.

Just as the introduction of individual psychotherapy into an institution gives rise to numerous technical problems, so group psychotherapy or the treatment of special therapeutic groups within the institution, using the usual methods of psychotherapy is far from easy in a closed group. As a general rule, the structure of the group depends on the personality of its constituent subjects and its form of organization. The staff, being adults, tend to construct groups of children in opposition to themselves and around their own person, as a form of identification.

The teacher, who is already in charge of a group of children, should be the real psychotherapist. When specialized group psychotherapists impose their influence on the social groups already in existence in an institution, there is a danger of confusing the roles of the teacher and of the psychotherapist. In the method of group psychotherapy described by Fritz Redl, under the name of “Life-Space Interview”,⁽⁸⁾ a qualified psychotherapist or a teacher

who is already a part of the group intervenes as opportunities arise, either to reduce tensions or to interpret the situations so that each child gains a better understanding of the working of his group and the institution.

Nevertheless, group psychotherapy can be practised in therapeutic groups chosen from among the children in the institution. Whether in this case the methods used are verbal, psychodramatic or occupational, a therapeutic group of this kind may be regarded and treated as a homogeneous entity as long as it remains closed. When, on the other hand, it becomes necessary to form open groups of variable composition, it is preferable to restrict their activities to studying the interpersonal reactions which arise over particular problems, or to analysing the group's concrete reactions to the behaviour of one of its members.

The use of the ordinary methods of group psychotherapy in the normal conditions of life in the institution raises still other problems, for instance, whether it is advisable for a therapeutic group to include the teacher who is normally in charge of the children forming this group. His presence cannot fail to provoke complex reactions, but his absence may well give free rein to manifestation of aggression towards him, which can be controlled much better when he is present. Furthermore, the children in the group may be ashamed when their most intimate interpersonal problems are exposed in the presence of the others, since when the psychotherapeutic session has ended they return to their daily activities in the same milieu. In practice it seems easiest to treat the acute problems that arise in a social group of children by having recourse to the various methods which lead the children to identify themselves with one another or with their teachers.

As we have seen, the technical development of the modern institution is probably not conducive to the organization of multiple therapy in any given establishment. We have seen that the introduction of individual psychotherapy is not without its problems, and that group psychotherapy does not fulfil the requirements of either a therapeutic climate or milieu therapy.

To understand this, we must remember—and that will be our conclusion—that the objectives of institutional treatment are highly complex: when a child is placed in an institution, it is the task of the staff to teach it to adapt itself to society and at the same time to prepare the child's environment to receive it again. Up to a point this is a paradoxical process, because by creating a therapeutic milieu, whether that of an artificial family or of a group-life situation, the institution is offering the child membership of a healthy community, whereas the ultimate purpose is to prepare the child for re-integration into a less healthy society. In this environment—our society—it is the general public that will judge the child's behaviour, his powers of adaptation, his work and his emotions, and the child must therefore be made capable of satisfying the norms and requirements of social life or he will soon be back in the institution. Speaking less schematically, one might therefore say that milieu treatment goes beyond the techniques of individual

psychotherapy and group psychotherapy. In organizing a therapeutic community, this method is aiming at preparing for the child's return to its community life, but here we are confronted with the problem of the community's own normality, to which we must now turn, trying to specify what one might call "community therapy".

2. *Community Therapy*

In this study which has led us from individual psychotherapy to the psychotherapy of the family group and thence to milieu treatment in the proper sense of the word, we have seen that, since the objective of milieu treatment is to prepare the child to regain its place in the community, so this community itself must be treated, to eliminate or at least reduce its harmful influences.

We must first try, from both the preventive and therapeutic points of view, to define the objectives and methods of this community therapy.

In general, the study of individual cases leads us to conclude that the activities of a psychiatric treatment centre for children should include not only the family group, but also the various institutions in which the child is living or has lived. This practice carries the risk of expanding the centre's activities out of proportion, but it has the advantage of providing for the organization of a rational therapy which will at the same time exert a preventive action, since what is done in the various community institutions is liable to have a favourable effect not only on the child being studied and treated, but also on other children in these institutions and their families of origin.

It may be argued that there can be no efficient individual or familial treatment unless at the same time community institutions to which the child and its family belong are prepared for their therapeutic task. For instance, what would be the use of re-educative measures to help the child overcome his difficulties in reading and writing, unless the staff of the institutions are also capable of detecting the child's specific difficulties and eliminating them by applying special teaching methods. Similarly, the specialized activities of the psychiatric social assistants may remain ineffective unless the community's non-specialized social assistants are prepared for their tasks in the field of mental hygiene.

On this view it might be proposed that treatment of the community and its various institutions should in some way precede the organization of a technical centre of child psychiatry. Before the child psychiatrists and their collaborators saw the children and their families, it would then be necessary for them to give up a very large part of their time to this treatment of the community and of its institutions. Schematically, one might distinguish three aspects of this preliminary treatment:

(a) The treatment of key persons, including: the staff of the institutions and the teachers;
general practitioners and pediatricians;
social workers;
nurses in day-nurseries and visiting nurses;
priests;
policemen, etc.

One difficulty of this therapeutic set-up would be that if it is handled as a form of teaching it may be sterile, whereas if it is handled as a form of treatment we may come to regard it as the cause the personality of the people who occupy these positions, whereas it is much better to treat them simply because of their positions, and not for the disorders that may affect their personality. The psychological preparation of specialists in mental health has become one of the most important elements of the community services, as witness the special efforts now being made among the physicians (Balint⁽⁹⁾).

(b) We might aim at including the institutions themselves in the treatment while studying the shortcomings of the organization that might be the object of a scientific approach, by making a serious analysis of the working methods employed, the relations between the adults who work there, and between the children who live there, and the interrelations between the adults and the children.

(c) Finally, this community therapy may cover some specific functions, in particular those of teachers or even parents. The methods employed in what may be called the "schools for parents" are discussed below.

In the treatment of the community, so many experiments can be made and their objectives and methods are so numerous that we must restrict ourselves to a few examples which are particularly instructive because of their relative precision. The first example is the treatment which has been planned in various conditions in different countries for communities which can be regarded as underprivileged, whether because of their material circumstances or because of their transplantation under conditions that might be regarded as traumatizing. As we know, at the periphery of some American towns slums are being formed while the well-to-do population tend to move to recently built suburbs.⁽¹⁰⁾

These slums attract a population which includes many recent immigrants and coloured people, who are underprivileged from the economic point of view. The numerous clinical studies made of this type of population are examples of "research action". These investigations run fairly closely parallel to the epidemiological investigations into needs, and are of two types. One type is concerned with estimating the health of the community as scientifically as possible, taking into account the various factors of mental pathology and social integration. An example of this type of investigation is Remmie's (Ed.) *Mental Health in the Metropolis*.⁽¹¹⁾

The other studies made of particular communities, especially displaced communities, enable one to form an impression of their reactions to conditions of life, to their transplantsations, and to their relationships with other communities, and hence to plan therapy.

What was said in the introduction to this paper, about the apparent increase in morbidity that follows the establishment of a child psychiatric service in a community, shows once more that the milieu must be prepared for psychiatric work. It is also possible that certain groups whose conditions of life are particularly miserable, and who are especially preoccupied with the material aspects of life, may not be accessible to psychiatric action in its modern form. Community treatment will involve working on the key people with jobs in the community who may themselves become resistant. In preparing the community itself, its leaders must be convinced of the validity and efficacy of the psychiatric work and must follow the community's example in using the tools provided for them.

Various experiments of this type have been proposed, in the United States, in Great Britain and in France. In France, for example, emphasis is being placed on the value of "prevention clubs", organized to combat anti-social conduct in the particularly underprivileged younger groups. On the outskirts of Paris, houses built after World War I and now let at a low rental have been used to re-house families of low socio-economic and cultural level. Several generations have followed one another in these buildings, and the adolescents now constitute asocial groups who cannot be approached by any of the traditional methods. The clubs that have been organized for these youths in the best cases, teach their members the realities of their problems and their community. If things work out as expected, these adolescents will grow up, aware of the severity of their lot and will themselves demand specialized services for themselves, their families and their community.

Therapy of this type always respects the principle by which, in a group action, the leader or therapist must be regarded as a member of the group and not as an outsider.

Schematically, this form of community therapy can be of two types, according to whether it is based on the plan of some professional or functional groups, or whether it has arisen spontaneously, seemingly without any precise preconceived plan. The former type is that commonly directed by key people holding responsible posts in the community in connection with education or child health or by the parents themselves. Applicable publicity techniques are likely to play a part in the formation of such groups and consequently in the treatment they dispense. However, though these methods are under development and often used, they are still somewhat unprecise. In many respects, the vast modern machinery for the distribution of news (books, newspapers, radio, television, cinema, etc.) has numerous disadvantages, firstly because they seem to cram the ideas they want to spread down the public's throat, secondly because they favour abusive rationalization,

and finally because they often enhance the restlessness of those who have charge of children without helping them to combat it. On the whole, the information should be limited, made as personal as possible and given a positive orientation, so that teachers and parents gain the impression that although the child's growth is associated with irregularities and crises, it is nevertheless a continuous process taking place in a positive atmosphere.

The applications of publicity methods which closely approach a didactic set-up have led to the introduction of innervations which come within the scope of this study of community treatment. From this aspect the organization of uni- or multi-professional groups has become very important. Balint has studied the organization of groups of medical practitioners in Great Britain. Similar stable groups have often been organized for the social assistants and other professional bodies. In addition to these long-lasting closed groups one can also organize open groups, whose membership will vary from session to session, or short-duration groups which have a more instructional purpose. For instance, in France, the parents' school organizes brief discussion groups for the parents of children attending the same school.

Space will not allow a detailed discussion of the arrangement of these groups, though some of the difficulties which arise in their organization will be briefly mentioned. Since they are organized on a voluntary basis, they will clearly be frequented by people who have little to do or are too much preoccupied with their personal troubles and their neurotic difficulties. Instruction and discussion then tend to become replaced by more specifically therapeutic necessities which warp the group life and make the group more difficult to handle. When, as occurs more rarely, groups are organized on a professional and compulsory basis, their spontaneity and efficacy are clearly less.

Apart from these organized, uni- or pluri-professional, voluntary or obligatory groups, the group activities of the community can be carried out in other ways more likely to preserve their spontaneity and social organization. Clearly, these forms of therapy arise when the group under consideration is reorganized and recognize the range of the problems to be tackled. A few examples may be given of this type of action. In the mental health services of some French communities, talks are given to mothers when they leave their children in crèches, known in France as "les haltes pour enfants", i.e. places where mothers can leave their children for a few hours, for instance to go shopping. When they leave the children there, or when they come to fetch them back, a positive action can be exerted on their behaviour. Similar establishments have been included in the large new housing estates, together with cultural centres and "bureaux for educational orientation", where the parents can reveal their problems, often before a group, so that the whole group acquires a more positive attitude to education.

The theoretical basis of this type of activity can be found in the work of Kurt Lewin,⁽¹²⁾ according to whom when individuals belong to different

social fields any modifications in their way of belonging to one of these fields is likely to affect the other social fields to which they belong. By this method, one might achieve a modification, possibly superficial but nevertheless real, of the subjects' attitudes and prejudices.

Clearly, these few examples do not exhaust the whole field of community treatment. Just as in milieu treatment in its precise sense, the first aim is to modify the atmosphere and influence more or less sharply circumscribed groups so as to create a less pathogenic and more favourable climate. The experiments mentioned above also show that it is difficult to separate therapeutic from preventive action where community treatment is concerned. In any case, this therapeutic action cannot fail to play a part in the discovery of mental disorders, a discovery which must be made at a sufficiently early stage and be followed by active measures, if treatment is to be effective. In the long run, the education and other instruction of members of the various communities may play a preventive part in the field of mental health.

In any case, the specific therapeutic efforts made on both the individual and group planes either in outpatient centres or mental hospitals, call for active efforts in the community, not only for preventive purposes but also to avoid recurrences of the disorders observed.

CONCLUSION

There is no need to regard the development of the more specific individual forms of treatment as radically opposed to the development of milieu treatment and community treatment.

Taking the study of interfamilial relations as an example, it is now considered that in addition to specific and highly technical individual therapy, there is also a need for therapeutic methods applied to the family group.

Whatever form of treatment is applied, milieu treatment is often necessary, and in particular, it constitutes the essential part of the treatment in mental hospitals for children, however technically advanced individual therapy may be, milieu treatment institutes the essential part of the therapy.

To prevent the recurrence of mental disorders, to prepare for the return of a child separated from his family, to gain understanding of the psychiatric treatment itself, it is often necessary for the community to be prepared, either through people working in education and child health, through the families, or through those who themselves constitute the community, its leaders or its members, such preparation can be given in an institutionalized or spontaneous form.

There is clearly no contradiction between these two types of activity, one supporting the other and both being necessary. The proposed establishment of a mental health service in France calls for preliminary classification and education of the community, to make known its needs and resources and prepare for this new type of action. Once the specialized service has been

established, its work should be supported and linked up with the work of key members of the community.

Taking into account the increasing tendency for psychiatry to cover the examination and treatment of the liminal states which precede manifest disorders, we are here touching one of the essential roots of cultural transmission, the pathological effects of which may well be felt from generation to generation.

This community treatment, with its various forms that are as yet only vaguely defined, cannot pretend to be a specific and well-technified form of therapy, but its very existence should lead all socially active psychiatrists working directly in the community centres to take its efforts into account, in both the therapeutic and preventive fields.

REFERENCES

1. KLEIN, M. *The Psychoanalysis of Children*, London, The Hogarth Press. 1932.
2. BOWLBY, J. *Maternal Care and Mental Health*, 1956.
3. FREUD, A. *Ego and Mechanisms of Defence*, 1932.
4. DUCHÊNE, H. L' écart entre les possibilités techniques théoriques et les besoins médico-sociaux réels en psychiatrie infantile, *Psychiatrie Enf.* I, 2, 475-490.
5. ACKERMAN, N. W. *The Psychodynamics of Family Life*, New York, Basic Books Inc. 1958.
6. BUCKLE, D. F., LEBOVICI, S., and TIZARD, J. Le traitement psychiatrique des enfants placés en internat (to be published in *Psychiatrie Enf.*).
7. AMADO, G. Douze ans de pratique médico-pédagogique, *Psychiatrie Enf.*, IV, 2, 450.
8. REDL, F. Principes de la tolérance envers les enfants traités en institution. (Scandinavian colloquium on child psychotherapy and child guidance.) WHO, Regional Bureau of Europe, report published in Copenhagen, pp. 64-68.
9. BALINT, M. *Psychotherapeutic Techniques in Medicine*, 1961.
10. DUHL, L. *The Urban Condition*, New York, Basic Books, 1962.
11. GROLE, L. *Mental Health in the Metropolis*, New York, McGraw Hill Book Comp. 1962.
12. LEWIN, K. *Psychologie Dynamique* (French translation) Paris, Presses Univ. France, 1960.

CHAPTER 3

Psychopharmacology in Childhood: a Critique

by LEON EISENBERG

IT WOULD be a tedious and unrewarding exercise to attempt a comprehensive review of the literature on psychopharmacology in childhood. The preponderance of papers record clinical impressions, based usually on a limited case sample of heterogeneous composition in studies lacking those features of design which alone permit critical appraisal. Among the welter of conflicting contentions, the drug house copywriter wanders freely, citing selected references which favor his product and apparently augment its sales. Yet, if the pitch sells, does not a good part of the fault lie with us, the physicians, who are so readily persuaded by so little scholarship?

The remarkably high rate at which drugs are prescribed for the treatment of behavior disorders in children, despite the paucity of evidence to substantiate their efficacy, draws attention immediately to certain features of these disorders and their treatment. Such heavy use implies that complaints about disturbing behavior must be quite common in medical practice. Alternative modes of treatment must be either unfamiliar to physicians, or unsatisfactory in their experience, or considered too burdensome to undertake. It seems likely that all three factors obtain. Clearly, the frequency of *post hoc* improvement must be high enough to sustain physicians in drug-prescribing behavior; that this apparent response to drugs is due to the placebo effect has been demonstrated repeatedly by controlled experiments but must needs escape the attention of the empirically oriented practitioner. Thus, the frequency with which tranquilizers are prescribed points to a failure of medical education. For one thing, practitioners have been given insufficient grounding as to the nature, course and treatment of psychiatric disorders in children. For another, in this field of therapeutics (as in others), our educational efforts fail to meet our avowed goals of preparing medical graduates for the judicious independent assessment of new agents.†

† One important consideration tempers these critical strictures. The extent to which the medical practitioner is harrassed by more patients than he can comfortably manage will restrict the time he can devote to the regular study of current journals and to thoughtful reflection on the articles therein. The provision of a more adequate supply of medical manpower must underpin any plan to upgrade practice.

With these considerations in mind, it would appear warranted to begin this chapter by a brief recapitulation of critical issues in the design and execution of therapeutic drug trials. Examples will be drawn primarily from studies with which the author has first-hand familiarity. In response to the editor's charge to provide guide lines for the practitioner to the choice of medication, the second section will consist of a synopsis of the "psychoactive" drugs that have found a place in the standard pharmacopoeia. This can be no more than a personal and provisional synthesis of clinical experience sifted through the uneven sieve provided by published research. The chapter will conclude with an outline of general principles applicable to the clinical use of drugs.

I. DESIGN OF THE THERAPEUTIC TRIAL

However elaborate the design necessary to attain it, the basic element in a therapeutic drug trial is nothing more than a contrast of the results obtained with and without the agent in question. Complexities arise in efforts to control for the many variables other than the drug under study that can influence outcome, either independently of, or in interaction with, the drug. Thus a generalized design for such a study would include the following features: the division of the patient population into subsamples so chosen as to be approximately equivalent on variables relevant to outcome; the administration of contrasting treatment schedules to the sub-samples, one maintained (where possible) as an untreated group; the measurement of change (improvement) in the patients by reliable and valid methods; the assessment of the confidence to be placed in the obtained results by the use of appropriate statistical techniques; and finally, a straightforward report of the findings. Let us now consider certain of the problems presented by each of these design elements.

Patient-Related Variables

Patient related variables that require to be taken into account are those associated with demographic characteristics, with the disease process itself and with "idiosyncratic" factors. Demographic factors of importance include age, sex, and social class, all of which have been shown to influence course and outcome. School phobia provides an example of an age effect. In our own experience (Rodriguez *et al.* 1959) as well as in that of others (Coolidge *et al.* 1960; Warren 1960), school phobia in children of elementary school age has proven to have a much better prognosis than the same presenting syndrome in children of high school age. A study of drug "x" in the treatment of this disorder could result in quite misleading conclusions if the drug treated group were either younger or older than the control group. The high ratio of boys to girls in most psychiatric disorders of childhood (Bahn *et al.* 1961, 1962) suggests that sex is potentially a variable of importance, though its precise meaning in this context is not clear. Moreover, as in

adults (Hollingshead and Redlich 1958), social class interacts significantly with the assignment of diagnosis, the choice of treatment, the likelihood of remaining in treatment, and the outcome of illness (Eisenberg 1962).

Whereas the characteristics of age, sex and social class can be specified (with an appreciable margin of error in the methods of assigning social class), the problems related to diagnosis have thus far defied consensus. Not only is there no common and completely satisfactory terminology, but there is as well considerable disagreement between clinicians of the same theoretical persuasion on the diagnosis to be assigned a given patient. As a result, some investigators have abandoned serious concern with diagnosis and rely instead upon symptoms; others employ a therapeutic procedure against a heterogeneous group of patients and report overall outcome without relationship to diagnostic subgroups.

No serious investigator elsewhere in medicine would propose such a course. Even when his target is the relief of a nonspecific symptom such as headache, he is careful to deal separately with the headaches of migraine, cerebral neoplasm, tension, etc. Obviously, an agent efficacious for one may be completely ineffectual against another and harm the patient by delaying his access to appropriate treatment. These considerations apply with equal force to the psychiatric disorders of children (Eisenberg 1957). The thorough follow-up studies of O'Neal and Robins (1958a, 1958b) have demonstrated that the long term prognosis of psychiatric disorders in children bears a significant relationship to the nature of the presenting syndrome. The relevance of diagnosis to outcome in psychopharmacologic studies has been clearly illustrated in several of our own studies (Cytryn *et al.* 1960; Eisenberg *et al.* 1961).

Table 1 contrasts the outcome for children classified as neurotic with that for those classified as hyperkinetic; in the latter category we include overactive, impulsive, distractible children with behavior distressing to others but associated with no apparent distress to the child (except for its secondary consequences: reprimands, school exclusion, etc.). Excluded from both groups were children with I.Q. of less than 80, gross neurologic impairment, psychosis, or adjudicated delinquency.

TABLE 1

Diagnosis	Outcome			Total
	Much Improved	Somewhat Improved	No Change	
Neurotic	48	17	6	71
Hyperkinetic	24	22	25	71
Totals	<u>72</u>	<u>39</u>	<u>31</u>	<u>142</u>

Noteworthy in Table 1 is the significantly greater likelihood ($p < 0.01$) of a favorable outcome for the neurotic children. Comparison of treatment effects *within* diagnostic categories revealed that none of the three drugs employed in the several studies (meprobamate, prochlorperazine or perphenazine) yielded a result better than that obtained with placebo and/or brief psychotherapy. (If anything, children on active medication did less well than the comparison groups when toxic effects were taken into account.) Yet, the differences *between* the diagnostic groups is so great that, had diagnosis been ignored, uneven allocation of cases to the several "therapeutic" regimens could have produced an entirely spurious impression of a therapeutic difference (i.e. had neurotic patients predominated in the meprobamate treated group and hyperkinetics in the perphenazine treated, the former agent would have appeared clearly superior when in fact no difference attributable to drug was present).

These results have led us to deal with the two diagnostic groups as different patient populations. So high is the improvement rate among neurotic children treated by brief psychotherapy, a regime well within the practicalities of ordinary office practice, that we have abandoned further psychopharmacologic investigations with such patients; an agent would have to be spectacularly effective (given the limited sensitivity of clinical measures of improvement) to meet the statistical criteria for superiority over this baseline therapeutic regime. For these patients, the relevant question becomes: Is the apparent improvement a simple function of the "natural history" of neurotic syndromes in children or a consequence of the brief psychotherapy? Recent results (Eisenberg and Conners 1964) suggest that the psychotherapy is indeed efficacious.

On the other hand, the limited response of hyperkinetic children to psychotherapy and/or placebo demonstrates the need for more effective measures; for these patients, CNS stimulants give evidence of producing a better outcome, as measured by objective tests as well as by clinical appraisal (Whitehouse *et al.* 1964; Eisenberg and Conners 1964).

The "idiosyncratic" (perhaps better termed "unknown") variables include those factors which can lead to outcome differences between untreated patients apparently equivalent on all specifiable variables. That is, two schizophrenics (or neurotics or sociopaths) adjudged clinically to have similar prognoses may nonetheless show quite divergent courses in hospital. There is always present the possibility that the clinical investigator may be intuitively sensitive to subtle prognostic factors despite his inability to specify them explicitly. To control such unwitting bias in assigning patients to treatment regimes, it becomes necessary to insist upon the principle of random allocation (by coin toss or table of random numbers) to treatment conditions *within* the major diagnostic groups. Furthermore, in view of the possibility of variation in severity or course of illness—or in the skill of the therapists with accumulating experience—in relation to time of year, con-

trasting treatment programs should be carried out synchronously. For example, the "complaint value" of the child is likely to be less, with the same behavioral traits, when good weather comes and he is out of the home for more of the day — or when the school term ends and, with it, vexing calls from the teacher. Had drug "x" been given to the first 30 patients seen from September to February and "y" to the next 30 seen from March to July, the study could well be biased in favor of "y" by this time of year factor. Cases coming to attention early in the school year may well be more severe than those surviving without major complaint through the greater part of the term; the later cases, in addition, may show and apparent remission as school ends.

Beyond these considerations, patient behavior is subject to influences quite beyond the control of the investigator (a death in the family, the providential arrival of a particularly resourceful school teacher, the birth of a sibling, etc.). One hopes that with random assignment such intercurrent variables will more or less distribute equally between groups; it remains a wise undertaking to keep careful records of life circumstances on each visit to be certain that no major discrepancies between groups exist (as may occur if one group happens to share a common neighborhood or a common source of income).

Treatment Schedules

The two basic design strategies for teasing out the treatment effect from the other intertwined variables are: (a) the patient as his own control and (b) the untreated or standard treatment control. The first procedure economizes on the size of the clinical population needed and offers the further advantage of providing, at least nominally, complete matching of patient variables. However, the sequential nature of the "own control" design (i.e. a period without medication, followed by one on drug, followed by one on placebo, followed by one on treatment—or some variant thereof) makes two special precautions essential. Unless one is dealing with a static disorder from which no one recovers without therapy, we know in advance that more and more patients will be registered as recovered the greater the lapse of time (i.e. fewer and fewer schizophrenics in hospital the longer the interval after admission). To take this into account, drug and placebo must be given in counter-balanced order so that half the patients receive the one first, half the other. Secondly, the investigator must be alert for position effects. The impact of placebo after drug may be different from that of placebo before drug (rebound effects). In "own control" designs, the requirement that the patients remain under observation for a considerably longer period of time (at least twice as long) than in the standard treatment control design makes the problem of patients dropping out of treatment a particular hazard.

The practical problems encountered with the use of this design in outpatient studies can be illustrated from the study of Whitehouse *et al.* (1964).

The purpose of the study was to contrast the effectiveness of phenobarbital, methylphenidate and placebo in the treatment of hyperkinetic retarded children. Each patient was to receive each medication for 4 weeks, the order counter-balanced, and the administration double-blind. However, 4 patients dropped out after the first drug and 9 after the second; it is of interest that only 2 of the 13 drop-outs were on methylphenidate at the time of drop-out as compared with 5 on placebo and 6 on phenobarbital. Analysis of responses to the first and second drug trials separately and of 19 cases treated by all three drugs revealed consistent evidence of methylphenidate superiority ($p < 0.05$) over phenobarbital with some evidence of its superiority over placebo (on 2 of the 3 analyses). A final analysis based on *change* in condition in passing from one medication to another demonstrated that both methylphenidate ($p < 0.002$) and placebo ($p < 0.01$) were superior to phenobarbital but only a trend ($p < 0.20$) for methylphenidate to be better than placebo. Although the separate analyses tend to complement each other, the asymmetry and decrease in sample size resulting from the sequential and differential drop-outs make interpretation of the findings less clear cut than we had hoped for.

The alternate research strategy, the one most commonly employed, is a division of the total patient group into 2 or more matched samples, each of which is then placed in a different treatment condition. Clearly, the preferred design includes a patient group maintained in an untreated condition. This, however, is not always attainable. Patients have, as they clearly should have, freedom of movement and those who are maintained on a waiting list or deliberately denied treatment may well seek help elsewhere. "Defectors" from a waiting list may differ significantly in discomfort or initiative from those who accept delay; the fraction left in the untreated "control" may no longer be representative of the initial patient population. When the patients are in an institution, and thus willy-nilly in the "control" condition, the very fact of denial of treatment may influence their course. This seemed clearly to be the case in a study of the effectiveness of perphenazine in the treatment of institutionalized delinquents (Molling *et al.* 1962). Whereas the youngsters given either placebo or perphenazine displayed improved behavior (as rated by house parents on symptom charts), those who were in a cottage we naively designated as an "untreated control" showed significant worsening of behavior instead of the random fluctuations we had expected to serve as a check on our instrument. In the institutional environment, the grapevine among the boys had it that getting the medicine offered the prospect of an earlier discharge since length of stay was known to depend on adjustment. Those who learned that they were being denied the magic elixir appeared to respond to this condition by increasing dissatisfaction and consequent behavior disturbance. Clearly, this was a major flaw in the design of the experiment; in such a setting, an undisguised control condition vitiates its intended features. However, serendipity had called our attention

to the fact that *not* giving something to patients can be as meaningful to them as giving something, when they know that such a decision has been made.

The customary control is the use of the placebo: a pharmacologically inert substance which resembles the active medication in external form. The ideal placebo would be one which would mimic all of the properties of the active preparation except those relevant to its therapeutic action. The customary use of a pharmacodynamically inert substance suffers from the deficit that the subjective awareness of the physiologic change in state produced by the active drug is missing. Yet, these non-specific effects of medication may have a significant psychological impact on behavior (that is, if the patient experiences flush or tachycardia after taking medication, this may convince him of its potency and thus lead him to anticipate and experience benefit, even though no direct drug action on the basic disorder has occurred).

Placebo effects in pediatric drug studies can include effects upon the child, his parents and the physician. A very considerable literature has grown up demonstrating the power of expectancy. If the patient or his family on the basis of prior experience, of confidence in their physician, or of a general conviction about the potency of drugs anticipate consequences from taking medication, this expectation can lead to a marked alteration in the subjective state. These expected consequences may be either positive or negative. Thus, there are placebo responders who regularly report improvement after taking drugs and others who report increased distress. The physician is no less vulnerable to anticipations of the value of his treatment. His expectations can influence the outcome of the experiment, either by the attitude he conveys to his patient or by an unwitting bias that skews his judgment of outcome (even in so "objective" a problem as measuring the behavior of laboratory rats—Rosenthal and Lawson 1964).

The standard method for dealing with the unpredictable and ubiquitous placebo effect is to employ a double blind design: active drug and placebo are made up to appear identical, coded, and administered in such a way that neither the patient nor the physician is aware of whether drug or placebo is being given (in most instances, the patient does not know that a placebo control is being employed, an issue that some have challenged as unethical). While it would be absurd to conduct the initial clinical trial with a hitherto untried medication by the blind method and thus lose the advantage of increased sensitivity to possible effects, it is equally clear that precise delineation of the role of a new drug requires double-blind studies if the initial clinical trial suggests utility. Medical annals are replete with instances of enthusiastic appraisals of new treatments (from blood letting to tranquilizers) which were finally abandoned after extensive experience. Moreover, so universal are placebo effects in the treatment of psychiatric disorders that a critical reader will be highly suspicious of any study that includes a placebo group and alleges that no or inconsiderable effects were found.

A final consideration anent the role of expectation is alertness to the possibility of interaction between expectation and drug effects. It is customary to assume that placebo and drug effects are simply additive; that is, that the amount of improvement in the placebo group provides a baseline to be subtracted from the improvement reported in the drug group. However, the expectancy or set of the patient can *interact* differentially with medication so as either to enhance or inhibit the drug effect. The patient who anticipates sedation may respond differently to a stimulant from one who anticipates stimulation. A drug may produce effects that depend upon the attitude of the physician administering it and upon his relationship to the patient. Experimental efforts to investigate drug-set interactions are currently under way by strategies that involve deliberate manipulation of set variables (Fisher 1962b; Uhlenhuth and Park 1964).

Methods of Assessment

For the clinician, the essential question is whether the patient improves under the treatment. In office or hospital practice he judges outcome with his clinical skills, integrating into an overall judgment his observations of the behavior of the patient, the patient's subjective account, and the reports from parents and others. Properly enough, this is the method most commonly used in therapeutic studies. Outcome is scored in categories such as: much improved, somewhat improved, no change, or worse. Unfortunately, clinical estimation of change is subject to a considerable margin of uncertainty (reducible by pre-training of raters and by narrowing the focus of the rating from the overall to the specific); this "noise" in the measurement system magnifies apparent *within group* differences and hence makes it more difficult on statistical analysis to detect potentially significant *between group* differences.

More fundamental than even the issue of the *reliability* of a measuring system is that of its *validity*; with what precision does the score it yields correspond to the magnitude of the "real" phenomenon? To determine this, we must agree upon the salient characteristics of the phenomenon itself as well as upon a standard system for the measurement of those characteristics. Much of the bitter controversy over therapeutic outcome studies in psychiatry stems from implicit differences in the *criteria* of improvement which becloud technical arguments over measurement. What is to be the touchstone of clinical success: reduction in symptoms, reduction in signs, personality change, customer satisfaction, more effective work performance—some or all and, if combined, in what proportion?

Discussion of the theoretical issues underlying criterion choice would require a chapter in itself; the problem is stated here only to call attention to the necessity for choice and full realization of the implications of that choice. If the focus is on symptom relief, there is some burden on the investi-

gator to demonstrate that the symptoms are non-trivial, and that the relief of symptoms "a" and "b" is not attained at the cost of substituting "x" and "y" (or at least that "x" and "y" are less disabling than the original set). If "personality change" is taken to be crucial, this requirement must be matched by methods of measurement that fulfill scientific canons; it is simply to negate the possibility of investigation if the stance is taken that only the psychotherapist himself can assess personality "in depth" (the very nature of his involvement precludes a role as both plaintiff and judge).

In our outpatient studies, we have made use of clinical appraisal as the central criterion measure, with recognition of its limited reliability but in acknowledgement of its correspondence with daily medical practice. But, at the same time, we have sought other independent methods of assessment as cross-checks. A valuable source of information for school-age children is the teacher's report. In the child's life, she is assigned the role of judge of his academic progress, as well as of peer interactions and response to institutional rules. She employs, by virtue of her training and her task, a universe of discourse that may not readily be translatable into psychiatric phraseology. If her estimate of change differs from that of the mother or of the clinician, this is not necessarily a reflection of unreliability since she is judging behavior in a setting substantially different from home or clinic (and it is precisely this that gives her judgment value as an equally important sounding on the performance of the child). In our experience, by and large, teachers tend to anticipate benefit as accruing to children from psychiatric intervention. However, when teachers are asked to rate children on several different treatment programs—and do not know which child is on which regime—then the bias in favor of "treatment" should be distributed among children on all regimes; under this circumstance, differences in outcome can be related to type of treatment.

The mother is an important, although highly involved, observer of her child's behavior. Her satisfaction or dissatisfaction with his initial behavior and with the course of treatment is a key element to be taken into account in rating outcome. Her report of improvement is, of course, subject to the restriction that it may reflect a change in her response to his behavior, an actual change in his behavior, or both. Again, with the use of control groups, differences in mothers' reports add valuable data. The treating physician, though the most expert observer, has an investment in the outcome of the experiment. His assessment of change in the child, while in part based upon what he can see for himself in the clinic is also (and should be) influenced by what the teacher and the mother report. Indeed, the mother herself is influenced by the comment she receives from the teacher. Thus, although it may be useful to treat the three ratings as separate sources of information, they are not to be considered independent sources.

A clinical method frequently used in therapeutic drug studies is the symptom list. The rater (mother, school teacher, ward attendant, etc.) is

asked to estimate change in each of a list of symptoms chosen to cover the spectrum of aberrant behavior. Symptom lists may ask for a simple "present" or "absent" judgment or may require a semi-quantitative statement of severity. The total score is employed as a measure of overall severity. Its advantage lies in requiring of the observer relatively specific estimates of the level of particular behaviors rather than a single global estimate. The separate judgments, however, are subject to a "halo" effect; marked change in a particularly troublesome symptom may lead to a report of improvement in other symptoms even though they have not changed. The most serious deficit of the total count of the symptom list is its assumption of an equivalence in the significance of symptoms, an assumption contrary to clinical reality. Cessation in enuresis or headache is clearly not the same as the disappearance of hallucinations or stealing. Yet, for all its limitations, the symptom score has yielded useful results. Moreover, it permits study in detail of those symptoms which have changed as contrasted with those that have not (Conners and Eisenberg 1963).

A method of considerable utility, for groups of children who share a common setting, is the sociogram. The children are asked to rate each other by a scheme which gives a measure of "social standing". In the class play of Bower and Larsen (1958), children in the same classroom (or cottage) are asked to cast their classmates in roles in a play, with both positive and negative roles listed. By assessing the number of times a given child is assigned positive and negative parts in the play, one can estimate his position in the social structure of the classroom. In a study at an institution for delinquents (Eisenberg *et al.* 1963), a before and after analysis of the sociogram revealed significant gains in peer estimates for the children receiving dextro-amphetamine, gains paralleling the improvement independently recorded by school teachers and house parents on symptom rating charts.

The uncertainties associated with clinical ratings suggest the importance of psychological test measures that can be objectively scored and assessed for reliability and validity. Whatever the utility of projective tests as diagnostic instruments, they have not been designed to measure change over the short run. It would appear more fruitful to center on tests sensitive to those psychological dimensions central to the treatment effort. The Porteus Mazes, scored as they are to penalize the subject for lack of planning in the search for the exit from the labyrinth, provide a screen to detect impulsivity, a key problem in the hyperkinetic and distractible child. In two studies (Conners *et al.* 1964; Eisenberg and Conners 1964), we have found that hyperkinetic children treated with stimulants showed highly significant improvement (when contrasted with placebo-treated patients) on Porteus test performance. It is noteworthy that there was a marked interaction between drug effects and Wechsler I.Q. level; children in the lower two of the three I.Q. ranges in the study showed significant Porteus gains, whereas those in the normal range showed no change. It is the children with impaired

function who appear to respond to the stimulant, whereas those who are functioning at a near optimal level derive no benefit (on this task) from medication. In the same experiment, there was also a suggestion of an improved performance on paired-associate learning in the stimulant treated as opposed to the placebo treated group; these effects, at the border of statistical significance, require confirmation.

These test procedures obviously do not exhaust the range of possibilities. Other measures have been employed by Garfield *et al.* (1963), Werry (1964) and others. The examples cited serve only to indicate the possibility of documenting impressions of clinical change by objective tests. A note of caution should be added. Performance measures offer advantages in quantitation and precision but the investigator must still deal with the ultimate problem of their relevance to the clinical state of the patient. Demonstration of change or lack of change in any given test bears on the question of *therapeutic efficacy only* if the test performance can be demonstrated to relate directly to the disorder from which the patient suffers.

Statistical Analysis

Except in those rare instances in which diseases have a regular, predictable and documented course, the decision as to whether the improvement following treatment is to be ascribed to it must be based on a statistical analysis of the results from an appropriately designed experiment. The choice of statistical procedures bears an intimate relationship to the design of the experiment and to the methods employed in it. The bio-statistician can suggest the most efficient design, once the clinical questions have been posed, and should be a participant at the planning stage rather than a consultant called in out of desperation after the investigator has been inundated by obscure data. Fisher (1962a) has demonstrated, by the use of an hypothetical experiment, the relationship between the method of analysis of the data and the conclusions reached.

Statistics are invested with no magic. No statistical manipulations can compensate for failures in design and methodology. The patient sample must be representative of the patient population from which it is drawn if the conclusions from the experiment are to be generalizable. Statistical analysis then enables the investigator to make a statement of the probability that chance alone could have produced the observed difference but, however improbable, it remains a finite possibility. The more unreliable the methods employed in the experiment, the greater the likelihood of failing to detect a significant difference when it exists. The bedrock of the experiment remains the accuracy of its methodology; bio-statistical elegance cannot transmute dross into gold.

Reporting of Results

The aim of the therapeutic trial is not only to determine the efficacy of the drug but to communicate the finding to others. Proper reporting thus be-

comes an important responsibility of the investigator. The report should include a description of the patient population, the design of the study, the methods used to measure change, and the results of statistical analysis, all in sufficient detail to permit independent evaluation of their accuracy and significance. In attempting to judge the value of the study, the reader has only the paper (and the reputation of the investigator) to go by. The value of the experiment is compromised when the report lacks sufficient detail for an independent appraisal of the findings; the reader is left with nothing more than an *ex-cathedra* pronouncement by the author. Far too many of the papers on psychopharmacology in childhood suffer from such obvious flaws in design and method as to make it impossible to evaluate the findings.

II. SYNOPSIS OF CURRENT DRUGS

The drugs employed to modify behavior may be classified into: tranquilizers, sedatives, stimulants and "anti-depressants". The so-called "minor" tranquilizers (meprobamate, hydroxyzine and the like) will be dealt with as sedatives in view of the lack of evidence that they are more effective or produce less sedation than the drugs traditionally classified as sedatives.

Tranquilizers

The most potent family of tranquilizers are the *phenothiazines*, of which the most extensively used and best studied is chlorpromazine. The recent co-operative study under the auspices of the Psychopharmacology Service Center of the National Institute of Mental Health reaffirmed the value of chlorpromazine in the treatment of schizophrenia (and found it to be as effective as the newer phenothiazines). In our experience, similar dramatic remissions under chlorpromazine therapy can be obtained with older children and adolescents whose psychosis resembles the adult form. In the case of autistic or younger schizophrenic children, the drug can be valuable in containing destructive and aggressive behavior but is *not* associated with remission of the psychosis. The quantitative reduction of symptoms may be an essential step in making the patient available for other therapeutic efforts; what final results are to be anticipated for the treatment of childhood schizophrenia by any of the available methods remains uncertain (Eisenberg 1957). But it can be stated that chlorpromazine is the drug of choice for psychotic syndromes in childhood.

In one recent controlled study (Werry *et al.* 1964), chlorpromazine proved effective in the management of hyperkinetic pediatric outpatients, a result contrary to findings with a somewhat more heterogeneous (and probably more disturbed) group of patients (Garfield *et al.* 1962). We were unable to obtain evidence for the effectiveness of prochlorperazine or perphenazine with hyperkinetics (Cytryn *et al.* 1960; Eisenberg *et al.* 1961).

We feel that, when a phenothiazine is wanted for a child, chlorpromazine should be the first choice. Although all phenothiazines are capable of producing jaundice, blood dyscrasias, and extrapyramidal syndromes, chlorpromazine would appear to have the widest margin of safety. Prochlorperazine and perphenazine should be used sparingly, if at all, because of the frequency of alarming side effects (torticollis, trismus, and extrapyramidal seizures). It is difficult to justify the use of any phenothiazine when nothing more than sedation is desired.

Although controlled studies are not available, clinical experience suggests that the *rauwolfia* drugs (reserpine and congeners) have about the same indications but less predictable effects than (and toxicity about the same as) the phenothiazines. Reserpine should probably be reserved for phenothiazine failures.

Sedatives

Diphenylmethane derivatives (hydroxyzine and diphenylhydramine) have been used in the treatment of behavior disorders, anxiety neuroses and hyperkinetic syndromes. Whereas documentation for the value of hydroxyzine is limited to uncontrolled clinical reports, diphenylhydramine has been shown to be effective in the management of a variety of psychiatric syndromes (Freedman *et al.* 1955). It can be employed with relative safety (most frequent side effect: drowsiness) for symptom relief in young children.

Propanediol derivatives (mephensin and meprobamate) would appear to be about as effective as phenobarbital (Laties and Weiss 1958). Although these agents appear relatively safe in the recommended dosage, habituation following prolonged use has been reported (and acute toxicity from accidental ingestion of large amounts).

There is as yet insufficient evidence to delineate the role of such new agents as *chlordiazepoxide* and *diazepam* in treating children. Initial clinical trials have led to enthusiastic claims of efficacy (but what new drug has not been so heralded?). These drugs are said to be efficacious in children with cerebral palsy because of their ability to reduce spasticity, presumably by inhibiting conduction through the internuncial pool in the spinal cord. Drowsiness, rash and withdrawal effects have been reported.

The traditional sedatives have long been available to physicians. The exciting results produced by the major tranquilizers in the treatment of psychoses have led to the widespread assumption that they have comparable effectiveness in dealing with neuroses and behavior disorders. However, the available evidence suggests that *phenobarbital* is equal in effect to the so-called minor tranquilizing agents in the treatment of non-psychotic psychiatric disorders. Phenobarbital, because of its inexpensiveness, low toxicity and relative safety, is to be preferred to the more exotic (and expensive) tranquilizers until better drugs are available. It is contraindicated in the treatment of hyperkinetic syndromes because of its frequently observed

paradoxical action in exciting such children. Where a potent sedative or hypnotic is desired, *chloral hydrate*, a much neglected drug, is of considerable value.

Anti-convulsants (most usually diphenylhydantoin) have been recommended for the treatment of behavior disorders associated with electroencephalographic abnormalities. In view of the uncertain meaning of the association between the behavioral abnormality and the electrical anomalies, it is perhaps not surprising that so little agreement has been achieved on the therapeutic role of these agents. When the behavior syndrome is a manifestation of temporal lobe epilepsy, clinical benefit from anti-convulsant medication can be anticipated; in the non-specific abnormalities (such as the 14 and 6 pattern, "more slow waves than normal for age", "moderate disorganization of the record", etc.), most clinicians find that "treating the EEG" is of little benefit (in changing the patient *or* the recording).

Stimulants

Stimulants, such as *dextroamphetamine* and *methylphenidate* have their greatest usefulness in the treatment of the overactive and distractible child (Conners and Eisenberg 1964; Whitehouse *et al.* 1964). Toxicity is manifested chiefly by anorexia and insomnia but can usually be controlled by modification of dosage. Prolonged medication with these drugs can apparently be maintained without serious hazard, but it would seem the wiser course to diminish the use of these agents during summer periods when the demand for conforming behavior is less. It is the natural history of overactive and distractible behavior to diminish with age. Thus, periodic trials of the effect of withdrawal of medication are indicated in the child on long-term treatment in order to determine the earliest period at which medication can be discontinued. Although addition has been reported in the adolescent user of stimulants (with psychosis resulting from very large doses), this does not appear a problem with the younger child on medically regulated dosage.

"Anti-Depressant"

Anti-depressant medication has had relatively little use in child psychiatry. A series of clinical trials reporting the remarkable effectiveness of *imipramine* in the treatment of enuresis has been followed by four placebo-controlled studies, two of which confirm, and two of which deny, its superiority over placebo. Whether the contradiction is a function of dosage or age of subjects remains obscure as of this writing. The serious hazards associated with the use of *iproniazid* and *parnate* would appear to preclude their use with children who, in any event, rarely exhibit depressive syndromes of psychotic proportions.

III. PRINCIPLES OF DRUG TREATMENT

No drug should be employed without firm indication for its use, without careful control of the patient to be treated, and without due precautions for toxicity. With any potent drug, toxicity is inevitable; to justify its use, the severity of the presenting condition and the likelihood of benefit must outweigh the risk of toxicity. Toxicity studies on adults cannot be safely extrapolated to children because of differences in the immature organism. Clinical decisions must be based upon data from pediatric studies.

An old and familiar drug is to be preferred to a new drug unless evidence for superiority for the latter is preponderant. This principal of pharmacologic conservatism is based upon the fact that unexpected toxicity from a new agent may be apparent only after prolonged experience with its use (as in recent concern with the possibility that systemic lupus erythematosus may result from long-term use of diphenyldantoin). This is not a statement of pharmacologic nihilism. Drugs can make a decisive difference in treatment but their very potency commends us not to use them lightly.

Despite these cautions, drugs can be useful agents in the management of pediatric psychiatric disorders when chosen appropriately and applied with discrimination (Freedman 1958). They can be effective in controlling symptoms not readily managed by other means and can facilitate other methods of psychiatric treatment by allaying symptoms that disrupt learning. If they are not the panaceas portrayed in advertisements, neither are they the poisons claimed by those wedded to exclusively psychological methods of treatment.

Every drug study reveals the potency of placebo effects; that is, benefits occurring from the relationship between physician and patient and from positive expectations in the patient. These effects can be used to potentiate pharmacologic results by recognizing that the prescription of medication is an important communication to the patient and his family (Fish 1960). Contrariwise, they can have a negative impact if the physician regards drugs solely as weapons to impose control or as measures of desperation. The meaning of the transaction is determined by the attitudes of both participants, patient and physician. Skill in the use of drugs requires, in addition to knowledge of their pharmacologic properties, sensitivity to their psychological implications.

Drugs should be used no longer than necessary. Dosage should be reduced periodically with the goal of cessation of treatment if symptoms do not return on lower dosage. Dosage must be individualized. Each patient is metabolically unique. Undertreatment, as well as overtreatment, can result in incorrect judgments about the appropriateness of particular drugs for the patient.

The use of drugs does not relieve the physician of the responsibility for seeking to identify and eliminate the factors causing or aggravating the

psychiatric disorder. All of the currently available psychopharmacologic agents treat symptoms, not diseases. Clearly symptomatic relief is not to be disparaged; indeed it will remain a major part of medicine so long as causes are unknown and cures unattainable in many diseases. However, symptom suppression may also delay diagnosis and hence effective treatment. To prescribe drugs for a child whose symptoms stem from correctable social, familial, biological or intrapersonal disturbances without attempting to alter the factors causing the symptoms is poor medicine.

In the foregoing there is no assumption that psychotherapy is necessarily any more of a specific than drug therapy. It, too, has its symptomatic and non-specific aspects; exacting proof of its efficacy remains to be supplied. It, too, can act as an anodyne if not accompanied by searching efforts to correct untoward environmental stresses. The justification for psychotherapy would appear to lie in its application to the modification of maladaptive learned behavior patterns. The patient may become accessible to psychotherapeutic methods only after symptom relief has been achieved by drugs—but whether attained by drugs or by psychological means, symptom control is not an end in itself; it provides a climate in which the patient can learn more effective coping patterns.

Medical evaluation of new drugs regularly follows a sequence of initial enthusiasm, growing disenchantment and reports of toxicity, premature calls for discard, and a final sober view with appreciation of indications and precautions in use. Pharmacologic methods provide neither the passport to a brave new world nor the gateway to the inferno. With thoughtful selection, careful regulation of dosage and close scrutiny for toxicity, they add a significant dimension to patient care. Their most valuable contribution to medicine may yet prove to lie in the stimulus they have provided to biochemical and physiologic investigation of brain function in relation to human behavior.

REFERENCES

- BAHN, A. K., CHANDLER, C. A., and EISENBERG, L. (1961) Diagnostic and Demographic Characteristics of Patients Seen in Outpatient Psychiatric Clinics for an Entire State (Maryland). *Am. J. Psychiat.* **117**, 769-778.
- BAHN, A. K., CHANDLER, C. A., and EISENBERG, L. (1962) *Diagnostic Characteristics Related to Services in Psychiatric Clinics for Children*, Milbank Mem. Fund Quart. **40**, 289-318.
- CONNERS, C. K., and EISENBERG, L. (1963) The Effects of Methylphenidate on Symptomatology and Learning in Disturbed Children. *Am. J. Psychiat.* **120**, 458-464.
- CONNERS, C. K., EISENBERG, L., and SHARPE, L. (1964) Effects of Methylphenidate on Paired-Associate Learning and Porteus Maze Performance in Emotionally Disturbed Children. *J. Consult. Psychol.* **28**, 14-22.
- COOLIDGE, J. C., WILLER, M. L., TESSMAN, E., and WALDFLOGEL, S. (1960) School Phobia in Adolescence. *Am. J. Orthopsychiat.* **30**, 599-607.
- CYTRYN, L., GILBERT, A., and EISENBERG, L. (1960) The Effectiveness of Tranquilizing Drugs Plus Supportive Psychotherapy in Treating Behavior Disorders of Children. *Am. J. Orthopsychiat.* **30**, 113-129.

- EISENBERG, L. (1957) The Course of Childhood Schizophrenia. *Arch. Neurol. Psychiat.* **78**, 69-83.
- EISENBERG, L. (1962) If Not Now, When? *Am. J. Orthopsychiat.* **32**, 781-793.
- EISENBERG, L., GILBERT, A., CYTRYN, L., and MOLLING, P. A. (1961) The Effectiveness of Psychotherapy Alone and in Conjunction with Perphenazine or Placebo in the Treatment of Neurotic and Hyperkinetic Children. *Am. J. Psychiat.* **117**, 1088-1093.
- EISENBERG, L., LACHMAN, R., MOLLING, P. A., LOCKNER, A. MIZELLE, J. D., and CONNERS, C. K. (1963) A Psychopharmacologic Experiment in a Training School for Delinquent Boys. *Am. J. Orthopsychiat.* **33**, 431-447.
- EISENBERG, L., and CONNERS, C. K. (1964) *A Controlled Study of the Differential Application of Outpatient Psychiatric Treatment for Children*. Sixth International Congress of Psychotherapy, London.
- FISH, B. (1960) Drug Therapy in Child Psychiatry. *Comp. Psychiat.* **1**, 55-61; 212-227.
- FISHER, S. (1962a) Use of Chi-Square in Simple Crossover Designs. *J. New Drugs.* **2**, 84-87.
- FISHER, S. (1962b) On the Relationship between Expectations and Drug Responses. *Clin. Pharmacol. Ther.* **3**, 125.
- FREEDMAN, A. M., EFFRON, A. S., and BENDER, L. (1955) Pharmacotherapy in Children with Psychiatric Illness. *J. Nerv. Ment. Dis.* **122**, 479-486.
- FREEDMAN, A. M. (1958) Drug Therapy in Behavior Disorders. *Ped. Clin. North America* (August) **5**, 573-594.
- GARFIELD, S. L., HELPER, M. M., WILCOTT, R. C., and MUFFLY, R. (1963) Effects of Chlorpromazine on Behavior in Emotionally Disturbed Children. *J. Nerv. Ment. Dis.* **135**, 147-154.
- HOLLINSHEAD, A. B., and REDLICH, F. C. (1958) *Social Class and Mental Illness*. Wiley, New York.
- LATIES, V. G., and WEISS, B. (1958) A Critical Review of the Efficacy of Meprobamate in the Treatment of Anxiety. *J. Chronic Dis.* **7**, 500-519.
- MOLLING, P. A., LOCKNER, A. W., SAULS, R. J., and EISENBERG, L. (1962) Committed Delinquent Boys: The Impact of Perphenazine and Placebo. *Arch. Gen. Psychiat.* **7**, 70-76.
- O'NEAL, P., and ROBINS, L. N. (1958a) The Relation of Childhood Behavior Disorders to Adult Psychiatric Status. *Am. J. Psychiat.* **114**, 961-968.
- O'NEAL, P., and ROBINS, L. N. (1958b) Childhood Patterns Predictive of Adult Schizophrenia. *Ibid.* **115**, 385-391.
- RODRIGUEZ, A., RODRIGUEZ, M., and EISENBERG, L. (1959) The Outcome of School Phobia. *Am. J. Psychiat.* **116**, 540-544.
- ROSENTHAL, R., and LAWSON, R. (1964) A Longitudinal Study of the Effects of Experimenter Bias on the Operant Learning of Laboratory Rats. *J. Psychiat. Res.* **2**, 61-72.
- UHLINHUTH, E. H., and PARK, L. C. (1964) The Influence of Medication (Imipramine) and Doctor in Relieving Depressed Psychoneurotic Outpatients. *J. Psychiat. Res.* **2**, 101-122.
- WARREN, W. (1960) Relationship Between Child and Adult Psychiatry. *J. Ment. Sci.* **106**, 815-826.
- WERRY, J. S., WEISS, G., and DOUGLAS, V. (1964) Studies on the Hyperactive Child III: *The Effect of Chlorpromazine Upon Behavior and Learning Ability*. Canadian Psychiatric Association Annual Meeting, Vancouver.
- WHITEHOUSE, D., CONNERS, C. K., and EISENBERG, L. (1964) *A Double-Blind Study of Phenobarbital, Methylphenidate and Placebo in Defective Hyperkinetic Children*. (Unpublished Manuscript.)

CHAPTER 4

Behaviour Therapy and Conditioning Techniques

by H. GWYNNE JONES

INTRODUCTION

Behaviour therapy is a term which, although coined comparatively recently, stands for a theoretical and practical approach to the problems of psychiatric treatment which has quite a long history. Interest in this approach has revived in recent years, and it has become the focus of a great deal of controversy generated by the forceful advocacy of such writers as Eysenck (1960) and Wolpe (1958), and equally vigorous opposition from the ranks of dynamic psychiatry. But behaviour therapy is not a clearly defined therapeutic technique to be applied to equally well defined clinical conditions, and to be accepted or rejected *in toto* in the way one might reach a decision concerning the use of a specific drug with specific effects. Instead, the problem presented is the assessment of the importance and range of applicability of a related and developing set of techniques and a particular theoretical approach to psychological illness and its treatment.

One difficulty in assessing the present status of behaviour therapy is that it appears to be reaching the end of an important but initial stage in its development. This has been the stage of individual case studies, illustrating the practicability of the behavioural approach to treatment, and the stage of theoretical justification of this approach in terms of findings from laboratory experiments with animals. It is only now entering a stage of controlled clinical trials to test the efficacy and the range of efficiency of these methods and, equally important, a stage in which a wide range of relevant experiments will be carried out with human subjects and the actual treatment of cases will be fitted into an experimental framework. Undoubtedly the initial phase has made a considerable impact on psychiatric thinking, and even on practice. Some of its effects are likely to be irreversible, but the ultimate importance of behaviour therapy depends on the findings which will emerge from the later phases. For reasons which will be discussed later, although the earliest attempts at behaviour therapy were concerned with children's fears, its main developments have occurred in the field of adult psychiatry. Behavioural theory is, however, equally relevant to child psychiatry, and there are indications already that this imbalance is likely to be rectified in the future.

The concept of behaviour therapy derives from behaviourist theories concerning the nature and treatment of mental illness, particularly neurotic illness. Classically, of course, the term *behaviourism* is associated with the name of J. B. Watson. Watson reacted strongly against the use of introspection, which was the main method of enquiry in psychology during the early decades of this century. Denying the validity of introspective methods, he wanted to exclude all reference to consciousness from psychological theory and to confine his studies to the objective measurement of observable behaviour. Many at that time were growing impatient with introspection and rallied to Watson with such excessive enthusiasm that behaviourism rapidly became a cult. The very phenomena of conscious experience were denied, environmental factors were considered all-important in determining behaviour, and heredity was ignored. Not surprisingly, all this made behaviourism appear to the unconverted as an extremely naïve, crude and mechanistic account of human nature, and it is this legacy which generates much antagonism to behaviour therapy today.

In fact, despite his excesses, Watson did much to set psychology on the path to becoming an essentially experimental science in the biological tradition. Contemporary behaviourism, however, retains little of the content of his early teaching except the basic description of behaviour in terms of stimuli and responses. Experiments are still anchored to publicly observable behavioural and environmental events, but these are frequently manipulated so as to throw light on the nature of covert responses involved in such functions as thinking and feeling. Theoretical explanations frequently refer to hypothetical processes which are considered to intervene between a measured stimulus and response. The traditional *S-R* formula becomes *S-O-R*, in which the *O* represents the state of the behaving organism with which the stimulus interacts in evoking a response. Among the most important of the theoretical concepts which have been developed to describe that state are those relating to learning and habit-formation, and those concerned with motivation. The heavy theoretical burden borne by habit concepts has led to particularly intensive experimental investigation of phenomena of learning, and modern behaviourist theories are frequently described as *learning theories*.

Recently, the application of information theory and cybernetics in experimental psychology, and indeed in the general field of biology, has shown that even the *S-O-R* formulation is over-simplified. It has been shown, for example, that responses may be determined as much by the absence of stimuli which might have been present as by the presence of the stimuli presented. A simple everyday illustration of this is the way in which a card player's tactics are controlled both by the cards in and those absent from his hand. Except in very artificial circumstances we do not make specific unitary responses to specific stimuli but constantly modify our ongoing behaviour by repeated adjustments appropriate to the changing pattern of environmental

stimulation. Feed-back information about the effects of earlier adjustments is important in this process. Motivational states are important in determining the general direction of sequences of behaviour, and the adjustments are made so as to maintain the path towards appropriate major and minor goals.

Despite impressive advances, behaviourist theory, when applied to complex human behaviour, suffers from the fact that the major fundamental experiments upon which it is based were carried out on animals. The behaviour of an experimental animal in an artificial laboratory situation can seem very remote from the emotional distress of a psychiatric patient. Most certainly the use of language separates the human being from all other species. Nevertheless, by allowing a high level of control of relevant variables and fairly precise measurement, animal experiments do have definite advantages. Findings may be applied tentatively to human behaviour provided that further research is undertaken to explore the limits of this application. Human behavioural research is now extending rapidly, and is already contributing significantly to behaviourist theory.

AETIOLOGY OF NEUROSIS

While specific genetic mechanisms have been shown to be of direct importance in psychosis, the role of heredity is more complex in neurosis (Slater, 1964, Shields and Slater, 1960). The relatives of neurotics are more liable to become neurotic than the general population, but their illness might be of quite a different type, and it usually occurs after exposure to some form of environmental stress. During the last war the incidence of schizophrenia remained constant, but that of neurosis rose sharply, with those who had shown previous abnormalities of personality succumbing to lesser degrees of stress than those of previously stable personality. Examination of the evidence suggests that non-specific polygenic factors mainly determine an individual's predisposition to neurosis (his *neuroticism*), but an actual illness is precipitated by environmental factors. Both genetic factors and the nature of the stress may partially determine the form the illness will take.

Learning may be defined as an enduring change in behaviour resulting from training or experience as distinguished from changes resulting from processes such as maturation or temporary states such as fatigue.† In any learning process the precise nature of the change in the form of behaviour will be partly determined by the organism's genetic constitution. As a neurotic illness is a behavioural change brought about by the experience of environmental stress it is reasonable to suppose that learning processes may be important in its development. If so, the language and findings of learning

† An excellent account of processes and theories of learning is provided by Hilgard (1956).

theory and experiments are relevant to the explanation of its causation. Certainly an aetiological theory in these terms provides a valuable link between abnormal and general psychology and suggests fresh avenues for experimental research.

The argument that behaviour pathology is learned is most plausible when applied to isolated, well-defined symptoms, and particularly when these are physical in nature. Allergic reactions such as asthma, for example, can become conditioned responses evoked by visual or other stimuli which have become associated with the presence of allergens (Dekker and Groen, 1956). Similarly, the histories given by many patients suggest that exposure to incidental stimulation, e.g. the smell and feel of a rubber sheet, when a child is sexually aroused may be an important factor in the development of sexual perversions. These examples refer to the learning of maladaptive responses. Equally important is the failure to learn adaptive responses. In normal development, a child learns to control his urination, first when awake and ultimately when asleep. The enuretic child fails to acquire this skill, or achieves such precarious control that it readily breaks down.

Typically, however, neurosis is a complex disorder producing many symptoms and affecting all aspects of a patient's life. Even so it may be the product of learning. Learning theorists, like psycho-analysts, stress the importance of anxiety in the production and maintenance of neurotic reactions, but conceive of anxiety as a conditioned emotional response based on fear. Certain stimuli naturally evoke fear and, by learning the harmful consequences of certain other types of stimulation, and individual's range of feared stimuli is extended. Similarly, an intrinsically harmless stimulus, if, by chance or circumstance, it becomes associated with a noxious situation, can become a conditioned stimulus producing emotional distress. This distress has a motivating effect in that the sufferer seeks ways of evading the disturbing situation and such avoidance responses, if maladaptive, become neurotic symptoms. In a more direct way, anxiety or fear has a disturbing effect on the nervous, hormonal and muscular systems and interferes with normal efficiency, particularly in demanding situations.

One of the few generalizations deriving from experimental psychology which is of sufficiently wide applicability to be termed a "law" is the "Yerkes-Dodson Principle" (Yerkes and Dodson, 1908, Broadhurst, 1959, Jones, 1960). Up to a certain optimum level, increased motivation increases efficiency of performance: beyond that level efficiency declines. Furthermore, the greater the complexity of the task, the lower is the level of motivation which is optimal. These relationships are most striking when the motivation is based on fear or anxiety.

As already stated, the main experimental basis for a learning theory of neurosis comes from research on animals. Especially important are experiments on "traumatic avoidance learning" (Solomon and Wynne, 1954, Metzner, 1961). A typical experiment of this nature would be carried out

by confining an animal such as a rat or a cat in an apparatus so designed that a neutral stimulus, say a red light, can be presented and followed, after a brief interval, by a fairly powerful continuous shock to the soles of the animal's feet. The animal then shows numerous indications of fright and will leap violently about the cage. A lever switch is placed so that these random movements are likely to trip the lever which switches off both the light and the shock. Over repeated trials of this type the animal comes to show clear evidence of fright in response to the light and before the shock is received. This fear reaction, which may now be spoken of as anxiety, has become a conditioned response to the originally neutral light stimulus. Another effect of practice is that the animal learns to trip the lever very quickly after the shock is experienced. This is described as an *escape* response. If the experiment is continued over further trials, this lever-tripping response occurs progressively earlier in time until it occurs when the light is switched on and before the shock is experienced. Thus the escape response gradually becomes an *avoidance* response which protects the animal from further shock. Avoidance responses, unlike the more usual learned responses based on reward, are very difficult to eradicate even when failure to respond in time results in no further shock. Theoretically, this persistence is explained in terms of the relief from anxiety when the light is switched off: "avoidance of shock" responses are at the same time "escape from light" responses.

The behaviour of animals treated in this way clearly serves a useful biological purpose, it can in no way be described as neurotic. This is because the escape and avoidance responses are successful and the anxiety is playing an adaptive role as in many everyday human situations. Wolpe (1952, 1958) and others have shown, however, that when animals are shocked in circumstances in which effective escape or avoidance is prevented, marked behavioural disturbances occur which justify the term "neurotic" in that they are maladaptive and persist outside the experimental situation. These abnormal reactions are considered to be persistent, abortive escape and avoidance responses or direct manifestations of the animal's fear and anxiety reactions. Consistent with this interpretation, they become exaggerated when the animal is exposed to stimulation associated with the original situation. *Experimental neurosis* of this type may also be induced without the application of direct painful stimulation. The classical experiment in this field, carried out in Pavlov's laboratory (Pavlov, 1927), developed from an experimental conflict situation. A dog was trained to discriminate between circular and elliptical patterns of stimulation. The circle was always followed by a food reward and came to elicit a reliable conditioned salivary response. The ellipse was never followed by food, and produced no salivation. Then, by stages, the ratio of the axes of the ellipse was progressively altered so as to increasingly resemble the circle, until the discriminating response was no longer possible. There was an abrupt change in the dog's behaviour: although previously docile, it began to bark violently, squeal,

and attack the apparatus. This disturbance persisted and the dog could not be used for further experiments. Other experiments (e.g. Miller, 1944) have shown that conflict evokes avoidance tendencies and is therefore functionally akin to pain.

Ethical considerations forbid the wholesale extension of this type of experimentation into the human field, but Watson and Rayner's (1920) early experimental demonstration of the development of a phobic reaction in a child is in many ways analogous to traumatic avoidance training in animals. An 11-month old boy, the now famous Albert, was given a white rat with which he played with no evidence of fear or other unpleasant emotional reaction. During the training stage of the experiment, however, a loud noise was sounded behind the child each time he reached for the animal. Quite rapidly the boy started to show obvious signs of fear when the rat was brought near, and this emotional reaction persisted when he was retested 4 months later. Once established, Albert's fear was not specific to the rat but was also evoked by a white rabbit, furry toys, and even a ball of cotton wool. This illustrates the phenomenon of generalization which accompanies all forms of learning: a learned response to a particular stimulus is also evoked, although less powerfully, by a whole range of stimuli which to some degree resemble the original stimulus.

Drawing the analogy from traumatic learning experiments, it is suggested that a complex neurotic disorder may be considered to represent two inter-related types of learned response. Firstly, there is the primary emotional disturbance or anxiety which has physical and mental aspects, either of which may be predominant in a particular case. Secondly, there may be a variety of responses which represent attempts to avoid the stressful stimulation and hence to reduce the anxiety experienced. The commonly recognized defense mechanisms quite likely represent general trends of behaviour acquired in this way, but there may be more specific habits of behaviour, speech and thought which become the more peripheral symptoms of the neurosis. Both types of response are learned, and both are included in the behaviourist's claim that a neurosis is no more than the aggregate of its symptoms. Although ideational responses are recognized, no hypothetical psychic mechanism underlying the symptoms is considered necessary. Even so, the distinction between the emotional and the avoidance responses may be to some extent analogous with the Freudian distinction between an "underlying neurosis" and its symptoms. In another sense, however, a behaviourist would relate the concept of an underlying neurosis to individual differences in constitutional susceptibility to stress.

The behavioural analysis of neurosis does not exclude the possibility or even the importance of unconscious processes. Many experiments have demonstrated that a response may become associated with an external stimulus or class of stimuli without the learner becoming aware of any connection between them. Conditioned emotional responses, acquired

“unconsciously” in this way, may even be less adaptive and more diffuse than those accompanied by conscious awareness (Lacey *et al.*, 1954, 1955). Thus a topic of conversation or even certain ways of thinking may become emotion arousing stimuli and be unconsciously avoided in a way analogous to an experimental animal's avoidance of a red light.

This notion is, of course, very similar to Freud's concept of repression, and it is undoubtedly true that the behaviour theory of neurosis, although very differently expressed, has many points of contact with psycho-analytic theory. The differences, however, are not merely those of language or of emphasis. For example, in the behaviour theory, the equivalent of repression is merely the avoidance of danger stimuli: in the absence of appropriate conditioned stimulation, anxiety would not be expected to develop. According to Freudian theory, impulses which arouse feelings of guilt and are therefore regarded as dangerous, and material associated with these impulses, are not just avoided but are energetically forced and held out of the field of consciousness into which they constantly struggle to return. This theoretical difference may be illustrated by a fanciful analogy with a ball floating in a pool. For some reason contact with this ball is dangerous to a swimmer. The behaviourist swimmer will swim at the far end of the pool from the ball and, if wind or current brings the ball towards him, he will carefully maintain his distance. His efficiency is impaired by the distracting need to keep a vigilant look-out for the ball, and by the drastic reduction in his life-space. By contrast, the Freudian swimmer will swim up to the ball, grasp it firmly, and plunge it beneath the surface. There is, of course, a considerable upthrust tending to return the ball to the surface and the swimmer is handicapped by the need to maintain his downward pressure throughout his swim.

Owing to the nature of the animal experiments upon which the behaviourist theory of neurosis is based, emphasis has inevitably been placed on the stressful effects of direct painful stimulation such as electric shock. In everyday human life, of course, other types of stress are more common and more likely to be important in the genesis of neurotic behaviour. Conflict has already been mentioned, and is a type of stress which is given great weight in psycho-analytic theory, particularly when the conflict develops around a person's desire to behave in ways which he has learned to consider immoral so that the desire is accompanied by feelings of guilt. Miller (1944) carried out an extensive experimental analysis of behaviour in conflict situations which enabled him to predict the behaviour of experimental animals with a surprising degree of accuracy. He showed that conflicts are particularly difficult to resolve when they concern ambivalent goals and the individual concerned vacillates between approach and avoidance. The type of conflict stressed by Freud fits into this pattern, but the behaviourist would expect other conflict situations involving strong approach-avoidance motivation to have similar effects.

The concept of stress has been found necessary by everyone who has attempted a theoretical analysis of neurosis, but it is a concept which is very difficult to define in any precise way, as are the related concepts of motivation and emotion. For the behavioural psychologist, as for the biologist, the basic motives are the innate, physiologically determined, and universal primary drives of hunger, thirst, sex, and escape from pain or injury. These are unlearned, although their expression may be greatly modified by experience and training. It is clear, however, especially in relation to human beings, that additional secondary motives are acquired by processes of learning. In advanced societies, except possibly for the sex drives, the satisfaction of the primary drives is fairly readily achieved, and the secondary motives assume great importance. Many acquired motives are social in nature and, in particular, refer to an individual's social *status* in a fairly technical sense. Whereas physiological motives are concerned with biological survival, social motives are largely concerned with the preservation of status, but need not be less powerful than the primary drives. The analysis of behaviour in terms of series of anticipatory adjustments controlled by the flow of information from a changing environment has already been mentioned. During normal activity, an individual is in control of the changing situation in that his predictions are accurate enough to modify his responses appropriately so as to maintain progress towards the goals consistent with his state of motivation. Unpleasant emotional states arise and a condition of stress may be said to exist when his control begins to break down because he fails to anticipate events with confidence, or his predictions imply some threat to his physical or psychological self. Positive emotions are associated with consummatory behaviour of successful progress towards desirable goals.

A common source of stress, both in everyday life and in the laboratory, is that known as *frustration*. Frustration implies the existence of some obstacle or barrier which prevents progress towards desired goals, or lack of the expected satisfaction when a goal is achieved. Conflict situations produce one type of frustration, but the barrier to progress may take many forms. Circumstances of living, the physical environment, or a person's own physical or mental limitations may have frustrating effects. Much human frustration is social in origin: people in authority and the formal and informal rules of society impose many restrictions on an individual's freedom of action.

Disciplinary frustration is imposed particularly heavily on young children by the training and punishment procedures adopted by parents and others during the socialization process. A great deal of experimental work (Dollard *et al.*, 1939; Berkowitz, 1964) shows that, whereas stress in general tends to evoke anxiety, frustration more specifically tends to arouse an aggressive response. Social training, however, usually involves the punishment of aggressive acts and Sears *et al.* (1953) produced an interesting analysis in

terms of learning principles of the relationship to be expected between methods of child-rearing and the amount of overt and covert (phantasy) aggression shown later by the children concerned. A series of field experiments largely confirmed these expectations.

Childhood is also a period of intensive learning, during which multiple potentialities become crystallized into core systems which, although subject to a large degree of modification and elaboration, remain to some extent constant throughout life (Hebb, 1948). The critical period hypothesis, discussed elsewhere in this book, also suggests that lack of appropriate types of experience, or inappropriate experiences at certain times in childhood, may have far-reaching effects on behaviour. Social learning, mediated by such processes as imitation, is particularly important in personality development during childhood (Bandura and Walters, 1963, Miller and Dollard, 1945). Miller and Dollard's ingenious experiments also showed that imitation may be considered as a secondary motive acquired by normal learning.

Thus an analysis of personality development in terms of learning is by no means entirely inconsistent with many psychoanalytic concepts such as those of fixation, regression, and identification. Certainly from both types of theory it would be expected that an individual's characteristic pattern of response to stress, his defence mechanisms, would be established at an early age. However, even though the aetiological roots of many or even the majority of neuroses may reach back into childhood, the behaviourist theory allows for the *ab initio* development of a neurotic illness in an adult of sound personality when subjected to severe degrees of stress. In these circumstances the actual form of the illness and the nature of the symptoms will depend partly on the nature of the stress and partly on the victim's personality, which is itself partly determined by genetic factors and partly by his life-history.

Eysenck's (1957) findings and theories concerning the relationships between neurotic syndromes in adults and the personality dimension of introversion/extraversion are now well known. Dysthymic disorders in which anxiety is prominent occur most frequently among introverts, while those with "hysterical" disorders tend to be more extraverted or, at least, less introverted. The characteristic disorder of extreme extraverts is psychopathy. An analogous pattern is seen in the psychological disorders of childhood. Anxiety, depression, inferiority and related symptoms typically occur in introverted children: extraverted children characteristically develop conduct disorders in which aggressive behaviour, delinquency and truancy are prominent (e.g. Peterson, 1961). Eysenck accounts for these patterns by postulating that all children predisposed to neurotic illness are constitutionally endowed with a highly labile autonomic nervous system and therefore highly reactive to stress. Introverts are considered to be highly conditionable, again owing to constitutional characteristics, this time of the central nervous system. The combination of these inherited tendencies

favours the learning of maladaptive emotional reactions in the manner already described. On the other hand, extraverts are considered to have low conditionability and Eysenck suggests that this interferes with normal socialization. An individual relatively unaffected by social training but with labile emotional responses is likely to develop psychopathic patterns of behaviour.

Behaviouristically orientated studies have also thrown light on the relationship between stress and psychosomatic disorder. Many individuals when subjected to severe or prolonged stress do not become overtly neurotic, presumably because of a low constitutional predisposition, but may develop physical symptoms of the "functional" type. Selye (1955) studied the physiological effects of trauma produced by severe physical assault or disease and described the development of a *general adaptation syndrome* which chronically disturbs the endocrine system, particularly the functional relationship between the pituitary and the adrenal cortex. He later extended his studies to psychological stress and found similar effects. Contemporary physiological research, however, shows clearly that the central nervous system also has an important role in severe stress reactions. Basic emotional mechanisms are located in the hypothalamus and, normally, the cerebral cortex exerts an inhibitory restraint on these lower centres, but also has excitatory and directive functions when an emotion is aroused. Clinical observations of the long-term development of chronic fear reactions strongly suggest progressive inhibition of these cortical functions.

Even mild laboratory stressors have marked, if temporary physiological effects on human beings, and the individual differences shown in these experiments suggest that individuals may be differentially susceptible to stress-induced disorders of different biological systems, e.g. the vascular, muscular or gastric systems (e.g. Lacey *et al.*, 1953). More directly relevant to psychosomatic disease, however, are the more severe experiments carried out with animals. Of particular note and possibly the only true example of a psychosomatic preparation is the work of Brady and his colleagues (Brady, 1962). Experiments were carried out on monkeys, restrained in chairs, who were required to press a lever at least once in each 20 secs. in order to avoid an electric shock to their feet. The intention was to assess the degree of plasma corticosteroid elevation and certain animals were kept at this test for as long as 6 weeks with alternating periods of 6 hours' work and 6 hours' rest. To control for the effects of shock alone, each experimental monkey was paired with a control animal in an adjacent chair, but with only a dummy lever and no possibility of controlling the number of shocks which were received by both animals. Each of the first four experiments of this type resulted in the death of the "executive" monkey during a work period, and post-mortem examination showed that all had gross gastrointestinal ulcers. Sacrificed control partners had acquired no similar lesions. Follow-up studies indicated that gastric acid is suppressed during a work

period but is dramatically elevated during a rest period. Further experiments showed that the precise time-pattern of stress and rest periods is very important in producing these effects.

BEHAVIOUR THERAPY

A considerable portion of this chapter has been devoted to a discussion of the aetiology of neurosis although the topic is treatment. This is because so-called "behaviour therapy" is very closely linked with this type of aetiological theory. Indeed, all who subscribe to the theory must advocate the therapy. The reverse is not necessarily true, however, and many with quite different theoretical views might find a place for behaviour therapy in their therapeutic armoury. Behaviour therapy aims, in real life, to apply what has been discovered about processes of learning and unlearning in the laboratory. All therapy is concerned with the modification of behaviour: the unlearning of old behaviour and the learning of new. Whatever the course of events culminating in the appearance of the unwanted behaviour its removal should, to some extent, involve the processes investigated by students of learning.

One characteristic, then, of behaviour therapy is that it is applied learning theory. Another is that it is symptomatic therapy. In terms of the Freudian theory of neurosis this makes it, at best, an accessory tool of limited usefulness. In terms of the behaviour theory, however, no treatment can be other than symptomatic as the symptoms constitute the neurosis. Even so, it is important to recognize the distinction between two categories of symptoms, the emotional responses and the avoidance responses. It is central to the theory that the emotional responses are motivating in nature and, as such, causally related to the avoidance responses. It follows then that, if behaviour therapy is directed only at the removal of the avoidance responses, the emotional responses are likely to remain and to provide the motivating substratum for the development of fresh avoidance responses. In other words, even from the behaviour theory, one would predict a certain measure of symptom substitution, or a tendency to relapse, unless the emotional responses are also eliminated. Of course, in some, especially monosymptomatic conditions, whatever the original emotional situation, a peripheral maladaptive response may become the main stimulus which evokes anxiety, thus setting up a "vicious circle". A tremor, for example, may be an habitual expression of anxiety evoked by certain social situations. The tremor draws attention to the individual concerned and vastly increases his anxiety which, in turn, exaggerates the tremor. A direct attack on the peripheral symptom may, in these cases, break the vicious circle and produce lasting therapeutic benefits.

In practice, symptom substitution is a rare phenomenon, and probably occurs no more frequently than a change in the pattern of symptoms among

untreated patients. With behaviour therapy, as with other forms of therapy, relapses are far more common. Eysenck (1963) accounts for both relapses and spontaneous recoveries from neurotic illness in term of "extinction", the name given to the process whereby a conditioned response is eliminated or loses strength when the conditioned stimulus is presented repeatedly without the reinforcement (reward or punishment) associated with it during the learning phase. Extinction is a well-established experimental phenomenon, and there is considerable force to Eysenck's argument which runs as follows:

(1) Neurotic symptoms which directly cause distress to the patient are maladaptive reactions which are learned in the manner described earlier in this chapter and mainly consist of conditioned responses of the *sympathetic* nervous system. These Eysenck refers to as "disorders of the first kind".

(2) The main method of behaviourally treating disorders of this type is to recondition antagonistic *parasympathetic* reactions (see later in this chapter).

(3) Other symptoms, such as alcoholism, homosexuality and the sexual deviations, are learned parasympathetic responses which, although disapproved of by society, are pleasurable to the patient. These are referred to as "disorders of the second kind".

(4) The usual behavioural method of treatment of this type of disorder is *aversion therapy* (see later in this chapter) whereby antagonistic sympathetic responses are learned.

(5) Eysenck also includes symptoms, such as enuresis, and psychopathic behaviour, which essentially represent failures to acquire an appropriate learned reaction, within the disorders of the second kind, and classes the methods of treating them with aversive therapy.

(6) Disorders of the first kind, being based on traumatic conditioning, are open to extinction when the conditioned stimulus occurs without the original traumatic reinforcement. In other words, the chance circumstances of life should provide a form of reality testing which tends to extinguish the original learned emotional response and, therefore, leads to spontaneous remission of the symptoms. Spontaneous remission is, in fact, very common in disorders of the first kind.

(7) When spontaneous remission does not occur, Eysenck argues that the avoidance learning has been so effective that the patient is completely protected from chance reality testing. Avoidance responses have been shown, experimentally, to be extremely resistant to extinction.

(8) The behaviour therapy applied to disorders of the first kind and natural processes of extinction are mutually reinforcing. Therefore relapses after treatment should not occur unless a fresh neurotogenic traumatic situation is encountered. Eysenck quotes evidence indicating that relapses are rare in these circumstances.

(9) Disorders of the second kind, consisting of responses which continue to produce immediately pleasurable consequences for the patient, would

not be expected to extinguish and, therefore, spontaneous remission should be and indeed is rare in this type of disorder.

(10) On the other hand, aversive conditioning is subject to extinction when treatment is discontinued and no further noxious stimulation is applied. Therefore the relapse rate would be expected to be relatively high for disorders of the second kind.

Thus, in summary, Eysenck predicts a differential pattern of remission and relapse for the two kinds of disorder, the first kind showing a high level of remission and a low level of relapse, and the second kind showing the reverse pattern. While admitting that the evidence is imperfect, he claims that the reported facts are in accord with these predictions.

There are several points of detail in this argument with which the writer disagrees. Disorders such as enuresis, for example, do not fit easily into the second category: it is unlikely that the act of wetting the bed is rewarding in the same sense as the orgasm of a sexual deviant. The behaviour therapy applied to this condition also differs in important respects from the usual forms of aversion therapy. Many chronic and long-standing disorders of a phobic character continue to show no sign of spontaneous remission and even worsen, although the patient's mode of life provides a great deal of reality testing. Factors other than successful avoidance must then be important in the maintenance of the symptoms. Most damaging, however, is the scepticism which must be accorded to Eysenck's claim that "relapse should be rare or even non-existent" in the behaviour therapy of disorders of the first kind. This is certainly contrary to the writer's experience and is not supported by Marks and Gelder's (1964) data from a comparative study of the results of behavioural and conventional routine therapy of matched groups of neurotic patients.

Despite these criticisms, it cannot be denied that extinction must be an important factor in both spontaneous remission and relapse. Eysenck's prediction concerning the differential remission rate is almost certainly correct, and it is also likely that relapses in disorders of the first kind, although very probably more frequent than Eysenck suggests, are significantly fewer than in disorders of the second kind. The behaviour therapy usually applied to the first type of disorder is a form of counter-conditioning which is itself subject to extinction, and may be antagonistic to only partial aspects of the total disorder. Relapse is, therefore, quite possible without great damage to Eysenck's argument.

Eysenck also suggests important ways, derived from experiments on learning, in which extinction and, therefore, subsequent relapse, might be avoided. It has been shown empirically that *partial reinforcement*, i.e. the reinforcement of a conditioned stimulus on only a proportion of presentations, randomly distributed, produces greatly increased resistance to extinction of the learned response. *Overlearning*, i.e. the continuation of training beyond the point of initial success, particularly when carried out over

widely spaced trials, also increases resistance to extinction. One form of overlearning which may be particularly valuable in avoiding relapse is to provide "booster" periods of training at intervals after the termination of the initial treatment and especially if the patient gives indications that he is tending to relapse.

As to the actual techniques of treatment which go by the name of behaviour therapy, there is no single method, or even a limited group of methods, but many, and many more will undoubtedly be developed. It has already been pointed out that behaviour therapy is a form of applied learning theory. Experiments on learning have shown a variety of ways in which responses may be changed, diminished, or eliminated, and each of these suggests an analogous method of treating neurotic symptoms. Learning remains a very active field of research in general psychology, and future experimental advances will suggest new approaches to therapy. Equally important, an experimentally orientated approach to behaviour therapy is likely to throw fresh light on important aspects of human learning and also to produce great improvements in the therapeutic techniques. In this chapter, a brief survey is made of the most promising approaches so far reported, particularly those which are applicable to the treatment of children.

Oddly enough, although the earliest reports of behaviour therapy refer to the treatment of children, and children might appear to be the most likely subjects of an essentially re-educative form of therapy, developments in the field of adult psychiatry have, in recent years, greatly outstripped those in the children's field. One reason for this discrepancy may be a high degree of conservatism among contemporary child psychiatrists, but the treatment of children does present certain difficulties which do not apply to adult patients. Typically, behaviour therapy requires a high level of co-operation and effort from the patient. An adult, presenting himself at a clinic with various complaints concerning symptoms which cause him active distress and interfere with his mode of life, is more likely to make this effort than a child who may well not acknowledge any deficiencies in himself but is brought to the clinic by a complaining adult. Rachman (1962) also points out that most childhood psychiatric disorders are of the nature of behavioural deficits centred around the activities of eating, sleeping, elimination and speech. These problems arise from a failure to learn an adequate mode of response. He suggests that the fairly recent impact of operant conditioning techniques on behaviour therapy may yield an approach particularly suitable to the building-up of behavioural deficiencies in children.

SPECIFIC CONDITIONING TREATMENT OF ENURESIS

Operant procedures will be included in our survey, but possibly a better starting point is the "bell-and-pad" behavioural treatment of enuresis. Mowrer and Mowrer (1938) employed this technique for the first systematic

study of a "learning" therapy, and it also exemplifies a form of behaviour therapy specifically devised in relation to a detailed behavioural analysis of a disorder. During normal child development, neural maturation and learning interact to establish cortical and other neural centres which enable the child to exercise voluntary control in respect of both the initiation and inhibition of micturition. At first this control can only be exercised during the day, the inhibitory centres becoming inactive during sleep. Later, however, like other areas of the cortex which control vegetative functions, these "sentinel points" become locally activated during sleep. Consistent with the evidence that enuresis may arise from a variety of causes, this course of development may be disturbed by abnormalities affecting any one of the interacting functions. Anatomical abnormalities, biochemical dysfunctions, and neural pathology or immaturity may prevent the development of adequate sentinel points, while emotional disturbance is likely to disrupt the delicate balance of innate and learned excitatory and inhibitory reflexes.

Mowrer and Mowrer (1938) devised an apparatus for waking an enuretic child immediately after the onset of micturition. This was achieved by constructing a pad, on which the patient slept, containing two sheets of light bronze gauze separated by absorbent cotton and connected in series with a small battery and a sensitive relay. The voidance of only a little urine completed the circuit to activate the relay which completed a second circuit to ring an electric bell. Contrary to a popular myth, the child receives no electric shock and is merely stimulated by the bell, which may be considered equivalent to an alarm clock. Later workers have modified and improved upon the original apparatus in various ways, but the basic principle remains unaltered.

Jones (1960(b), 1961) points out that the bell, as an unconditioned stimulus, evokes two simultaneous responses, waking and a reflex inhibition of the just initiated act of micturition. He argues that in this way the temporal relationships are set up which will lead to these two responses becoming conditioned to the stimulation deriving from a full bladder with a pressure at the threshold for urination. Thus bladder pressure, in addition to becoming the unconditioned stimulus for micturition, becomes the conditioned stimulus for the inhibition of micturition and for an independent response of waking. This implies that, as this form of training is continued, the threshold pressure for micturition is gradually raised and the threshold bladder pressure for waking is gradually lowered until, ultimately, the child awakens spontaneously before urinating and, therefore, without hearing the bell. At a still later stage, most patients become able to sleep throughout the night without waking or urinating, possibly by a concentration of the "waking" or arousal response on to the sentinel points as occurs in normal development.

Jones (1960(b)) reviews the evidence concerning the therapeutic efficacy of this technique and concludes that "if widely adopted, the specific con-

ditioning method of treatment is capable of significantly reducing the incidence of enuresis nocturna at the later ages of childhood". Although relapses are not uncommon, "symptom substitution" has not been reported, though several authors paid particular attention to this point. In general, favourable personality and attitude changes follow successful treatment by this method.

More recent, better controlled studies support this view. The work of Lovibond (1964) is of particular interest, both from a theoretical and practical point of view. His theoretical analysis differs in several respects from that given here and, in particular, he ascribes the therapeutic effects to a type of avoidance conditioning. In line with this view, he constructed a modified "twin signal" apparatus incorporating a very loud but very brief (one second) hooter-like noise followed, after a minute of silence, by the gentle sound of a buzzer to summon the attendant. This apparatus and other earlier versions were equally effective in controlling enuresis but, in careful follow-up studies, Lovibond found an even higher incidence of relapse than had been reported previously. If relapse is considered equivalent to extinction this is not surprising as, in this situation, the learning process must come to a halt just at the point of minimal control because, as soon as the child achieves a dry bed, the bell no longer rings and the training ceases. Therefore, in a second experiment, Lovibond adopted an intermittent reinforcement schedule with his Twin-Signal device. In a random manner, the hooter was switched off for 50 per cent of the trials and this produced a significant improvement in the relapse rate. This finding is based on a fairly small group of subjects but is likely to be confirmed in further trials.

RECIPROCAL INHIBITION THERAPY

In contrast to the highly specific "bell-and-pad" treatment, the next method to be considered is applicable to a wide range of disorders and, at least in adult psychiatry, has so far been the most popular technique of behaviour therapy. This is the method described as the *strengthening of incompatible responses* or *reciprocal inhibition* as Wolpe (1958), one of its main advocates, refers to it. According to behaviourist theory, the symptom to be treated is a response to some identifiable stimulus situation. It then follows that if some different response, incompatible with the first, becomes attached to the same stimulus, and this new connection is progressively strengthened, then the probability of occurrence of the earlier abnormal response correspondingly decreases and ultimately falls to zero.

Neurotic responses, however, usually involve an intense and unpleasant emotional state and it is, therefore, extremely difficult to introduce and even more difficult to sustain incompatible forms of behaviour. Even when this is possible intense conflicts might be set up and anxiety increased. In these circumstances it becomes necessary to apply the *generalization principle*

which merely implies the operation of gradualism. A simple example is that of a child who is afraid of dogs and is given a puppy. The puppy is sufficiently like a grown dog to elicit some fear but is sufficiently unlike a dog to make this fear slight. Apart from its dog-like characteristics the puppy has a number of intrinsically attractive qualities, and its antics are likely to produce a pleasurable response incompatible with and destructive of the anxiety. As, week by week, the puppy gradually grows into a dog, this favourable reaction generalizes to other dogs. Of course, for this approach to be successful it is essential that the starting point is at a sufficiently low level of anxiety for the antagonistic response to win out. Lazarus (1959) describes his treatment of a child with an intense fear of dogs, dating from a traumatic incident, who had reacted most unfavourably to his parents' production of a puppy.

A very early example of this approach is provided by Mary Cover Jones' (1924) treatment of a 3-year-old child, Peter, who showed great fear of rabbits and white rats. This fear was shown to extend to objects such as a fur coat, a feather, and cotton-wool, but not to wooden toys. Circumstances had prevented Watson, under whom Jones worked, from attempting to eliminate the fears he had experimentally induced in his young subject, Albert, and advantage was taken of Peter's very similar natural fears to extend the experiment into a therapeutic phase. Treatment was focused on the rabbit which was always present during a daily play period with Peter and three other children, selected for their lack of fear. Gradually Peter was able to tolerate the rabbit at progressively shorter distances when caged. Later it could be free in the room and, finally, he was able to fondle the rabbit with every sign of affection. Apart from the play responses incompatible with fear, Jones made use of pleasurable eating responses in that, during the later stages of the treatment, Peter was seated in a high chair and given "candy" and other favourite foods to eat. The rabbit in a wire cage was brought as near as possible without arousing a response which interfered with the eating behaviour.

A more recent example, entirely based on feeding responses, is described by Lazarus (1959). The patient, an 8-year-old boy, had acquired a strong phobic reaction to all vehicles some time after being involved in a motor accident. The therapist at first talked to the patient about trains, buses, etc., and, whenever the child made a favourable comment, casually offered him chocolate. After a few interviews the boy discussed vehicles at length with no sign of anxiety, and the treatment moved into the second phase. Toy cars were introduced and a series of "accidents" were arranged. After each "accident" the child was given chocolate and, despite evidence of a great deal of anxiety initially, he came to enjoy the game. Later the original accident was discussed with the therapist while seated in a stationary car, chocolate being provided as before. The final stage consisted of progressively extended car rides, with and without the therapist, and finally without the chocolate.

Wolpe (1958) in his treatment, mainly of adults, usually sets out to achieve reciprocal inhibition of anxiety by a technique of systematic desensitization in which the graduated series of anxiety-provoking stimuli are imagined by the patient in response to the verbal suggestions of the therapist. Following Jacobson's (1938) claim that muscular relaxation inhibits anxiety, the patient is initially trained to relax and an "anxiety hierarchy" of stimuli is worked out. Starting with the least disturbing of these, the patient, while fully relaxed, is asked to imagine the situation and the process is repeated until the anxiety is extinguished and the next step in the hierarchy can be introduced.

Lazarus (1959) describes the treatment of a 9-year-old child by this method. Following a series of deaths from illness or accident, witnessed by her or involving her friends, this girl developed a variety of severe neurotic symptoms centred around an unwillingness to be separated from her mother, based on a fear of her dying. Systematic desensitization based on relaxation was employed, utilizing an anxiety hierarchy involving imagined separations from the mother ranging from 5 minutes to 1 week. This was rapidly effective and led to a clearing up of the related symptoms.

Therapy by the strengthening of incompatible responses has been used very widely in adult psychiatry, and numerous examples of considerable interest have been reported in the literature (see Wolpe, 1958; Eysenck, 1960, 1964). These include (e.g. Jones, 1956) cases in which it has been necessary first to treat peripheral symptoms by one means and then to treat the more central emotional disorders by another means. The majority of reports concern the treatment of single or related groups of symptoms, but this form of therapy has also been applied to complex neurotic states.

These reports illustrate many of the advantages of reciprocal inhibition therapy but may not sufficiently well indicate its disadvantages and the difficulties which are frequently encountered. These may be related to the patient's symptoms or may be difficulties of a practical nature. Often, the immediate stimulus for an anxiety reaction is not some easily recognizable environmental situation but a recurrent thought which comes into the patient's mind. He may be upset by and avoid funerals, cemeteries, and other things associated with death, but also frequently just think of dying, apparently spontaneously, and suffer similar panic attacks. The external stimuli for such thoughts are extremely difficult to recognize. Even when the relevant stimuli are environmental they have often, by generalization, become numerous and complex. On the response side, too, there may be a multiplicity of abnormal reactions. Instead of a simple phobia there may exist a complex phobic state with obsessional reactions, chronic diffuse anxiety, intermittent depression, and psychosomatic symptoms. In the writer's experience, depression, even when reactive to a general situation, cannot in the same way as anxiety be brought under experimental control by environmental manipulation, and may interfere grossly with the course of behaviour therapy.

The main practical difficulty in applying the reciprocal inhibition form of behaviour therapy is that of translating the theoretical generalization gradient into a real-life, finely graded series of stimuli. Wolpe's systematic desensitization technique reduces this difficulty and he claims that this form of stimulus presentation is therapeutically superior to real-life presentations. There is, however, some evidence that certain patients require some specific real-life experiences before therapeutic change can occur. A related difficulty arises when the neurotic condition is so severe and widely generalized that it is extremely difficult to discover an appropriate stimulus situation which is far enough down the anxiety hierarchy for the patient to be sufficiently at ease to allow the reciprocal inhibition process to begin. Hypnotic techniques are then sometimes useful as an additional form of control of the patients' reactions.

SATIATION

Another behaviour therapy technique, less popular and probably less efficient, depends upon the principle of *satiation*. In laboratory experiments, it has been shown that a response evoked repeatedly and at short intervals gradually loses strength and is ultimately extinguished. After a rest interval, the response reappears owing to the phenomenon of "reminiscence" but repeated series of massed extinction trials ultimately eliminate the response. The therapeutic analogue is for the patient to voluntarily reproduce some abnormal, usually motor response, such as a tic, as accurately and as frequently as possible over repeated prolonged periods of massed practice. Usually some preliminary experimentation is necessary to establish the optimal length and frequency of sessions and these are continued until the desired result is achieved.

This technique has been successfully applied to the treatment of children's tics (Jones, 1960(c); Walton, 1961) and even to temper tantrums (Williams, 1959) although, in the latter case, it was combined with other behavioural techniques. The theoretical weakness of satiation therapy is that it would not be expected to affect the conditioned emotional response which originally motivated the motor behaviour. Therefore, it should only be used alone in the "vicious circle" situation described earlier. A practical weakness is that the extinction of an imperfect voluntary imitation of a complex involuntary response may not completely generalize to the involuntary response itself. Dunlop (1946) claims good therapeutic results from his application of a closely related technique described as "negative practice", but he stresses the manipulation of conscious attitudes more than extinction.

OPERANT CONDITIONING TECHNIQUES

Operant procedures have, as yet, been little used in behaviour therapy, particularly with children, but a growing body of evidence suggests great

promise for the future. Operant conditioning in general and especially its relevance to the treatment of child psychiatric patients are discussed in an excellent recent review by Rachman (1962).

In operant or "Skinnerian" conditioning (Skinner, 1959) the frequency of some chosen naturally occurring response is altered by varying the consequences (reinforcement) fed back to the behaving organism. This is unlike "classical" or "Pavlovian" condition in which a response is controlled by varying its antecedents. In the classical experiments carried out by Skinner and his colleagues, including most of those relevant to human abnormal psychology, the individual being studied is isolated within a carefully controlled experimental environment and the relevant responses are automatically and continuously recorded by appropriate instrumentation. Emphasis is placed on the detailed and precise analysis and description of behaviour in terms of stimulus, response, reinforcement (which may be positive or negative, rewarding or punishing) and the reinforcing contingency. When the desired response, which may be complex, is not in the organism's behavioural repertoire it is introduced by a "shaping" procedure. This is essentially a successive approximation technique in which any response which remotely resembles or is a component of the one required is reinforced, and then reinforcement is restricted to progressively more strictly defined responses. Similar procedures are used to train discrimination between stimuli until, ultimately, the animal or human subject is trained to make very precise response in the presence of highly specific but possibly complex stimulus patterns. By the careful manipulation of reinforcement contingencies very high outputs of work may be maintained for long periods for very little reward.

Most of the experiments on abnormal human subjects so far have been experimental investigations without therapeutic intention, and have been mainly carried out on adult psychotic patients. A sample of these is presented in brief in order to consider their main implications:

Lindsley (1960) and his associates have made detailed studies of the operant behaviour of psychotic adult patients by adapting hospital rooms as man-size Skinner boxes. They have shown that chronic schizophrenics vary their behaviour in relation to various schedules of reinforcement and a wide range of incentives including food, coins, projected pictorial material, music and even social altruism. In the basic experiments, which have thrown a great deal of light on the characteristics of psychotic behaviour, the response was simple lever-pressing, but King *et al.* (1960), by a shaping procedure, developed this into complex problem-solving and social behaviour. They also found that operant rate is related in a curvilinear manner to a patient's clinical condition.

Ferster and de Meyer (1962) carried out operant studies on autistic children, making experimental use of devices such as a pinball game, vending machines, a kaleidoscope, and a trained pigeon. They successfully

“shaped” a variety of responses, employing reinforcers similar to those used by Lindsley. They suggest that social reinforcers may prove therapeutically valuable when dealing with this type of child.

Flanagan *et al.* (1958) brought the stuttering of three adult patients under experimental control. Aversive reinforcement in the form of a loud short blast of noise following any stutter was employed. The stutter was totally suppressed in one patient, and partially in the other two, but this suppression was maintained only briefly outside the experimental situation.

Brady and Lind (1961) report an ingenious and successful treatment of long-standing hysterical blindness in an adult patient. The patient was rewarded with points exchangeable for canteen vouchers for correct responses to the presence of a light. He gradually learned to respond only when a light was on and this ability generalized to situations outside the experimental room until, ultimately, his sight was regained.

An excellent example of therapeutic “shaping” of a response is provided by Isaacs and Goldiamond’s training of a catatonic schizophrenic who had been mute for 20 years. It was noticed that the patient made a slight eye movement when a packet of chewing-gum was accidentally dropped on the floor. He was immediately rewarded with a piece of gum, and, using the same reward, more frequent and more extensive eye movements were gradually shaped. At a later stage the reinforcement was made contingent upon various forms of vocalization until, eventually, speech was regained.

Award programme of training, inspired by operant methods, was successfully applied by Neale (1963) to the treatment of a small group of encopretic children. As the reaction of adults to soiling may have been rewarding for the child in terms of the attention gained, these incidents were ignored during the training except for the production of clean pants without comment. Successful defaecation in the toilet, however, was very promptly and vigorously rewarded with praise, sweets, etc. The procedure was carefully explained to the child and he was encouraged to visit the toilet at specified times but not to remain if defaecation was not successfully achieved within a few minutes. Later, he only went to the toilet when he experienced sensations of rectal fullness. This regime was successful in three out of four cases treated.

These and related studies demonstrate that operant conditioning methods can be used to modify and control complex and clinically relevant behaviour in both adults and children. By shaping procedures, new forms of behaviour can be encouraged to emerge, even when apparently beyond the potential of the individual concerned. A great variety of incentives has been investigated and many could be usefully employed for therapeutic purposes. The importance of reinforcement contingencies and the ability of appropriate intermittent schedules to maintain stable and enduring patterns of response have been repeatedly demonstrated.

The main advantages of operant techniques for the study of complex human behaviour are their applicability to the single case, the possibility

of strict experimental control of relevant variables and the exclusion of clinician or experimenter variables, and the manner in which findings may be quantitatively assessed. Their main practical disadvantage is that, to apply them efficiently, a great deal of expensive special instrumentation and properly designed experimental rooms are required.

From the therapeutic standpoint, the main weakness of the studies so far reported is that, although impressive demonstrations of laboratory control of symptoms have been reported, the generalization or carry-over of this improvement into everyday life has sometimes been disappointing. Possibly this is a consequence of the very precise nature of the training and a transitional "shaping" from the laboratory to ward, home, and work-place may be necessary. Generalization from the clinical situation into ordinary life certainly occurs in other forms of behaviour therapy and appears to occur more readily with operant methods when, as in Neale's treatment of enco- pro-sis, the training is carried out in a semi-natural environment.

Throughout this chapter, the emphasis has been placed on the treatment of neurotic disorders but behaviour therapy, and especially operant conditioning techniques, are equally relevant to the treatment and training of psychotic, braindamaged, mentally defective and other groups of patients. Lindsley (1964(a)) has recently published a very stimulating and challenging account of the use which may be made of operant procedures in the care of mentally retarded children. He (see also Lindsley, 1964(b)) also draws a valid distinction between what he terms therapeutic and prosthetic environments. Whereas a therapeutic environment is intended to develop behaviour which makes possible a return to normal social life, a prosthetic environment must operate continuously in order to reduce the effects of permanent handicaps. He shows how an experimental analysis of the relevant behaviour, along operant conditioning lines, can aid the design of such an environment.

AVERSIVE TECHNIQUES

The final type of behaviour therapy to be discussed is the aversive therapy commonly applied when the symptom to be treated is some form of behaviour, such as a sexual deviation, which, although offensive to society, provides gratification for the patient. Noxious or painful stimulation is applied while the patient behaves in the undesirable manner or is exposed and responding to stimulation associated with the symptom, and is discontinued when the behaviour ceases or the relevant stimuli are removed. This type of therapy is very rarely applied to children, partly because child patients rarely present with the types of symptom which have usually been treated in this way, and partly because of a therapist's natural disinclination to subject children to strong electric shock or emetic drugs, the noxious stimuli usually applied. It may, however, be quite as efficient to make use of considerable milder and less obnoxious aversive stimuli, such as the mo-

derately unpleasant noises sometimes used in operant conditioning. Experimentally determined, appropriate and extended schedules of reinforcement can more than compensate for the mildness of the stimulation.

Outside the clinic, of course, unsystematic punishment is extensively used in an attempt to control children's behaviour, but its effects are notoriously unreliable. The experimental findings concerning the effects of punishment are complex and often conflicting (see Church, 1963). A noxious stimulus is usually defined in terms of its autonomic and behavioural effects, but it is often difficult to decide whether mild intensities are aversive. They may not be on a particular occasion, but repeated applications may have marked effects. For obvious reasons few experiments of this type have been carried out on human beings, and great reliance has to be placed on the findings from animal experiments. From these, Thorndike early discovered that, although punishment tends to decrease the probability of a response, this suppression effect may only be temporary or may not even occur at all. In some instances, punishment may even have the paradoxical effect of strengthening the response it follows.

Experiments involving noxious stimulation may be designed in three ways, two of which have already been discussed in detail, i.e. escape and avoidance. In the escape procedure the relevant response terminates the noxious stimulation which precedes it. In avoidance situations the relevant response prevents or postpones the unpleasant stimulation. The findings with regard to these two procedures are fairly clear, and both may indeed be regarded as reward situations, the reward being escape from punishment. The third situation is that which may truly be described as punishment and the one from which variable and conflicting findings usually emerge. In the punishment procedure the noxious stimulus is initially absent and is produced by the relevant response.

From experiments of punishment a few broad generalizations may be considered to emerge:

(1) Response suppression is greater when the punishment is directly contingent upon the specific response and not applied in a general way to the total situation.

(2) There is a definite and sharp punishment gradient, i.e. a relationship between the degree of suppression and the time interval between the response and the punishment.

(3) Similarly, there is a positive relationship between the degree of suppression and the intensity of the noxious stimulus.

(4) In certain instances punishment may facilitate learning of a response.

There is one reported instance of a therapist (Boardman, 1962) who prescribed a quite severe punishment regime in real-life situations for a 5-year-old child with a fairly serious behaviour disorder. This was effective in a week and the improvement was maintained during follow-up but,

interestingly enough, the paper aroused the ire of behaviourists as much, if not more, than that of conventional child therapists.

Sears *et al.* (1957) suggest that the punishment of children may be effective if combined with positive reward for some alternative response but, alone, it normally only achieves a temporary suppressive effect. They also describe unfortunate side-effects as when a parent, by physical punishment, presents the child with a model of aggressive behaviour which he may copy. There is, in fact, a demonstrated tendency for children who are subjected to a considerable amount of punishment to display the aggressive type of behaviour problem, but a correlation of this type cannot establish the direction of any causal relationship.

In line with what is known about the various effects of noxious stimulation, an aversive behaviour therapy situation is arranged so that the stimulation is brought into as close a temporal relationship as possible with the offending response, and with as many associated stimuli as possible so as to generate a powerful conditioned aversive emotional reaction. If the punishment follows the response it must precede or inhibit any gratification deriving from that response. Because of the greater reliability of escape and avoidance responses when compared with suppression by punishment, cessation of the noxious stimulation is made to coincide as exactly as possible with termination of the response to be eliminated, or with any behaviour which has the effect of removing stimuli evocative of the behaviour being treated. These time relationships are considered to be of great importance as they are the main element neglected in the notoriously inefficient everyday procedures of social punishment. To combat extinction of the therapeutic effect, an intermittent reinforcement schedule should also be employed.

CONCLUSION

No overall assessment is possible of the therapeutic efficacy of behaviour therapy applied to children. Even with adults, controlled trials are only now being started and no firm conclusions can be drawn. Nevertheless the literature now contains reports of apparently successful behavioural treatment of a wide range of neurotic conditions including phobias, hysteria, sexual disorders, tics and tension states. The majority, however, are concerned with the treatment of relatively isolated symptoms, or related groups of symptoms, in highly co-operative patients whose anxieties and symptoms could be readily shown to be reactive to aspects of the environment which could be manipulated by the therapist. Few accounts are available of the behaviour treatment of all the ramifications of the neurotic personality.

Behaviour theory, of course, is not only relevant to simple motor and autonomic aspects of behaviour but also to complex verbal, social, and even "thinking" behaviour, and experimental work in these fields is making impressive strides. Therefore it is of great interest to note that some psycho-

logists are linking these fields with behaviour therapy (e.g. Bandura, 1961; Krasner, 1963) and carrying out studies of verbal and social learning in the therapeutic setting. This is a field of research which may add greatly to the sophistication of behaviour therapy and bring the social relationship between patient and therapist into greater prominence.

In any form of psychological treatment, behavioural or otherwise, it is essential that the therapist establishes a reasonable human relationship with the patient, based on respect, tolerance, sympathy and understanding. When behaviour therapy is prolonged, or involves much interpersonal activity, it frequently happens that the patient develops a strong personal attachment to the therapist. This may be exploited to reinforce learning, or even utilized as a setting for social learning, but the stronger the interpersonal relationship the less clear is the distinction between behaviour therapy and conventional psychotherapy. Possibly, no absolute distinction is ever valid as all forms of psychotherapy inevitably involve learning and re-education even if this is not an explicit goal. There is, however, a marked difference in the emphasis placed on learning, and behaviourist principles tend to indicate more active treatment than is usual in psychotherapy. Attention is also focused on the development of new responses rather than the "understanding" of existing behaviour.

In summary, it would seem fair to claim that behaviour therapy has established its right to be taken seriously, but offers no panacea. It is a developing, open system of theory and practice closely linked with the rapidly expanding field of experimental psychology, and sharing the concepts and language of that field. It has already made a contribution to psychiatry by focusing attention on the undoubtedly important learning processes involved in the aetiology of neurosis and in its treatment. It has also drawn attention to the importance of the role which overt behaviour may have in these processes. At the same time, an apparent neglect of the equally or more important roles of verbal and interpersonal factors is a temporary consequence of its present stage of development and is being rectified.

REFERENCES

- BANDURA, A. (1961) Psychotherapy as a learning process. *Psychol. Bull.* **58**, 143-159.
- BANDURA, A., and WALTERS, R. H. (1963) *Social learning and personality*. New York: Holt, Rinehart & Winston.
- BERKOWITZ, L., (1964) *Aggression*. New York: Basic Books.
- BOARDMAN, W. K. (1962) Rusty: a brief behavioural disorder. *J. Consult. Psychol.* **26**, 293-297.
- BRADY, J. V. (1962) Psychophysiology of emotional behaviour. In A. J. Bachrach (Ed.) *Experimental foundations of clinical psychology*. New York: Basic Books.
- BRADY, J., and LIND, D. L. (1961) Experimental analysis of hysterical blindness. *Arch. Gen. Psychiat.* **4**, 331-339.
- BROADHURST, P. L. (1959) The interaction of task difficulty and motivation: the Yerkes-Dodson law revived. *Acta Psychol.* **16**, 321-338.

- CHURCH, R. M. (1963) The varied effects of punishment on behaviour. *Psychol. Rev.* **70**, 369-402.
- DEKKER, E., and GROEN, J. (1956) Reproducible psychogenic attacks of asthma. *J. Psychosom. Res.* **1**, 58-67.
- DOLLARD, J., MILLER, N. E., DOOB, L. W., MOWRER, O. H., and SEARS, R. R. (1939) *Frustration and aggression*. New Haven: Yale University Press.
- DUNLOP, K. (1946) *Personal Adjustment*. New York: McGraw-Hill.
- EYSENCK, H. J. (1957) *The dynamics of anxiety and hysteria*. London: Routledge & Kegan Paul.
- EYSENCK, H. J. (Ed.) (1960) *Behaviour therapy and the neuroses*. London: Pergamon.
- EYSENCK, H. J. (1963) Behaviour therapy, extinction and relapse in neurosis. *Brit. J. Psychiat.* **109**, 12-18.
- EYSENCK, H. J. (Ed.) (1964) *Experiments in behaviour therapy*. London: Pergamon.
- FERSTER, C. B., and DE MEYER, M. (1962) A method for the experimental analysis of the behaviour of autistic children. *Amer. J. Orthopsychiat.* **32**, 89-98.
- FLANAGAN, B., GOLDIAMDON, I., and AZRIN, N. (1958) Operant stuttering—the control of stuttering behaviour through response—contingent consequences. *J. Exp. Anal. Behav.* **1**, 173-177.
- HEBB, D. O. (1949) *The organisation of behavior: a neurophysiological theory*. London: Chapman & Hall.
- HILGARD, E. R. (1956) *Theories of learning*. New York: Appleton-Century-Crofts.
- JACOBSON, E. (1938) *Progressive relaxation*. University of Chicago Press.
- JONES, H. G. (1956) The application of conditioning and learning techniques to the treatment of a psychiatric patient. *J. Abnorm. Psychol.* **52**, 414-420.
- JONES, H. G. (1960(a)) Learning and abnormal behaviour. In H. J. Eysenck (Ed.) *Handbook of abnormal psychology*. London: Pitman.
- JONES, H. G. (1960(b)) The behavioural treatment of enuresis nocturna. In H. J. Eysenck (Ed.) *Behaviour therapy and the neuroses*. London: Pergamon.
- JONES, H. G. (1960(c)) Continuation of Yates' treatment of a tiqueur. In H. J. Eysenck (Ed.) *Behaviour therapy and the neuroses*. London: Pergamon.
- JONES, H. G. (1961) Specific conditioning treatment of enuresis nocturna. *Cerebral Palsy Bull.* **3**, 227-236.
- JONES, M. C. (1924) A laboratory study of fear: the case of Peter. *Pedagogical Sem.* **31**, 308-315.
- KING, G. F., ARMITAGE, S., and TILTON, J. (1960) A therapeutic approach to schizophrenics of extreme pathology. *J. Abnorm. Soc. Psychol.* **61**, 276-286.
- KRASNER, L. (1963) Reinforcement, verbal behaviour and psychotherapy. *Amer. J. Orthopsychiat.* **33**, 601-613.
- LACEY, J. I., BATEMAN, D. E., and VAN LEHN, R. (1953) Autonomic response specificity. *Psychosom. Med.* **15**, 8-21.
- LACEY, J. L., and SMITH, R. L. (1954) Conditioning and generalisation of unconscious anxiety. *Science* **120**, 1045-1052.
- LACEY, J. L., SMITH, R. L., and GREEN, A. (1955) Use of conditioned autonomic responses in the study of anxiety. *Psychosom. Med.* **17**, 208-217.
- LAZARUS, A. A. (1959) The elimination of children's phobias by deconditioning. *Med. Proc. (S. Africa)* **5**, 261-265.
- LINDSLEY, O. R. (1960) Characteristics of the behaviour of chronic psychotics as revealed by free-operant conditioning methods. *Dis. Nerv. System* **21**, 66-78.
- LINDSLEY, O. R. (1964(a)) Direct measurement and prosthesis of retarded behaviour. *J. Educ.* **147**, 62-81.
- LINDSLEY, O. R. (1964(b)) Geriatric behaviour prosthetics. In R. Kastenbaum (Ed.) *New thoughts on old age*. New York: Springer, 41-60.
- LOVBOND, S. H. (1964) *Conditioning and enuresis*. London: Pergamon.

- MARKS, I., and GELDER, M. C. (1964) *Lancet*. In Press.
- METZNER, R. (1961) Learning theory and the therapy of the neuroses. *Brit. J. Psychol., Monogr. Suppl.* 33.
- MILLER, N. E. (1944) Experimental studies of conflict. In J. McV. Hunt (Ed.), *Personality and the behaviour disorders*. New York: Ronald Press.
- MILLER, N. E., and DOLLARD, J. (1945) *Social learning and imitation*. London: Kegan Paul, Trench, Trubner.
- MOWRER, O. H., and MOWRER, W. (1938) Enuresis: a method for its study and treatment. *Amer. J. Orthopsychiat.* 8, 436-459.
- NEALE, D. H. (1963) Behaviour therapy and encopresis in children. *Behav. Res. Ther.* 1, 139-149.
- PAVLOV, I. P. (1927) Conditioned reflexes; an investigation of the physiological activity of the cerebral cortex. London: Oxford University Press.
- PETERSON, D. (1961) Behaviour problems of middle childhood. *J. Consult. Psychol.* 25, 205-209.
- RACHMAN, S. (1962) Learning theory and child psychology therapeutic possibilities. *J. Child Psychol. Psychiat.* 3, 149-163.
- SEARS, R. R., MACCOBY, E. E., and LEVIN, H. (1957) *Patterns of childrearing*. Evanston: Row, Peterson.
- SEARS, R. R., WHITING, J. W. M., NOWLIS, V., and SEARS, P. S. (1953) Some childrearing antecedents of aggression and dependency in young children. *Genet. Psychol. Monogr.* 47, 135-234.
- SELYE, H. (1955) Stress and disease. *Science* 122, 625-631.
- SHIELDS, J., and SLATER, E. (1960) Heredity and psychological abnormality. In H. J. Eysenck (Ed.) *Handbook of abnormal psychology*. London: Pitman.
- SKINNER, B. F. (1959) *Cumulative record*. New York: Appleton-Century-Crofts.
- SLATER, E. (1964) Genetical factors in neurosis. *Brit. J. Psychol.* 55, 265-269.
- SOLOMON, R., and WYNNE, L. (1954) Traumatic avoidance learning. *Psychol. Rev.* 61, 353-383.
- WALTON, D. (1961) Experimental psychology and the treatment of a tiqueur. *J. Child Psychol. Psychiat.* 2, 148-155.
- WILLIAMS, C. D. (1959) The elimination of tantrum behaviour by extinction procedures: Case report. *J. Abnorm. Soc. Psych.* 59, 269.
- WOLPE, J. (1958) *Psychotherapy by reciprocal inhibition*. Stanford Univ. Press.
- YERKES, R. M., and DODSON, J. D. (1908) The relation of strength of stimulus to rapidity of habit-formation. *J. Comp. Neurol. Psychol.* 18, 459-482.

CHAPTER 5

Opportunities for School Psychologists in the Primary Prevention of Mental Disorders in Children†

by GERALD CAPLAN

PRIMARY Prevention is a public health term denoting measures to reduce the incidence of a disorder in the community, namely, to lessen the rate of new cases of this disorder occurring during a specified period of time. In contrast to Secondary Prevention, which aims at lowering the frequency of sick persons at a particular time by successful treatment of established cases prior to that time, so that the duration and therefore the number of old cases is reduced, Primary Prevention focuses not upon persons who are sick but upon those factors which lead to sickness. At the present time we do not know the etiology of many mental disorders, but we do have some plausible assumptions regarding factors which are conducive or inimical to mentally healthy functioning, and based upon these it is possible to develop programs which may lower the risk of persons reacting to life experiences in a mentally unhealthy way.

In the field of mental health a conceptual model borrowed from the field of physical nutrition is helpful in clarifying some basic issues. We can conceive of health, personality development and the avoidance of mental disorders as depending upon the provision to the individual of adequate supplies, physical, psychosocial, and socio-cultural, which are appropriate to his successive phases of growth and development. Under-provision or over-provision of these supplies in relation to his current needs constitutes a pathogenic influence which may lead to an immediate mental disorder, because the individual can find no healthy reality oriented way of coping with the stress, and is forced to deal with it by the magic of neurotic symptoms or by separating himself from the burdensome world of reality through some alienating psychotic response. It may also lead to a weakening of personality through the development of a pattern of evading the issue, which may be successful on this occasion, but may break down in the face of some future difficulty. On the other hand, many individuals will master

† Lecture Delivered at Annual Meeting of California Association of School Psychologists, Los Angeles, March 15, 1962.

the current pathogenic influence, because adequate supplies in the past have given them psychological strength and resilience, and because they make active use of alternative sources of supply in the present.

Primary Prevention of mental disorders has the long-term goal of ensuring continually adequate physical, psychosocial, and socio-cultural supplies, which both avoid stress and increase the basic capacity to withstand future stress; and also the short-term goal of providing current help to individuals wrestling with life difficulties so that they may find healthy ways of mastering them.

The long-term goals and the short-term goals can be conceptually linked by using the theory of Crisis. This theory focuses upon the phenomena which are regularly manifested when an individual struggles with a current life stress, related either to the loss or threat of loss of his basic supplies, or to a novel situation which challenges him beyond his current capacity. A period of cognitive and emotional upset ensues for the individual, whose previous equilibrium of behavior is disorganized by burdens and demands which he has no ready way of escaping or mastering. He is said to be in a state of personal crisis—he is usually confused, and he suffers from a rise of tension and from a variety of negative feelings, such as anxiety, depression, anger, shame, guilt and frustration. The most characteristic manifestation of a crisis is that it is self-terminating—after a relatively short period of a few days to a few weeks, the tension dies down, the negative feelings dissipate, and the individual achieves a new equilibrium. This occurs as a result of a complicated series of changes, both in the psychological structure of the individual, and in his relationships with his environment. These adjustments and adaptations suffice to deal with whatever problem precipitated the crisis. Important for the current or future mental health of the individual is the pattern of his coping behavior during the crisis. Studies^(1, 2, 3) have shown that some individuals, during such a crisis, struggle with their problems in an effective way and achieve a reality based, culturally acceptable, pattern of adjustment and adaptation. These individuals emerge to a new equilibrium which is healthier than their previous state. During the crisis they added to their previous repertoire of defences and problem-solving methods some novel responses which have increased their capacity in the future successfully to master new stresses. They are less likely than previously to be forced to deal with such situations by magical, regressive, or alienating mechanisms, which lead to mental disorder.

Other individuals show the opposite picture. They do not cope adequately with the crisis problems. They do develop novel responses, but these are ineffectual—that is, they evade the issues, or they make use of magical or regressive defences. They emerge to a new equilibrium which is mentally less healthy—either an overt disorder, or an increased likelihood of future disorder, because they have incorporated new neurotic or psychotic defences into their problem-solving repertoire.

The previous history of a mentally healthy individual shows that he has passed through a succession of crises, some of them associated with expectable transitions in his biological development or in his psychosocial role—the so called bio-psycho-social developmental crises, such as the socialization crises of early childhood, becoming a school child, becoming an adolescent, getting engaged and married, becoming a parent, etc.—and some associated with accidental happenings, such as personal illness, death of a loved one, natural or social disaster, etc. At each of these crises a more or less significant development of his personality occurred. The improvement in his capacity to deal with life in healthy ways has occurred in a series of spurts, and during each crisis a personality enrichment took place.

In contrast, the history of a mentally unhealthy individual shows a series of crisis way stations, at each of which wrong paths were taken, so that his personality developed more and more significant weaknesses, until a “straw broke the camel’s back”, and he emerged from a particular crisis with an overt illness. Looking back at his life, it can be conceived that on a number of occasions it might have been possible for him to have chosen different coping mechanisms and to have taken a healthier path in his life trajectory.

This idea raises the question of what differentiates the group of effective copers, who emerge from crises with improved mental health from the group of inadequate copers, who emerge with worsened mental health. Are crisis states during which those with healthy personalities inevitably get stronger and those with unhealthy personalities get weaker? Some light is thrown upon this question by attempts which have been made, mainly in the armed services, to predict from personality studies how individuals are likely to react during, and after, particular crises. Such studies, carried out with much energy in a number of countries, and using a variety of personality tests, have been uniformly unsuccessful in making accurate predictions, except in extreme cases. It is clear that an individual’s reaction during crisis is influenced by the personality with which he enters the situation, and by all his past experience; but studies of crisis show that his coping patterns and the crisis outcome are also influenced both by the vicissitudes of the life events during the crisis period and their personal significance to him, and in addition by the details of his social interactions during the crisis. A person rarely faces crisis on his own. He is usually involved during that period in relationships with his family and friends, and with professional and non-professional members of his community. As his tension rises during a crisis, he usually tries to elicit help from these people, and the signals of distress which he emits usually stimulate the latter to intervene on his behalf—a complementary pattern which has primitive bio-social roots. Moreover, during the disequilibrium of a crisis an individual is more susceptible to influence by others than during his customary psychological steady state.

This means that the failure of personality tests to predict crisis response is due to the outcome being influenced to a major degree by the details of

the developing crisis situation and by the nature of the material and psychological assistance derived from significant others during the crisis period. Direct studies of the reactions of individuals during crisis have corroborated this. The way a mother copes with the crisis of the birth of a premature baby is much influenced by the reactions of her husband and other relatives, as well as by the behavior of the hospital nurses and doctors, and by the help she receives from public health nurses and pediatricians when she takes the baby home.⁽¹⁾ The way a patient handles the crisis of a surgical operation can be modified by the assistance he receives from doctors and nurses.⁽⁴⁾ The way a bereaved person handles the crisis of the removal by death of a loved one is influenced by the reactions of his family and social group and by the ministrations of his priest or clergyman.⁽⁵⁾

This leads us to the realization that since life crisis involves not only the danger of provoking mental disorder but also an opportunity for improved mental health, an important aspect of basic bio-psycho-social supplies is training in crisis coping, and also the provision of services so that during inevitable crises individuals will receive appropriate material and psychological help to assist them to cope adequately with the current situation, and to improve their capacity to withstand future stress.

IMPLICATIONS FOR PRIMARY PREVENTION IN SCHOOLS

I. Ensuring Adequate Basic Supplies

(a) Physical Supplies

“Mens sana in corpore sano” is an accepted slogan in most schools in this country, and there is little need to dwell here on this issue, which lies more in the province of the athletic coach, the school nurse, and the school doctor, than in that of the psychologist. It may be relevant, however, to emphasize that those focused primarily on mental health must collaborate actively with the workers mainly interested in physical health. In such instances as inadequate nutrition of under-privileged children, disorders of vision and hearing, or culturally based prejudice against exercise, psychologists should be alert to invoke the aid of the health workers for the benefit of children who have first come to their attention. It is also necessary to build up satisfactory relationships with the doctors and nurses so that they in turn will call upon the psychologist for advice and collaboration in cases of acute and chronic physical illness. The treatment and rehabilitation of a physical defect usually carries with it the opportunity for primary prevention of psychological disorder.

(b) Psychosocial Supplies

The provision of most of these supplies, such as love and affection, a balance between gratification and control of instinctual wishes, appropriate

balance between support of dependent needs and the fostering of independence, and provision of personality role models and a primary group as a basis for identity formation, etc., takes place outside the school in the family circle. On the other hand, especially in kindergarten and the earlier grades, the school acts as an extension of the family group, the teacher being a supplementary parent figure, and the other children being accessory sibling figures who can complement and, if necessary, replace supplies which are inadequately provided at home. Later on, as children approach adolescence, teachers become important non-parental role models, and the peer group of children becomes an essential reference group for the development of values which are incorporated as an enrichment of personality. Throughout school life the interchange with teachers and other children provides an opportunity for developing interpersonal skills, and for the consensual validation of a child's feeling about his own identity.

(c) *Sociocultural Supplies*

The school shares with the family the task of providing most of the basic sociocultural supplies during childhood. Among community agencies its role in this area is pre-eminent, and although religious and recreational agencies have their part to play, and general neighborhood and community traditions and expectations have an important moulding effect on the child's personality, it is the school, as the socializing instrument of the community, which determines to a considerable extent how the child perceives the world and its problems, and how he goes about dealing with them. The effect of the school on the child is partly cognitive—in developing and patterning his perceptual set and his methods of problem-solving. Many people believe that the basic function of the school is in teaching children how to think, which in turn influences how they act and react. Ojemann⁽⁶⁾ has criticized the content and process of teaching which obtains in many schools in this country. He believes they encourage children to develop what he calls "a surface approach", in which they react in judgmental and stereotyped ways to the manifestations of situations, including the actions of others. He has suggested alterations in the content of teaching materials and in methods of teaching, which foster a "causal orientation", that is an approach in which the child attempts to understand the causes of the phenomena he perceives, and to choose from among a range of alternatives those reactions which are in keeping with the complicated nature of the presenting situation. This "causal approach" is not taught as a special course, but, as Ojemann has shown, can be integrated in all phases of the school curriculum. He has evaluated the differences in those children exposed to this type of teaching as compared to traditional instruction, and has shown that the former children are better able to deal with the confusion and ambiguity of a difficult problem, and are more flexible in working out effective solutions—both of which have positive implications for crisis-coping.

Ojemann's work points to a significant role for school psychologists in collaborating with educators, in order to modify teaching materials and methods so that children are better equipped with those problem-solving skills which will help them deal in a mentally healthy reality based way with future crisis situations.

The contribution of the school to the personality development of children is, of course, not confined to the cognitive area. Both the inculcation of values, which influence motivation, and the development of skills to master and exploit feeling are an essential aspect of education—the so-called character-building upon which good educators have always placed so much emphasis. In relation to improving a child's capacity to deal in a mentally healthy way with life's problems, particular importance is to be ascribed to training him to withstand frustration and anxiety, to persevere with problem-solving in the face of difficulty, to confront his problems actively and maintain them in consciousness despite their unpleasantness, and to be able to ask for help and use it without a weakening loss of self-esteem.

The work of a group of psychologists associated with the Bank Street School in New York, and reported by Barbara Biber,⁽⁷⁾ is a good example of the contribution of psychology to the understanding of the mental health implications of the total pattern of the educational process and of the school setting—what Biber calls “the ‘organized complexity’ of total school functioning”, that includes not only intra-classroom processes but also the value system and psychological atmosphere of the school, “the interaction patterns among staff, between parents and school personnel, and between the school and its community”. Biber and her colleagues show how all these factors influence the moulding of the child's developing personality, with particular reference to psychological resilience and robustness, which are not only a basis for effective functioning and creativity, but also a bulwark against mental disorder.

The work of Ojemann and Biber points to a significant role for psychologists in the school system as participant observers of school life with reference to its general implications for the present and future mental health of the children, and as resourceful persons who can advise on modifications which may improve the provision of psychosocial and sociocultural supplies. The primary actors in this process are the school administrators and teachers. They are the people who initiate and maintain the educational program and determine its setting, in response to their own personalities, training, and professional experience, and to the prescriptions and demands of the community. They have always been interested in the “character building” aspect of their work, and they have developed humanistic traditions to deal with this. In recent years many educators have become aware of the specialized researches and thinking of psychologists and would be interested in exploiting this added resource in developing new approaches to their educational goals. On the other hand, psychologists must move cautiously in

this area, first, because we are relative newcomers in this field and have as yet little scientifically validated knowledge upon which to base specific advice, and second, because mental health, although *our* chief professional goal, is not the primary goal of education, and sometimes must yield precedence to other goals, such as technical proficiency or social conformity, which the community enjoins upon its school system. Moreover, administrators and educators may feel threatened by the demands of psychologists for changes in traditional patterns, and may be ambivalent and uncertain about possible unfortunate and unexpected side effects of changes which are advocated by those who lack expert knowledge of education.

Nevertheless, psychologists may achieve major mental health goals if they can develop relationships of mutual trust with educators so that the latter will invoke their help in regard to adding a new mental health dimension to their planning and program management. The contribution of the psychologists will occasionally be in the form of specific advice about course or curriculum content and timing, but more often it will take the form of putting forward a point of view about the psychosocial and sociocultural needs of children which the educators may find useful in coming, on their own, to a more sophisticated decision. This point of view should wherever possible be backed by communication of research findings, such as those of Ojemann⁽⁶⁾ and Biber,⁽⁷⁾ and this means that school psychologists should act as channels of information and as interpreters, to the educators, of significant research and professional thinking gleaned from psychological and mental health literature, and from conferences such as the present.

Psychologists who are interested in this approach may benefit from certain principles and practices of community organization which have been found useful in community mental health. In this field we have discovered that in order to be optimally effective as professional consultants and expert resourceful persons it is important not to campaign actively for our own goals with missionary or reforming zeal. Such behavior tends to arouse resistance among members of other professions with different value systems and traditions—which is particularly unfortunate if they happen to have not only the responsibility but the authority to reject discordant elements. Instead, we try to make ourselves available to our colleagues and to offer help on their terms in relation to their current felt needs. Little by little, they learn what we have to offer, and begin to respect our competence and our point of view. We take care not to trespass beyond the boundaries of our sanctioned roles, that is we do not tell *them* how they should manage *their* affairs, and we show our respect for their areas of professional competence by not presuming to judge their functioning. Instead we stay strictly within the limits of what we have been specifically asked to do in the community by virtue of our own professional training and experience. On the other hand, we do try to arrange for our roles not to become circumscribed so that we get shut off in a corner. Instead, we try and obtain sanction to move

relatively freely within the system, so that we can establish proximity with colleagues with whom we can interact and build up the mutually respectful relationship which is the essential prerequisite for being asked for meaningful consultation assistance. The permission to move around in the system is also important because it provides us with the opportunity to learn at first hand how our colleagues perceive their problems and deal with them, since this knowledge is essential if we are eventually to understand the inner meaning of the questions they ask us and the nature of those replies which will have significance for them. Probably the most important insight is that gaining the acceptance of members of another profession and learning how they operate within their system is often a lengthy process. It cannot be hurried. It is rarely a smooth process. We have to develop a common language, mutually acceptable ground rules of interaction and behavioral cues, and free channels of communication. We have to get to know and respect each other, which means that we have to overcome personal and cultural stereotypes that distort our view of each other. This is a two-way process and requires effort and patience on both sides. For instance, many teachers have the stereotyped fantasy that psychologists are mind readers and will ferret out their personality weaknesses and their socially unacceptable instinctual desires. This naturally leads to some anxiety and defensiveness in relating to a psychologist. On the other hand, many psychologists imagine that teachers who do not share their systematic knowledge of the laws of psychology are ill equipped to understand and deal with interpersonal matters. This may lead to a belittling attitude of superiority, which they may unsuccessfully try to hide, and which may blind them to the evidence that the teachers have their own conceptual systems for guiding their handling of interpersonal transactions, which may not be so elegantly expressed as the psychologists, but which in many cases may be not less effective as a basis for action.

II. Helping Children to Cope With Crises

In contrast with efforts to ensure adequate basic physical, psychosocial, and sociocultural supplies, which are long continuing and are directed to the entire school community and its effect on all children, the present section deals with short-term activities focused upon specific children or groups of children, who are currently upset, or in whom it is possible to predict upset in the near future. There is a link between these short-term activities and the ongoing program of ameliorating the school environment, because every individual case should also be considered in relation to its general implications; and repetition of cases of similar types in certain grades or at characteristic times in the school year should always stimulate the consideration of general policy changes which may attenuate the hazards or challenges so that they may be less burdensome. It is not possible or desirable to prevent

crisis altogether by obviating threat, loss, or challenge, but if these can be reduced in intensity or sometimes postponed till individuals have acquired greater problem solving capacity, there is more likelihood that the crisis will be adequately handled and will lead to a healthy outcome.

(a) *Identification of a Crisis*

The recognition of crisis depends mainly upon observing signs of the relatively sudden onset of cognitive and emotional disequilibrium in a child whose previous pattern of functioning was known to be fairly stable. Classroom teachers are in an excellent position to identify crises in their students because of their hour-by-hour and day-by-day observation of their behavior. A child's functioning is not static. He shows minor variations of emotional response and cognitive effectiveness. Some children are more unstable in this respect than others. Teachers, however, learn the expectable and consistent styles of each of their children, and can identify marked deviations when they occur.

It is probable that crises only achieve significance as turning points in personality development when they have a duration of at least several days, and when their intensity is such as to lead to observable rise of tension, lowered effectiveness in learning, and signs of negative feelings, such as anxiety, depression, anger, shame, and guilt, which are not consonant with the current reality situation. Children in such states of turmoil should not be thought of as emotionally disordered or ill, even though they are cognitively and emotionally disturbed. The disturbance is the sign that they are wrestling with a problem which is for the time being insoluble, and it usually does not last longer than 4-6 weeks. If a disturbance lasts for a longer period it probably is not a crisis or reaction to a current problem, but is a true emotional disorder, which represents a stabilized outcome of a crisis. Temporary crisis upsets occur both in mentally healthy and mentally unhealthy children. It is therefore sometimes difficult to differentiate a crisis in a neurotic child from some endogenously provoked exacerbation of his chronic symptoms.

Most psychological screening instruments will not differentiate children in crisis from those with stable emotional disorders, so any systematic screening program, such as that developed in California,^(8, 9) will screen out not only the emotionally disordered but also those children who happen to be in crisis at the time.

Identification of crisis is facilitated not only by observing the response of a child, but also by knowing that he is currently confronted by the loss or threat of loss of a source of basic bio-psycho-social supplies, or by a challenge which burdens his readily available resources. Similar environmental situations will not evoke crisis in all children, since the subjective meaning of the situation will vary from child to child because of his cultural and personal background, and because some children may have learned in the

past to handle such a situation with relative ease. It is possible, however, to identify situations which are likely to provoke crisis in a significant proportion of children, and this enables us more easily to diagnose that certain behavioral upsets are likely to be signs of crisis, and also to predict that when such situations occur a certain number of children will become upset.

As previously indicated, these hazardous or challenging situations are of two main types—*regularly occurring biopsychosocial transitional points* and *accidental happenings*. The so-called developmental crises occur both in relation to expectable endogenous changes associated with biological and psychological growth and development phases which are more or less linked with chronological age, such as the stages of personality development described by Freud,⁽¹⁰⁾ Piaget,⁽¹¹⁾ and Erikson,⁽¹²⁾ and also in relation to the regular succession of events associated with a child's school career, such as the transition period on entering kindergarten, between kindergarten and first grade, on leaving the early grades—usually during fourth grade, between junior high and senior high, during the last year before college, etc. A survey of a school population should show a number of regularly occurring peaks in the incidence of children in crisis related to the consonance of transitional periods in biopsychological and school career development phases.

Superimposed upon these will be the accidental situations—(a) family problems associated with such events as illness or death of a family member, birth of a sibling, economic insecurity, change of father's job, mother going out to work, change of address to a new neighborhood, etc.; (b) personal illness of the child, which may be hazardous in itself and may be associated with added burdens because he may miss critical learning opportunities which may not be repeated; and (c) problems in school, such as status or prestige change due to academic or athletic failure or success, loss of relationship with a significant teacher or a school friend because of illness or death or because of moving to another class, etc.

(b) *The Role of the School Psychologist*

The preventive activities of school psychologists in relation to crises in children can be considered under three headings: (1) Direct Action, (2) Indirect Action and (3) Research.

(1) *Direct Action*

Here the psychologist intervenes directly with individual children or groups of children, either while they are in crisis, which is called Preventive Intervention, or before a crisis occurs, which is called Anticipatory Guidance or Emotional Innoculation.

(1a) *Preventive Intervention*

The psychologist may intervene in the case of an individual child during a crisis, or he may deal with a group of children, all of whom may be in

crisis due to a common hazard or challenge, such as an impending exam or the problems of transition between high school and college.

The essence of Preventive Intervention is that the psychologist knows enough about patterns of effective and ineffective coping that he can identify among children in crisis those who are using poor coping mechanisms, and with whom he then interacts, so as to influence them to adopt more effective coping patterns. Klein and Lindemann⁽¹³⁾ have described some of the techniques involved.†

It appears that every situation of hazard or challenge is associated with its own characteristic succession of psychological tasks, which the child must master in the appropriate order in order to deal effectively with the total situation.⁽³⁾ Psychologists are building up a fund of knowledge derived from experience with various crisis situations and the range of reactions to them, upon which they are basing the identification of unhealthy responses, and working out the details of alternative mechanisms which they influence the children to utilize. This influence is partly educational and partly psychotherapeutic—it is energized by an ego-supportive relationship between psychologist and child, and the leverage of this is used to direct the child to confront his crisis tasks in a reality based way. We still do not know much about this process, and there is a need for further research and empirical trial.

In addition to the detailed responses which are specific to each crisis situation, we have reason to believe that there are certain global patterns of coping that appear applicable to most crises,⁽²⁾ and that can be recognized to be adaptive or maladaptive. In general, the psychologist should influence children to confront their crisis problems actively rather than to evade or deny them, which implies maintaining the problem in consciousness, actively collecting information about the factors involved and how to deal with them both by personal observation and thinking and by asking others who have been through the experience or who know of people who have. The psychologist should influence the children to allow themselves to feel and express the negative feelings associated with the crisis, rather than suppress or deny them. He should counteract any marked tendency to release tension by blaming others or themselves for the difficulty. He should assist the children to master their expressed feelings both by their own efforts, and in interaction with himself and with significant others in their environment. He should help the children become aware of their state of fatigue and manage their coping efforts accordingly, so that they take sufficient rest periods, and yet so that they return to dealing with the problems as soon as they have recovered their strength. The psychologist should also influence the children in crisis to ask for appropriate help from their families, teachers, and friends, both in handling feelings and in dealing with the material aspects of their tasks; and he should be especially active both in encouraging the children

† I have discussed certain of the practical issues in my recent book *An Approach to Community Mental Health*.⁽¹⁾

and in influencing their families and friends in those cases where he sees any reluctance to ask for help or to offer it. Wherever possible, the psychologist should intervene not only with the children in crisis but also with their families, to whom he should offer his support and active guidance.⁽¹⁾

Many of these suggestions for crisis intervention are probably what most psychologists might spontaneously think of doing in offering a human helping hand to an upset child and his family. It is hoped that as we get more experience in this field, and as we subject the process of Preventive Intervention to further detailed scrutiny, we may refine our techniques. The measures I have suggested are derived from researches we have conducted at Harvard School of Public Health on families dealing with the crisis of the birth of a premature baby^(1, 2, 3) from Lindemann's studies on the crisis of bereavement,⁽⁵⁾ from the researches of Janis on the responses of adult patients to surgical operations,⁽⁴⁾ and from a study of the reactions of high school students coping with the anticipation of college carried out by Silber, Hamburg and their colleagues at the NIMH.⁽¹⁴⁾

It will be noted that I do not advocate trying to uncover the causes for poor coping, as one might do in analytic psychotherapy. The essence of Preventive Intervention is to ameliorate the final common path of the coping mechanisms by "here and now" influence, which alters the child's thinking and behavior, rather than to identify and influence the underlying causes of these mechanisms. It is important that the child should behave adaptively, and not that we or he should understand why he was previously behaving maladaptively. During crisis his coping is the end result of a multitude of factors pushing and pulling him in various directions. Our minimal intervention brings this balance of forces down in a healthy direction. We are enabled to do so in most cases, despite all the counterbalancing forces in his past experience and personality, because we are intervening at the crucial moment when the iron is hot, and when he is most susceptible to short-term influence. The same influence exerted when the child is not in crisis would have very little effect on his behavior or attitudes.

(1b) *Anticipatory Guidance or Emotional Inoculation*

Identification of regularly occurring hazardous situations in the life of school children allows us to focus our preventive attention on populations of children who in the near future will be exposed to the risk of crisis, e.g. children about to enter kindergarten or high school, or children facing the uncertainties of attempting to get into college. Not all children in the population will react with crisis, but on the basis of past studies psychologists may be able to predict what proportion of them will suffer. If the rate of crisis is likely to be significantly high, the psychologists may decide to intervene ahead of time in order to prepare the children to cope more adequately with the situation when it arises. In addition to this group ap-

proach with predictable hazards, psychologists may be alert to identify ahead of time stress situations in individual children, such as a child who has to enter hospital for elective surgery, or a child who faces impending separation from a parent—a father, who may have to go out of the country on military service, or a mother who may have to enter a tuberculosis sanitarium, etc.

Lindemann has shown that the psychological work of mourning by means of which a bereaved person adjusts to the removal from his life of a loved one, who is a source of satisfaction of his basic psychological supplies, may sometimes be partially accomplished before the death occurs. He calls this Anticipatory Mourning.⁽⁵⁾ There is some evidence that bereavement is a more difficult crisis to cope with, if the death is unexpected, and if Anticipatory Mourning cannot take place.

Janis,⁽⁴⁾ studying the adjustment of patients to surgical operations, found that those with the most successful psychological outcome had accomplished a certain amount of active worrying before the operation, so that when the real crisis began they had already achieved some mastery of their feelings of fear and frustration. He suggested the term Emotional Inoculation for active intervention with patients before their operations in order to stimulate them to carry out some anticipatory “worry work”.

In public health, Anticipatory Guidance has long been used, especially in well-baby clinics to prepare young mothers for predictable problems which they will probably have as their babies grow and develop, and in prenatal clinics to prepare pregnant women for the stress of labor and delivery.⁽¹⁾

Psychologists may base themselves upon these and similar studies and practices in working out procedures of focused intervention with individuals or groups of children before a crisis. The essential element in this method is to arouse ahead of time as vivid an anticipation as possible of the details of the predictable hazard or challenge and of the unpleasant emotions and fantasies which are likely to accompany it, while at the same time offering support and guidance in the rehearsal of ways in which these stresses and strains may be handled. If carried out successfully the term Inoculation is a most appropriate name for the process, since what is involved is the introduction of an attenuated stress which stimulates the development of a protective response that subsequently can be used to counteract the greater stress of the real life crisis situation.

The main technical problem is how to evoke ahead of time a vivid foretaste of the real experience. The further away the crisis is, and the more alien from the child's past experience, the harder this is to do. The use of emotionally toned words and detailed step-by-step descriptions are useful in individual and group discussions, and psychologists who are skilled in the technique may utilize the dramatic impact of role playing. Some workers may be concerned about overdoing this type of approach and scaring the children unduly by underlining the gorey details, but this is rarely a serious danger,

since a competent psychologist will be observing carefully the effect of his efforts on the children, and he will be active in offering support in handling their reactions. Some children, who are excessive worriers, may not be suitable for this procedure, and in their cases it may even be appropriate to reduce their anxieties ahead of time in order to help them achieve the self-confidence to master the crisis problems. In all cases it is important to help the children gain a realistic view of what is likely to happen and to free them from the exaggerations produced by fantasy elaborations. It is also important to underline the availability of help and support during the crisis itself, and to stimulate a hopeful outlook by discussing the limited nature of the difficulties, that is, by counteracting any tendency to stereotype a possible bad outcome as an inevitably global catastrophe.

The best time to do Anticipatory Guidance is when some current event is evoking feelings similar to what can be predicted for the main crisis, which means that the feelings are being stimulated by real experience rather than artificially by discussion. For instance, in a recent program of Anticipatory Guidance for Peace Corps Volunteers the feelings of deprivation aroused in them by parting from family and home town friends when coming to their Training Center provided a realistic foretaste of the more intense feelings of isolation and loneliness they could imagine they would feel when they would go overseas on their assignment. A discussion of the future situation therefore used their current feelings as a meaningful taking-off point.

Another strategic time to do Anticipatory Guidance is in the earliest stages of the crisis, or immediately prior to its onset. At this time the impact of the stress is beginning, but it is not yet overpowering. This is a transitional stage between Anticipatory Guidance and Preventive Intervention. From a certain point of view all Preventive Intervention can well be considered Anticipatory Guidance for future crises, since we must remember that we are intervening currently, not merely to help someone cope with the present difficulty, but also, and perhaps more important, to help him develop healthy coping skills which may enable him to withstand possible greater stress in his future life.

(2) Indirect Action

Here the psychologist attempts to provide emotional support and guidance for children in crisis, not by interacting himself directly with them, but by stimulating and guiding the other school workers to do so—mainly the educators, but also the school nurses, doctors and guidance personnel. He may accomplish this in three main ways, by (a) Teacher Training, (b) Training of Educational Supervisors, and (c) Consultation and Collaboration. In order to save time we will focus only upon the interaction with educators. Similar principles apply to interaction with the other workers.

(2a) Teacher Training

Psychologists should, wherever possible, communicate appropriate knowledge about crisis coping patterns of children and about methods of Preventive Intervention and Anticipatory Guidance to school teachers—both through participation in pre-professional training and also in on-the-job training of school staff. A basic tenet of the community approach is that, wherever possible, preventive work should be carried out by the large number of non-specialized line workers rather than be restricted to the highly trained specialists, who are always too few in number to cover the field.

In the schools, the classroom teachers are the most appropriately placed workers to identify the early stages of crisis in children, and they can often intervene effectively by offering adult support and guidance at the most strategic time. In fact, many teachers do this every day without any special realization of the mental health implications of their help. Psychologists can introduce some professional self-awareness into this process by sharing with teachers our increasing body of specific knowledge in this field, and by so doing enhance what is currently going on. In this endeavor there is the possibility of a significant danger which must be consciously avoided. It is important that the psychologists take care not to influence teachers to utilize techniques which are not in keeping with their traditional teaching role. It would be most unfortunate if teachers felt impelled to become psychotherapists, or to act as proxy-psychologists. The best safeguard against this is for psychologists to provide teachers with information about the relation of crisis coping and mental health and about adjustive and maladjustive coping patterns, and leave the working out of techniques of Preventive Intervention and Anticipatory Guidance to the teachers themselves. This approach may be usefully augmented by learning how certain gifted teachers handle these problems either in the classroom or with individual children, and then communicating this to other teachers as an example of effective preventive work which they may try.

(2b) Training of Educational Supervisors

The approach here is similar to that with teachers. It is singled out for special mention only to emphasize that in order to maximize the effect of his efforts, the psychologist should always try and operate, as it were, "upstream". The supervisory group in the school system must be convinced of the importance of primary prevention so that they will sanction and encourage the teachers to engage in such activity. The psychologist should focus as much effort as possible on adding to their knowledge, so that they in turn can disseminate the information to their teachers.

(2c) Consultation and Collaboration

Adding to the knowledge of teachers and supervisors will lead to best results in practice if the psychologist freely offers his services to support,

guide, and if necessary collaborate with them in implementing their developing insights and skills in relation to specific children. In their early attempts at preventive activity teachers may wish the psychologist to share responsibility for the case in point. A child or a group of children may be separately or jointly dealt with by both teacher and psychologist. If they work separately, the psychologist should spend a significant part of his time telling the teacher what he is doing, and invoking the teacher's supplementary assistance. With increasing experience the teacher may take over more and more responsibility for future cases, and may work out techniques of his own. Eventually the teacher may ask only for consultation help when he encounters an especially complicated case, although the psychologist should always offer to "backstop" him by sharing responsibility or accepting all the responsibility for a really difficult problem.

I have discussed techniques of consultation fully elsewhere.⁽¹⁵⁾ Although my present paper makes so brief a mention of this technique, I believe that it should be a major focus of effort among school psychologists.

(3) *Research*

I do not wish to end this chapter without making brief reference to the research role of school psychologists in the field of primary prevention. I hope that some school systems will provide the necessary personnel and funds to allow the carrying out of formal projects with adequate research design. I envisage that more commonly the nature of the job demands will be such that psychologists will be operating mainly as practitioners, and will have little time or energy for research. I do believe, however, that alert, interested, and sophisticated practitioners can make major contributions to knowledge by informal studies, or at least by studies which are not rigorously designed. There is at present a tremendous need for exploratory investigation in this field, and no group is more strategically placed than school psychologists to undertake this task. This is especially the case in California, where the work of Bower, Lambert, and their colleagues has blazed so important a trail.

I have time only to mention four topics which seem especially appropriate to explore at the present time:

(a) A survey of the types of situation which recur in the school setting as precipitators of crisis, and the characteristics of the children in whom these situations most commonly provoke crisis, in regard to such variables as age, sex, socio-economic class, and ethnic background.

(b) Follow-up studies of coping patterns of children in successive crises of different types, to see whether there are consistent styles of coping, and whether, and under what circumstances, changes in style occur.

(c) Development of improved methods of Preventive Intervention and Anticipatory Guidance by psychologists and teachers, and definition and description of the techniques.

(d) A preliminary approach to evaluating the results of intervention techniques in relation to changes in patterns of coping with future crises, and in relation to changes in general behavior in the school setting.

REFERENCES

1. CAPLAN, G. *An Approach to Community Mental Health*, Grune and Stratton. New York, 1961.
2. CAPLAN, G. Patterns of Parental Response to the Crisis of Premature Birth. *Psychiatry*, Vol. 23, No. 4, November 1960.
3. KAPLAN, D. M., and MASON, E. A. Maternal Reactions to Premature Birth Viewed as an Acute Emotional Disorder. *Am. J. of Orthopsychiatry*, Vol. XXX, No. 3, July 1960.
4. JANIS, I. L. *Psychological Stress*. Wiley, 1958.
5. LINDEMANN, E. Symptomatology and Management of Acute Grief. *The Am. J. of Psychiatry*, Vol., No. 2, September 1944.
6. OJEMANN, R. H. *Investigations on the Effects of Teaching an Understanding and Appreciation of Behavior Dynamics*, in Caplan, Gerald (ed.) *Prevention of Mental Disorders in Children*. Basic Books, New York, 1961. pp. 378-397.
7. BIBER, B. *Integration of Mental Health Principles in the School Setting*, in Caplan, Gerald (ed.), *Prevention of Mental Disorders in Children*. Basic Books, New York, 1961, pp. 323-352.
8. BOWER, E. M. *Primary Prevention in a School Setting*, in Caplan, Gerald (ed.), *Prevention of Mental Disorders in Children*. Basic Books, Inc., New York, 1961. pp. 353-377.
9. BOWER, E. M. *Early Identification of Emotionally Handicapped Children in School*. Charles C. Thomas, Springfield, Illinois, 1960.
10. FREUD, S. *Three Essays on Sexuality*, Standard Edition of the Complete Psychological Works of SIGMUND FREUD. Vol. VII, Hogarth Press, London, 1953.
11. PIAGET, J., and INHELDER, B. *The Growth of Logical Thinking*, Basic Books, New York, 1958.
12. ERIKSON, E. H. *Childhood and Society*. Norton, New York, 1950.
13. KLEIN, D. C., and LINDEMANN, E. *Preventive Intervention in Individual and Family Crisis Situations*, in Caplan, Gerald (ed.) *Prevention of Mental Disorders in Children*. Basic Books, New York, 1961, pp. 283-306.
14. SILBER, E., and DAVID, A. Hamburg, et al. *Adaptive Behavior in Competent Adolescents: Coping With the Anticipation of College* (National Institute of Mental Health). Mimeographed material.
15. CAPLAN, G. *Concepts of Mental Health and Consultation, Their Application in Public Health Social Work*. Children's Bureau Publication No. 373, 1959.

Name Index

- Abraham 56, 262
Abraham, K. 312, 320
Ackerman, N. W. 509, 523, 533, 547,
552, 612, 623
Adam, C. 3, 6
Ader, R. 203, 222
Adler, A. 339, 413, 433
Agras, S. 423, 424, 433
Ahrens, R. 185, 222
Ainsworth, M. 182, 221, 222, 354, 366,
545, 552, 558–560, 558
Ainsworth, M. D. 3, 6, 173, 175, 180, 352,
366
Åkesson, H. O. 371, 407
Aldridge, C. H. 301, 319
Alford, A. F. 40, 41
Allchin, W. H. 489
Allen 14
Allen, L. 157, 159, 178
Alpert, R. 555, 590
Alschuler, R. H. 176, 181
Altman, C. H. 171, 180
Altmann, M. 201, 209, 222
Altmann, S. A. 222
Amado, G. 615, 623
Amatruda, C. S. 12, 27, 149, 158, 159,
178
Ambrose, J. A. 152, 177, 183, 185, 218–223,
264
Anastasopoulos, G. 320
Ancelin, J. 3, 6
Anderson, J. E. 160, 167–169
Andrew, R. J. 193, 223
Andry, R. G. 172, 180, 352, 366, 494, 505,
545, 552, 555, 556, 558–560, 569, 585,
587, 588
Annell, A. 335, 338
Anthony, E. J. 71, 573, 588
Anthony, S. 174, 181, 454
Apley, J. 29, 30, 34, 35, 38, 41, 42, 329,
338
Appell, G. 3, 6, 173, 181
Argyle, M. 567, 588
Armitage, S. 662, 668
Arnold, G. E. 304, 309, 319
Arseni, C. 314, 321
Arthur, B. 449, 454
Aubry, J. 3, 6
Axelrad, S. 220, 224
Azrin, N. 663, 668
Baer, D. M. 589
Baerends, G. P. 196, 223
Baerends van Roon, J. M. 196, 223
Bahn, A. K. 626, 640
Baird, Sir Dugald. 386, 389, 390, 407
Baker 262
Baker, C. T. 158, 178
Bales, R. F. 396, 400, 410, 573, 588
Balint, M. 239, 241, 249, 619, 623
Balkany, A. F. 400, 408
Baller, W. R. 375, 377, 407
Bandura, A. 651, 667
Bandura, A. A. 571, 588
Banks, C. 455, 496, 497, 505
Barbara, D. A. 311, 320
Barker, R. G. 221, 223
Barnett, S. A. 219, 223
Barr, M. L. 475, 487
Barry, H. 437, 455
Bartlett, Sir F. 576, 588
Bastock, M. 219, 223
Bateman, D. E. 652, 668
Bavin, J. T. R. 457
Bayley, N. 158, 171, 178, 180, 358, 367
Beach, F. A. 184, 188, 192, 194, 196, 199,
211, 223, 345, 366
Bechwith 222
Beck, A. T. 438, 455
Becker, W. C. 161, 171, 179, 362, 366
Beckett, E. 445, 455
Behrens, M. 79, 80, 122
Beintema, D. 229
Belknap, I. 401, 405, 407
Bell, J. E. 431, 433
Bell, R. Q. 171, 180, 564, 590
Bellak, L. 166, 179
Bellak, S. S. 166, 179
Beller, E. K. 72, 81, 122
Bender, L. 324, 329, 338, 637, 641
Benedek, T. 546, 552

- Benedict, R. H. 540, 552
 Bentham 265
 Berent, J. 387, 407
 Berg, J. M. 381, 384, 391, 407
 Berkowitz, L. 650, 667
 Bernstein, B. 170, 180, 386, 400, 407, 558, 560, 588
 Bertram, E. G. 475, 487
 Bettelheim, B. 499, 505
 Biber, B. 676, 677, 687
 Binet A. 142, 157
 Bion, W. R. 573, 588
 Birch, H. 75, 84, 123
 Birch, H. G. 218, 223, 364, 367
 Birren, J. E. 157, 178
 Blacker, C. P. 546, 547, 552
 Blacketer-Simmonds, L. D. A. 390, 407
 Blainey, J. D. 148
 Blake, Y. 221, 223
 Blau, P. M. 401, 407
 Blaauvelt, H. 207, 210, 222, 223
 Block 84
 Blom-Cooper, L. 581, 588
 Blomfield, J. M. 342, 366, 408
 Bloom, B. S. 342, 362, 365, 366
 Blos, P. 421, 433
 Blurton-Jones, N. 221-223
 Boardman, W. K. 665, 667
 Bonham, D. G. 387, 403
 Bonnard, F. J. 424, 433
 Boston, M. 354, 366
 Botez, M. I. 316, 321
 Bourne, A. 332, 338
 Bourne, H. 36, 42
 Boverman, H. 225
 Bovet, L. 3, 6
 Bower, E. M. 634, 679, 687
 Bowlby, J. 3, 6, 54, 68, 173, 180, 181, 218, 219, 220, 221, 223, 224, 313, 320, 342, 343, 354, 359, 366, 416, 417, 433, 436, 437, 454, 455, 536, 537, 543, 545, 546, 552, 555, 557, 558, 560, 561, 588, 610, 623
 Brady, J. V. 652, 663, 667
 Brandon, M. W. G. 377, 407
 Brennemann, J. 13, 14, 27
 Breuer, J. 51, 68
 Bridger, W. H. 218, 224
 Bridges, K. B. 162, 179
 Broadhurst, P. L. 185, 224, 646, 667
 Broadwin, I. T. 414, 433
 Brody, S. 175, 181, 220, 224
 Broekhuysen, G. J. 231
 Bronfenbrenner, U. 170, 180, 563, 583, 588
 Bronson, G. 220, 224
 Bronson, W. C. 172, 180
 Brown, F. 174, 181, 435, 440, 455
 Brown, J. L. 193, 224
 Brown, W. F. 543, 552
 Brown, W. M. C. 475, 487
 Bruner, J. S. 220, 224
 Brunet, O. 158, 178
 Brunswik, E. 77, 122
 Buckle, D. F. 3-8, 613, 623
 Buehler, E. A. 161, 179
 Bugelski, B. R. 189, 224
 Bunyan, J. 443, 455
 Burchinal, L. G. 359, 367
 Burlingham, D. 108, 173, 181, 455
 Burns, C. 416, 418, 431, 433
 Buros, O. K. 165, 179
 Burt, C. 360, 396, 407
 Burton, M. 206, 224
 Burttt, H. E. 366
 Butler, N. R. 387, 407
 Caceres, C. A. 185, 224
 Calandro, J. 149
 Caldwell, B. M. 175, 181, 220, 221, 224
 Calhoun, J. B. 196, 224
 Callender, W. M. 173, 181
 Cameron, H. C. 12, 27
 Cameron, K. 269, 413, 415, 433
 Campbell, B. A. 363, 366, 400
 Campbell, E. M. 363, 366
 Campbell, J. C. 416, 423, 433
 Campbell, M. J. 400, 410
 Caplan, G. 174, 181, 584, 588, 671, 672, 674, 681-683, 686, 687
 Caplan, J. 37
 Carmichael, L. 182, 217, 224
 Carpenter, C. R. 194, 224
 Carr-Saunders 542, 552
 Carter, C. O. 391, 398, 407, 408, 467, 487
 Casler, L. 173, 180
 Caudill, W. A. 401, 407
 Cavenagh, W. E. 575, 588
 Chambers, R. 553
 Chance, M. R. A. 193, 224
 Chandler, C. A. 644
 Chapin, H. D. 12, 27
 Charcot J. M. 259
 Chardin, P. T. de 121, 122
 Charles, D. C. 375, 408
 Chave, S. 38, 42
 Cherry, E. C. 315, 321
 Chess, S. 75, 84, 123, 364, 367

- Chevalier, J. A. 201, 228
 Child, I. L. 361, 368
 Chipman, C. 324, 338
 Chow, K. L. 184, 199, 225, 229
 Church, R. M. 665, 668
 Clark, R. M. 304, 319
 Clarke, A. D. B. 339, 344, 359, 363, 366, 378, 379, 384, 398, 399, 408, 564, 588
 Clarke, A. H. 379, 408, 344, 359, 363, 366, 378, 379, 384, 398, 399, 408, 564, 588
 Clarke, C. M. 37, 42
 Clausen, J. A. 180
 Coates, S. 149
 Coleman, R. W. 172, 175, 182
 Collias, N. E. 220, 224
 Conger, J. G. 589
 Conger, J. J. 590
 Conklin, P. M. 203, 222
 Conners, C. K. 628, 629, 634, 638, 640, 641
 Coolidge, J. C. 415, 416, 418, 430, 432-434, 626, 640
 Cooper, B. 583, 588
 Cooper, C. E. 34, 42
 Cooper, M. 370, 385, 409
 Coriat, I. H. 313, 320
 Coser, R. L. 397, 408
 Cowie, V. 149
 Craig, W. 190, 224
 Craig, W. S. 31, 38, 42
 Creak, M. 323-325, 329, 334, 338
 Crome, L. 380, 408, 487
 Crothers, B. 14, 27
 Cruickshank, R. 388, 408
 Cruickshank, R. M. 217, 224
 Cytryn, L. 627, 636, 640, 641
 Czerny 9
- Dalton, R. H. 172, 175, 180
 Daly, C. 388, 390, 408, 409
 Darling, F. F. 196, 224
 Darwin, C. 218, 224, 307, 320
 David, A. H. 682, 687
 David, M. 3, 6, 173, 181
 Davidson, I. D. 493, 505
 Davidson, M. A. 156, 166, 177
 Davidson, S. 418, 423, 424, 428, 430, 432, 433
 Davis, D. R. 37, 41, 42
 Davis, K. 354, 366
 Davidson, S. 314, 320
 Dean, R. F. A. 4, 8
- Dearborn, W. F. 157, 178
 Deisher, R. W. 400, 408
 Dekker, E. 646, 668
 de Labry, J. 379, 411
 Delhanty, J. D. A. 398, 408
 Delius, F. 301, 319
 Demars, R. I. 488
 Dement, W. C. 196, 229
 de Meyer, M. 662, 668
 de Monchaux, C. 434
 Denenberg, V. H. 184, 194, 201, 202, 210, 224, 225, 229
 Dennis, M. 356, 357, 366
 Dennis, W. 342, 355-357, 363, 366
 Dent, T. 398, 408
 de Sanctis, S. 324, 338
 Devereux, G. 563, 583, 588
 De Vore, I. 193, 194, 225
 Diacoyannis, A. 320
 Diamond, I. T. 184, 225
 Dillistone, F. 149
 Dingman, H. F. 381, 385, 411
 Dittmann 80
 Dixon 262
 Dixon, J. T. 433
 Dodson, J. D. 646, 669
 Doll, E. A. 162, 179
 Dollard, J. 555, 557, 589, 650, 651, 668, 669
 Doob, L. W. 650, 668
 Douglas, J. W. B. 170, 180, 342, 366, 386, 387, 408
 Douglas, V. 635, 636, 641
 Drillien, C. M. 386, 408
 Driscoll, K. W. 468, 487
 Duchêne, H. L. 611, 623
 Duff, J. F. 460, 487
 Duhl, L. 619, 623
 Dührssen, A. 3, 6
 Dunham, H. W. 552
 Dunlop, K. 661, 668
 Dunsdon, M. I. 371, 398, 408
 Dye, H. B. 343, 367
- Eddington, A. S. 89, 122
 Edwards, J. H. 398, 408, 472, 487
 Efron, A. S. 637, 641
 Egg, M. 7
 Eibl-Eibesfeldt 221
 Eisenberg, L. 41, 42, 316, 321, 416, 418, 423, 425, 427, 430-432, 433, 625-630, 634, 636, 638, 640, 641
 Eisenck, H. J. 269

- Ekstein, R. 323, 338
 Eleanor 564
 Elkin, E. 568, 588
 Elliott, E. 197, 209, 225
 Ellis, M. J. L. 315, 320
 Emerson, P. E. 221, 229
 Epps, P. 440, 455
 Epstein, N. B. 258, 533
 Erikson, E. 107, 110, 115, 117, 122
 Erikson, E. H. 588, 680, 687
 Escalona, S. 164, 179, 269
 Estes, H. R. 416, 434
 Evans, M. J. 338
 Ewing, A. W. G. 148, 149
 Ewing, I. R. 148, 149
 Eysenck, H. I. 555, 558, 588
 Eysenck, H. J. 341, 366, 588, 643, 651, 652, 654, 655, 660, 668
- Fabricius, E. 197, 225
 Fairbairn, W. R. D. 241, 249
 Fairburn, A. C. 31, 42
 Falkner, F. 151, 177
 Falstein, E. L. 414, 416, 418, 419, 423, 426, 430, 434
 Farber, L. H. 97, 122
 Feekes, F. 231
 Fenichel, O. 315, 320
 Féré 314, 320
 Ferenczi, S. 56
 Ferguson, T. 339, 372, 377, 408
 Ferster, C. B. 662, 668
 Festinger 568
 Field, L. 440
 Filippyčeva, N. A. 291, 292
 Fish, B. 327, 333, 338, 639, 641
 Fisher, C. 97, 122
 Fisher, S. 632, 635, 641
 Flanagan, B. 663, 668
 Flavell, J. H. 159, 178
 Fletcher, R. 217, 225
 Fölling, A. 471, 491
 Foss, B. 560, 561, 588
 Foss, B. M. 177, 182, 220, 225
 Foulds, G. A. 340, 366
 Foulkes, S. H. 573, 588
 Fox, B. 340, 366
 Francis 222
 Frank, L. K. 151, 167, 177
 Fraser, F. C. 203, 225
 Fredericson, E. 194, 230
 Fredrickson, D. S. 488
 Freedman, A. M. 327, 338, 637, 639, 641
- Freedman, D. G. 197, 218, 222, 225
 Freedman, N. 225
 Freeman, F. N. 167, 182
 Fremel, F. 308, 320
 Freud, A. 15, 43, 44, 50, 57, 64, 68, 162, 173, 174, 179, 181, 182, 436, 445, 455, 555, 588, 611, 623
 Freud, S. 51, 52, 54, 55, 56-58, 61-63, 66-68, 72, 106-108, 115, 117, 122, 239, 245, 249, 262, 297, 319, 339, 413, 434, 455, 490, 494, 505, 555, 589, 649, 680, 687
 Friedmann, M. 446, 455
 Fries, M. E. 175, 181
 Froeschels, E. 308, 311, 316, 320, 321
 Frohman, C. E. 445, 455
 Fry, D. B. 312, 320
 Fuller, J. L. 193, 194, 202, 225, 230, 344, 366
- Gaddini, B. 564, 589
 Gaffron, M. 102, 123
 Gardner, D. B. 367
 Gardner, D. E. M. 176, 182
 Gardner, G. 587, 589
 Gardner, L. I. 36, 42
 Gardner, P. 586
 Garfield, S. L. 635, 636, 641
 Gautier, M. 476, 487
 Geber, M. 4, 8, 168, 180
 Gehmann 493, 505
 Gelder, M. C. 655, 669
 Genet, I. 117
 Gesell, A. 12, 27, 125, 149, 158, 159, 160, 167, 178, 179, 220, 225, 260
 Gewirtz, J. L. 220, 225, 560, 589
 Gibbens, T. C. N. 3, 6, 387, 408, 495, 505, 583, 589
 Gibbs, N. 314, 320
 Gilbert, A. 627, 636, 640, 641
 Gillespie, H. 314, 320
 Gillespie, W. H. 51
 Gladwin, T. 385, 387, 410
 Glaser, K. 427, 434
 Glass, D. V. 385, 387, 408
 Gleasson, H. A. 308, 320
 Glidewell, J. C. 172, 180
 Glueck, E. 167, 179, 440, 455
 Glueck, S. 167, 179, 455, 574, 589
 Goffman, E. 397, 401, 408
 Goldfarb, W. 324, 329, 338, 353, 354, 360, 363, 367
 Goldiamond, I. 663, 668

- Golding, W. 494, 505
 Goldman-Eisler, F. 341, 367
 Goldstein, A. 269
 Goldstein, J. 555, 588
 Goodman, N. 370, 391, 392, 408
 Goodrich, D. W. 73, 78, 122
 Gordon, J. E. 555, 564, 589
 Gordon, R. G. 149
 Gorer, G. 552
 Gould, J. 497, 505
 Grad, J. C. 390, 398, 400, 411
 Grady, P. A. E. 302-304, 319
 Graff, W. L. 298, 319
 Graham, F. K. 174, 182
 Gray, P. G. 455
 Gray, P. H. 220, 225
 Grebenik, E. 387, 408
 Green, A. 649, 668
 Greenbaum, M. 174, 182
 Greenberg, R. C. 149
 Greeves 262
 Gregory, I. 437, 455, 553
 Grey, I. 545
 Griffiths, R. 125, 126, 132, 149, 158, 176, 178, 181, 383, 410
 Groen, J. 236, 249, 646, 668
 Grole, L. 619, 623
 Gulliford, R. 148
 Gunther, M. 222, 225, 464, 487
 Gunzburg, H. C. 400, 408
 Guthrie, L. G. 9, 11, 27
 Gutzman, H. 320
- Haan, N. 176, 182
 Haas, W. 303, 304, 319
 Haerberle, A. W. 80, 85, 123
 Haggerty, R. J. 35, 42
 Hahn, E. 311, 320
 Hahn, P. 415, 433
 Hahn, R. B. 434
 Hall, J. R. 385, 408
 Hall, K. R. L. 193, 225
 Halperin, S. L. 384, 408
 Hamerton, J. L. 488
 Hamilton, M. 262
 Hansen, E. 417, 434
 Harlow, H. F. 194, 196, 201, 204, 206, 209, 210, 219, 225, 226, 230, 231, 348, 349, 363, 367, 417, 434, 557
 Harlow, R. G. 352, 366
 Harnden, D. G. 475, 487
 Harris, H. 488
 Harris, Roswell 360
- Hartley, L. M. 302, 304, 319
 Hattwick, L. A. 176, 181
 Havighurst, R. J. 161, 167, 171, 179
 Hawkes, G. R. 367
 Haylett, C. H. 416, 434
 Heady, J. A. 388, 390, 408, 409, 410
 Hebb, D. O. 185, 195, 196, 201, 226, 339, 340, 344, 555, 589, 651, 668
 Hediger, H. 196, 226
 Heider, G. M. 164, 179
 Heiman, P. 589
 Heinroth, O. 190, 226
 Held, R. 218, 226
 Heller, T. 324, 338
 Helper, M. M. 635, 636, 641
 Henry, W. 166, 179
 Heraclitus 296, 319
 Herder, G. 269
 Heron, W. 345, 368
 Hersher, L. 175, 181, 209, 210, 226
 Hersov, L. A. 414, 418, 419, 422-424, 428, 429, 430, 434
 Hess, E. H. 193, 197, 198, 226
 Hewitt 500, 505
 Hilgard, E. R. 226, 645, 668
 Himmelweit, H. T. 566, 589
 Hinde, R. A. 184, 191-193, 197, 198, 219, 226, 227
 Hindley, C. B. 149, 161, 170, 171, 179, 180
 Hockett, C. F. 299, 307, 319
 Hoepfner, T. 311, 320
 Hollingshead, A. B. 400, 409, 627, 641
 Holman, P. 535, 544, 545, 553
 Holmes, A. 542, 553
 Holst, E. von 192, 193, 227
 Holt, K. S. 399, 400, 409
 Holzinger, K. J. 167, 182
 Homskaja, E. D. 274, 285, 286, 288, 291, 292, 293
 Honig, A. S. 224
 Honzik, M. P. 157, 165, 168, 178, 180, 182
 Hoof, J. A. R. A. M. van 193, 227
 Hooker 265
 Houghton, H. 38, 42
 Houghton, J. C. W. 231
 Howell 311
 Howells, J. G. 342, 367, 564, 589
 Hsia, D. Y.-Y. 468, 487
 Hudson, F. P. 400, 409
 Hughes, E. L. 34, 42
 Hulme, I. 399, 409
 Huntley, R. M. C. 168, 182, 398, 408

- Husserl, E. 89, 95, 123
 Hutt, C. 221, 222, 227
 Hutt, S. J. 221, 222, 227
 Huxley, T. H. 364
- Ilersic, A. R. 581, 588
 Ilg, F. L. 159, 178
 Illingworth, R. S. 149, 158, 178, 409
 Illsley, R. 386, 388, 409, 411
 Inhelder, B. 7, 123, 176, 182, 560, 589, 590, 680, 687
 Inhorn, S. L. 480, 488
 Isaacs, S. 57, 68, 589, 663
 Iscoe, L. 178
 Ivanova, M. P. 291, 292
- Jackson, J. H. 296, 297, 319
 Jackson, L. 338
 Jacobi, A. 9, 10, 27
 Jacobs, P. A. 475, 487
 Jacobson, E. 660, 668
 Jaederholm, G. A. 383, 410
 Jakobson, R. 296, 319
 Jakovleva, S. V. 278, 281, 293
 James, H. 198, 227
 James, T. E. 575, 589
 James, W. 73, 123
 Janet, P. 259
 Janis, I. L. 674, 682, 683, 687
 Janis, M. G. 176, 181
 Jay, P. 207, 227
 Jaynes, J. 194, 199, 227, 345, 366
 Jeanson, F. 95, 123
 Jenkins 504, 509
 Jensen, G. D. 185, 227
 Jervis, G. A. 467, 487
 Johnson, A. M. 414, 415, 416, 418, 419, 423, 426, 428, 430, 434
 Jones, A. 38, 42
 Jones, E. 455
 Jones, H. E. 151, 156, 157, 158, 177, 178, 182
 Jones, H. G. 643, 646, 657, 660, 661, 668
 Jones, M. 401, 409
 Jones, M. C. 659, 668
 Jones, M. R. 194, 227
 Jung, C. G. 413, 434, 490, 498, 505
- Kagan, J. 151, 156, 164, 172, 178, 182, 362, 364, 367, 558, 590
 Kagan, J. S. 589
- Kahn, J. H. 414, 416, 418, 426, 427, 430, 434
 Kahn-Freund, O. 575, 589
 Kanner, L. 13, 14, 27, 252, 261, 269, 316, 321, 324, 325, 338
 Kaplan, B. 166, 179
 Kaplan, D. M. 672, 681, 682, 687
 Kardiner, A. 540, 553
 Karlin, I. W. 320
 Kasanin 262
 Katten, E. S. 172, 180
 Katz, A. H. 400, 409
 Katz, J. 555, 588
 Kaufmann, I. C. 218, 227
 Keene, G. C. 221, 229
 Kelly 590
 Kemme, M. 449, 454
 Kennedy, A. 315, 321
 Kerr, A. W. 372, 377, 408
 Kessen, W. 151, 177
 Kibbuzt 565
 Kierkegaard, S. 94, 98, 123
 King, G. F. 662, 668
 King, J. A. 197, 202, 209, 225, 227, 349, 367
 Kirk, S. A. 402, 409
 Kirman, B. H. 381, 384, 391, 407
 Kirschbaum, R. M. 351, 363, 367
 Klackenberg, G. 343, 357, 363, 367
 Klackenberg-Larsson, I. 182
 Klein, D. C. 339, 490, 681, 687
 Klein, E. 415, 418-421, 426, 427, 434
 Klein, H. S. 427, 430, 434
 Klein, M. 55, 56, 59, 62, 68, 69, 241, 249, 262, 413, 426, 433, 434, 563, 589, 610, 623
 Kleist 256
 Klineberg, O. 385, 409
 Klopfer, B. 166, 179
 Kluckhohn, C. 94, 123
 Knobloch, H. 387, 409
 Knox, W. E. 468, 487
 Koch, H. 180
 Kohler, W. 102, 123
 Kol'cova, M. M. 273, 293
 Korchin, S. J. 201, 228
 Kraepelin, E. 255, 256, 262, 324, 338
 Krapf, E. 7
 Krasner, L. 667, 668
 Kris, E. 15, 172, 175, 176, 182
 Kruuk, H. 231
 Kubie, L. S. 218, 227
 Kuo, Z. Y. 195, 227
 Kushlick, A. 369, 370, 372, 374, 375, 391, 392, 394, 398, 401-404, 409, 411

- Lacey, J. L. 649, 652, 668
 Lachman, R. 634, 641
 Laing, R. D. 496, 498, 505, 568
 Landolt, H. 314, 320
 Larsen 634
 Laties, V. G. 637, 641
 Laurence, K. M. 391, 409
 Lawrence, D. H. 96, 123
 Lawrence, M. M. 316, 321
 Lawson, R. 631, 641
 Layng, J. 342, 367, 589
 Lazarus, A. A. 659, 660, 668
 Lebovici, S. 4, 6, 7, 38, 352, 366, 609, 613, 623
 Ledwith, N. H. 166, 179
 Leeson, J. 373, 396, 400, 409
 Lehrman, D. S. 184, 194, 195, 207, 209–211, 227, 229
 Lejeune, J. 476, 487
 Leland, H. 149
 Lemkau, P. 370, 381, 385, 409
 Lenhardt K. 256
 Lenihan, E. A. 351, 363, 367
 Levan, A. 472, 488
 Levin, H. 166, 171, 179, 180, 361, 367, 555, 564, 590, 666, 669
 Levine, S. 194, 201, 202, 204, 205, 220, 227, 228, 347, 348, 363, 367
 Lewin, K. 568, 589, 621, 623
 Lewis, A. 21, 28, 39, 42, 430, 434
 Lewis, E. 493, 505
 Lewis, E. O. 375, 381, 391, 392, 393, 409
 Lewis, G. W. 347, 367
 Lewis, H. 357, 367, 564, 589
 Lewis, M. 152, 177
 Leyton, G. B. 148
 Lézine, I. 158, 178
 Lilienfeld, A. M. 409, 410
 Lin, Tsung-Yi 4, 7
 Lind, D. L. 222, 667, 671
 Lindemann, E. 37, 437, 455, 674, 681, 682, 683, 687
 Lindsley, O. R. 662, 664, 668
 Linneus 265
 Lippman, H. S. 428, 429, 430, 434
 Lipsitt, L. P. 222, 228
 Lipton, E. L. 222, 228, 229
 Lipton, S. 174, 182
 Livson, N. 172, 180
 Ljamina 275
 Ljublinskaja, A. A. 273, 293
 Lockner, A. W. 630, 634, 641
 Longford, the Earl of 583, 589
 Loomis, E. A. Jr. 74, 85, 99, 123
 Lorenz, K. 183, 185, 190–198, 207, 217, 218, 220, 228, 344, 557, 560, 589
 Lovibond, S. H. 658, 668
 Lubovskij, V. I. 287, 288, 293
 Luchsinger, R. 314, 320
 Lundberg, G. A. 95, 123
 Luria, A. E. 7, 160, 167, 178, 273, 274, 283–285, 287, 289, 290–293, 386, 409
 Lyle, J. G. 410
 Lynn, R. 555, 564, 589
 McCarthy, D. 149
 Maccoby, E. 555, 564, 590
 Maccoby, E. E. 171, 180, 349, 361, 362, 367, 666, 669
 McCord 545
 MacCurdy, J. T. 299, 319
 McDonald, A. D. 386, 389, 410
 Macfarlane, J. W. 157, 159, 161, 163, 178, 179
 McGeoch 344
 McGill, T. E. 194, 228
 McGlashan, A. 443, 446, 447, 450, 455
 McGregor, O. R. 572, 581, 588, 589
 MacIver 95, 123
 MacKeith, R. 34, 35, 41
 McKenna, J. 223
 McLaren, T. R. 391, 410
 Maclay, D. T. 314, 320
 Maclean, N. 475, 487
 MacMahon, B. 387, 410
 MacNalty, S. A. 304, 319
 Magnay, H. S. 414, 434
 Mahler, M. S. 85, 324, 338
 Maier, N. R. F. 194, 228
 Mannheim, H. 575, 589
 Mantle, D. J. 475, 487
 Mapother, E. 436, 455
 Marcinovskaja, E. N. 288, 293
 Markowitz, H. 202, 230
 Marks, I. 655, 669
 Marland, P. 315, 321
 Marquis, D. G. 189, 226
 Marris, P. 451, 455, 539, 545, 553
 Martin, A. 587, 589
 Martin, F. M. 38, 42
 Masland, R. L. 387, 410
 Mason, E. A. 672, 681, 682, 687
 Mason, E. M. 415, 430, 434
 Mason, M. K. 354, 367
 Mason, S. E. 295, 300, 303, 305, 306, 314, 319, 320
 Mason, W. A. 200, 228, 349, 367

- Masson J. 194, 228
 Maurer, K. M. 158, 178
 Maxwell, R. D. H. 315, 321
 Mead, M. 173, 181, 299, 319, 352, 366,
 455, 558, 559, 560, 588
 Meade, J. E. 182
 Meissner, W. W. 537
 Melzack, R. 199, 231, 345, 347, 363, 367,
 368
 Merminod, A. 177
 Merrill, M. A. 149
 Mertz, E. T. 149
 Meščerjakov, A. I. 287, 289, 291, 293
 Metzner, R. 646, 669
 Meyer, C. 261
 Meyer, H. 149
 Meyer, L. R. 74, 85, 99, 123
 Meyer, R. J. 35, 42
 Michaux, L. 39, 42
 Middlemore, M. 54, 69
 Miles, H. L. 38, 42
 Mill, J. S. 238, 249
 Miller, D. 555, 557, 564, 583, 589
 Miller, E. 234, 251, 413, 434, 573, 589
 Miller, L. C. 75, 123
 Miller, N. E. 648-651, 668, 669
 Mills 262
 Minski, L. 326, 338
 Mizelle, J. D. 634, 641
 Molling, P. A. 627, 630, 634, 636, 641
 Moltz, H. 195, 198, 228
 Moncrieff, A. 149
 Montessori 339
 Moore, A. U. 209, 210, 226
 Moore, T. 151, 160, 162, 166, 172, 173,
 176, 179, 181, 182, 454, 455
 Morante, C. 564, 589
 Morley, M. 303, 319
 Morris, D. 219, 222, 223, 228
 Morris, J. N. 388, 390, 399, 408-410
 Morrison, S. L. 553
 Morsen, O. H. 589
 Morton, J. R. C. 202, 225
 Moss, H. A. 76, 123, 156, 164, 172, 178,
 364, 367
 Mowrer, O. H. 555, 656, 657, 668, 669
 Mowrer, W. 656, 657, 669
 Moynihan, M. 219, 223
 Muffly, R. 635, 636, 641
 Müller, M. 301, 319
 Mulligan, G. 167, 179
 Mullins, G. L. 185, 227
 Munro, T. A. 467, 487
 Murphy, B. 269
 Murphy, L. B. 166, 175, 181, 182, 220,
 229, 417, 434
 Murray, H. A. 589
 Mussen, P. H. 152, 177, 558, 564, 589, 590
 Muzio, J. N. 196, 229

 Nadoleczny, M. 310, 316, 317, 320
 Naess, S. 564, 590
 Naish, J. M. 34, 42
 Najarian, P. 342, 354, 355, 357, 363, 366
 Neale, D. H. 663, 664, 669
 Neale, M. D. 400, 410
 Negus, V. E. 297, 319
 Neilon, P. 164, 179
 Nelson, V. L. 158, 178
 Neville, J. G. 391, 410
 Newekluff, T. 307, 320
 Newman, H. H. 167, 182
 Newson, H. E. 541, 553
 Nicholas, G. 583, 588
 Nissen, H. W. 184, 199, 201, 229
 Norman, R. M. 383, 410
 Nowlis, V. 650, 669
 Nursten, J. P. 414, 416, 418, 426, 427,
 430, 432, 434

 O'Connor, H. 374, 383, 394, 395, 398, 410
 Ojemann, R. H. 675-677, 687
 Olson, W. C. 160, 178
 O'Neal, P. 627, 641
 Onqué, G. C. 152, 177
 Oppenheim, A. N. 566, 589
 Orlanksy 361, 364, 367
 Ormerod, Sir Roger 587, 590
 Ostow, M. 218, 229
 Ottinger, D. R. 184, 229
 Ounsted, C. 221, 227

 Paramonova, N. P. 280, 293
 Park, L. C. 632, 641
 Parke, R. D. 220, 231
 Parkes, A. F. 182
 Parkes, G. M. 455
 Parr, E. A. 455, 545
 Parsons, Talcott 396, 400, 401, 410, 494,
 505
 Pasamanick, B. 37, 267, 269, 387, 409, 410
 Pascal, B. 234, 249
 Patau, K. 480, 488
 Paterson, J. W. 315, 321
 Patton, G. 36, 42

- Patton, R. 42
 Pavlov, I. P. 229, 274, 290, 647, 669
 Paxton, M. 575, 590
 Pearson, K. 383, 410, 459, 487
 Peck, A. L. 415, 433
 Peck, R. F. 161, 167, 171, 179
 Peiper, A. 217, 222, 229
 Penrose, L. 149
 Penrose, L. S. 375, 381, 384, 390, 391, 394, 405, 410, 461, 461, 471, 477, 485, 487, 488
 Peterson, D. 651, 669
 Peto, A. 501, 505
 Petrini, G. C. 5, 7
 Petrovici, I. 316, 321
 Pevzner, M. S. 287, 293
 Philips, M. 38, 42
 Piaget, J. 98, 99, 101, 123, 159, 160, 182, 247, 249, 340, 680, 687
 Pick, T. 269, 431
 Pinneau, S. R. 157, 178
 Pitrelli, F. R. 313, 320
 Polan, C. G. 316, 321
 Poljakova, A. G. 274, 275
 Pollitt, J. 315, 320
 Pollock, G. 455
 Popper, K. R. 96, 123, 234, 249
 Portridge, J. M. 434
 Potter, S. 301, 319
 Prall, R. C. 76, 123
 Pratt, K. C. 217, 222, 229
 Prechtl, H. 222, 229
 Prewitt, C. D. 400, 408
 Priestley, J. B. 455
 Prince, G. S. 413, 430, 434
 Provence, S. 172, 175, 182
 Provence, S. A. 177
 Prugh, D. G. 156, 177, 351, 352, 363, 366, 367
 Pustrom, E. 316, 321
 Putnam 14
- Quastel, J. H. 149
- Rachford, B. K. 9, 10, 11, 27
 Rachman, S. 656, 662, 669
 Ramsey, A. O. 198, 229
 Rank, O. 53, 69
 Rapaport, D. 173, 181
 Rapoport, R. 533
- Rau, L. 555, 590
 Rayner 648
 Record, R. G. 410
 Redfield, W. J. 400, 408
 Redl, F. 616, 623
 Redlich, F. C. 400, 409, 627, 641
 Rehin, G. F. 38, 42
 Reid, D. D. 269
 Reiman, S. 359, 366, 379, 408
 Reiss, B. F. 210, 229
 Rheingold, H. L. 173, 181, 206, 209, 221, 229, 349, 358, 367
 Ribble 339
 Rich, J. 493, 505
 Richards, B. W. 36, 42
 Richer C. 259
 Richmond, J. B. 36, 209, 210, 222, 226, 229
 Riesen, A. H. 196, 199, 226, 229
 Riopelle, A. J. 349, 367
 Ripman, W. 306, 320
 Ritvo, S. 176, 182
 Riviere, J. 589
 Robbe-Grillet, A. 91, 108, 123
 Roberts, J. A. F. 149, 383, 410, 432, 488
 Robertson, J. 173, 174, 181, 182, 455
 Robins, L. N. 627, 641
 Rodriguez, A. 418, 432, 626, 641
 Rodriguez, M. 418, 432, 434, 626, 641
 Roffwarg, H. P. 196, 229
 Rollin, H. R. 390, 410
 Rollman-Branch, H. S. 218, 229
 Rosenblatt, J. S. 184, 194, 207, 209, 210, 229, 230
 Rosenbluth, D. 354, 366
 Rosenthal, R. 631, 641
 Rosenwald, G. C. 166, 179
 Rosenzweig, S. 166, 179
 Ross, A. S. C. 299, 319
 Rothney, J. W. 157, 178
 Routsonis, K. 320
 Rowell, T. E. 193, 227
 Rowntree, G. 572, 589
 Rowntree, S. 542, 553
 Rozengardt-Pupko, T. L. 273, 293
 Rubenstein, R. 575, 590
 Russell, B. 118, 123
 Rutter, M. 364, 367, 400, 411
- Sabagh, G. 381, 385, 411
 Saenger, G. S. 381, 396, 411
 Saint Paul, U. von 193, 227
 Salk, L. 222, 229

- Sands, H. H. 351, 362, 367
 Sarason, S. B. 161, 179, 385, 387, 410, 411
 Sartre, J.-P. 74, 101, 117, 123, 495, 498, 506
 Sauls, R. J. 630, 641
 Sawa, J. M. 387, 410
 Sayers, B. McA. 315, 321
 Schachter, S. 568, 590
 Schaefer, E. 171, 180
 Schaefer, E. S. 564, 590
 352, 363, 367, 560, 590
 Schaffner, B. 194, 230
 Schaffer, H. R. 173, 181, 221, 229, 350,
 Schlaegel, T. F. 360, 367
 Schneirla, T. C. 194, 209, 211, 220, 228, 230
 Schrier, A. M. 194, 230
 Schur, M. 218, 230
 Schwartz, M. 401, 411
 Scott, E. M. 386, 388, 411
 Scott, J. P. 194, 196, 198, 202, 220, 230
 Scott, P. 493, 506
 Scott, P. D. 568, 590
 Seal, V. G. 553
 Sears, P. S. 650, 669
 Sears, R. 555, 564, 590
 Sears, R. R. 171, 180, 361, 367, 650, 666, 668, 669
 Seay, B. 417, 434
 Seitz, F. F. D. 210, 230
 Selye, H. 652, 669
 Semmes, J. 199, 229
 Sandler, J. 434
 Senn, M. J. E. 9, 14, 27, 28, 176
 Setchenow 10
 Sethi, B. 438, 455
 Shakow, D. 72, 123
 Shapiro, M. I. 87, 123
 Sharpe, L. 634, 640
 Sheldon, M. H. 366
 Sheldon, W. H. 156, 177
 Sheridan, M. 320, 336, 338
 Sherman, A. 79, 80, 122
 Shields, J. 555, 564, 590, 645, 669
 Shipe, D. 398, 411
 Shirley, M. M. 125, 149, 159, 164, 178
 Shoor, M. 455
 Shotwell, A. M. 398, 411
 Siegel, A. E. 173, 181
 Sigel, I. E. 159, 178
 Silber, E. 682, 687
 Simon 142
 Simmons, J. E. 184, 229
 Jimms, R. E. 302, 304, 319
 Simon, M. D. 160, 178
 Skeels, H. M. 168, 180, 343, 367
 Skinner, B. F. 662, 669
 Skodak, M. 168, 180
 Slater, E. 645, 669
 Slavson, S. R. 573, 590
 Sluckin, W. 198, 230, 345, 366, 367
 Smith, A. 391, 410
 Smith, D. W. 480, 488
 Smith, R. L. 649, 668
 Smythe, P. M. 36, 42
 Soddy, K. 4, 7, 326, 338
 Solnit, A. J. 177
 Solomon, R. 646, 669
 Sontag, L. W. 15, 156, 158, 159, 172, 175, 177, 178
 Spearman, C. 141, 149
 Speed, M. 455
 Speers, R. W. 316, 321
 Spence, K. W. 189, 230
 Spencer, B. L. 316, 321
 Spinoza, B. 295, 319
 Spirin, B. G. 291, 294
 Spitz, R. 332, 338, 455
 Spitz, R. A. 218, 230, 351, 352, 356, 357, 367, 368
 Srole, L. 75, 123
 Stadler, H. E. 149
 Stanbury, J. B. 488
 Stanley, W. C. 349, 367
 Stanton, A. 401, 411
 Staub, E. M. 351, 363, 367
 Stebbing, S. 269
 Stein, L. 295, 296, 298, 301-303, 307, 308, 312, 314, 317-320
 Stein, Z. 378, 379, 381, 382, 396, 403, 411
 Steinle, J. G. 403, 407
 Steinschneider, A. 222, 228
 Steintal, H. 300, 319
 Stengel, E. 269
 Stensson, J. 182
 Stephens, M. W. 184, 229
 Steriade, M. 316, 321
 Stern, C. 488
 Stern, H. 314, 320
 Stevens, C. F. 388, 390, 408
 Stevens, S. S. 156, 177
 Stevenson, H. W. 178
 Stoch, M. B. 36, 42
 Stollnitz, F. 194, 230
 Stolz, L. M. 173, 181
 Stone, A. A. 152, 177, 363
 Stott, D. H. 161, 164, 172, 174, 178, 181, 364, 368, 539, 543, 553, 564, 583, 590

- Stott, L. H. 156, 177
 Straker 262
 Strasser, S. 73, 96, 98, 101, 123
 Stuart 15
 Stubblefield, R. L. 174, 181
 Susser, M. 378, 379, 381, 382, 396, 403, 411
 Susser, M. W. 385-387, 400, 404, 411
 Suttendorf, V. 426, 434
 Svendsen, M. 414, 416, 418, 419, 423, 426, 430, 434
 Szekely, L. 218, 230
 Szulc, E. 231
 Szursk, S. 414, 416, 418, 419, 423, 426, 430, 434
- Takaishi, M. 155, 177
 Talbot, M. 424, 428, 434
 Talbot, N. B. 67, 69
 Tanner, J. M. 7, 154, 155, 156, 174, 176, 177, 182, 539, 553, 560, 590
 Tapp, J. J. 202, 230
 Tarjan, G. 381, 385, 411
 Tarjan, J. 37
 Taylor, B. J. L. 38, 42
 Terman, L. M. 149
 Tessman, E. 416, 418, 430, 433, 626, 640
 Therman, E. 480, 488
 Thibaut, J. W. 568, 590
 Thomas, A. 75, 84, 123, 164, 175, 179, 364, 367
 Thompson, B. 387, 411
 Thompson, G. G. 362, 368
 Thompson, W. R. 185, 193, 199, 202, 203, 220, 225, 226, 230, 231, 345, 347, 363, 368
 Thomson, A. M. 388, 411
 Thomson, G. H. 460, 487
 Thorndike 189
 Thorne, F. C. 266, 269
 Thorp 557
 Thorpe, W. H. 349, 368
 Thorpe, W. M. 190, 193, 196-198, 227, 231
 Tidd, C. W. 218, 219, 222, 231
 Tietze, C. 370, 385, 409
 Tikhomirov, O. K. 278, 281, 282, 294
 Tilton, J. 662, 668
 Tinbergen, N. 185, 190-194, 206-209, 217-219, 227, 231, 344, 557, 560, 590
 Tizard, J. 7, 370, 372, 374, 375, 383, 390-392, 394, 395, 398, 399, 400, 401, 404, 408, 410, 411, 613, 624
 Tjio, J. H. 472, 488
- Tobach, E. 185, 209, 230
 Todd, R. 391, 410
 Tolman, E. C. 93, 123
 Tomilin, M. I. 194, 232
 Tomkins, S. S. 218, 231
 Torrie, A. 455
 Torrie, M. 455
 Toynbee, A. 435, 456
 Traill, P. 446, 455
 Trasler, G. 353, 368, 555, 590
 Troll, W. 468, 487
 Tuddenham, R. D. 165, 179
 Turpin, R. 476, 487
 Tuthill, R. 438, 455
 Tyler, E. A. 533
- Ucko, L. E. 162, 166, 174, 179, 182
 Uhlenhuth, E. H. 632, 641
- Vandenberg, S. 196, 231
 Vandenberg, S. G. 168, 180
 Van Ginneken, J. 301, 319
 Van Lehn, R. 652, 668
 Van Riper, C. 304, 310, 319
 Vernon, P. E. 165, 182, 365, 368, 557, 590
 Verplanck, W. S. 193, 231
 Vince, M. A. 198, 227
 Vince, P. 589
 Vogel, E. F. 533
 Vygotski, L. S. 160, 182, 273, 280, 293
- Waisman, H. A. 196, 231
 Waldflogel, S. 416, 418, 430, 433, 434, 640
 Wall, W. D. 4, 7
 Waller, M. B. 202, 225, 344, 366
 Wallin, J. E. W. 149
 Walter, R. H. 220, 231, 571, 588, 651, 667
 Walton, D. 661, 669
 Wardle, C. J. 166, 174, 181
 Wardwell, E. 179
 Warren, W. 414, 418, 429, 432, 434, 626, 641
 Washburn 15
 Watson 648, 659
 Watson, J. B. 644
 Watson, W. 339, 386, 387, 400, 411
 Weekley, E. 299, 319
 Weinberger, M. 324, 338
 Weiss, B. 637, 641
 Weiss, E. 35, 42
 Weiss, G. 626, 636, 641

- Wenar, C. 84, 123
Werry, J. S. 635, 636, 641
West 541
Westley, W. A. 533
Westmacott, I. 38, 42
Whimbey, A. E. 210, 225
Whitehouse, D. 628, 629, 638, 641
Whitehouse, R. H. 155, 177
Whiting, J. W. M. 361, 368, 650, 669
Whitman, C. O. 190, 231
Widdowson, E. M. 173, 181
Wilcott, R. C. 635, 636, 641
Wilkins, L. T. 587, 590
Willer, M. L. 416, 418, 430, 433, 626, 640
Williams, C. D. 661, 669
Williams, J. R. 180
Willmott, P. 400, 411
Wilson, V. W. 456
Wimperis, V. 545, 553
Winnicott, D. W. 14, 21, 27, 28, 40, 42, 54, 69, 175, 182, 333, 338, 430, 434, 495, 497, 506, 593
Wisdom, J. O. 233
Wittenborn, J. R. 358, 361, 368
Wolf, A. 199, 221, 231
Wolf, K. M. 230
Wolff, P. 231
Wolpe, J. 643, 647, 658, 660, 661, 669
Wood-Gush, D. G. M. 193, 232
Woods, P. J. 349, 368
Woodward, M. 399, 411
Woolf, L. I. 146, 149, 467, 487, 561, 568
Wootton, B. 352, 366, 368, 496, 506, 541, 553
Worcester-Drought, C. 315, 316, 321
Wordsorth, W. 456
Wright, S. W. 381, 385, 411
Wundt, W. 118, 123, 304, 319
Wyngaarden, J. B. 488
Wynn, M. 451, 456, 545, 553
Wynne, L. 646, 669
Yakolev, P. 324, 338
Yarrow, L. J. 173, 180, 339, 368, 558, 590
Yarrow, M. R. 590
Yerkes, A. W. 194, 232
Yerkes, R. M. 194, 232, 646, 669
Youdovitch, F. J. 160, 167, 178
Young, J. 564, 589
Young, M. 409, 411
Young, R. D. 196, 232
Yudkins, S. 542, 553
Yudovich, F. Ia. 293
Zapella, M. 149
Zappert, J. 324, 338
Zazzo, R. 168, 179
Zener, K. 102, 104, 106, 118, 123
Zigler, E. 379, 411
Zimmerman, R. R. 194, 226

Subject Index

- Abilities, growth and development of 157-160
- Abnormality 486
- Abortion 486
- Acataphasia 300
- Acrocentric chromosome 472
- Addental sigmatism 308
- Adjustment 167
- Adolescence 68, 266
height during 154
- Adoption 168, 358, 359, 361
- Adrenal cortex 652
- Adversity, effects of short periods of 350
- Aetiology and aetiological factors 263, 264, 266, 267, 268, 324
of neurosis 645-653
- Age norms 160
cross-sectional studies of 154
- Aggression and aggressive behaviour 56, 298, 307, 314, 422, 453, 496-498, 543, 544, 564, 651, 666
expressions of 46
first 55
- Agrammaphasia 300
- Agrammatism 300
- Agrammatologia 300
- Alalia 301, 315, 316
- Alleles 458
- Allergic reactions 646
- Ambivalent reactions 59-60
- Ancestral cries and clicks 297
- Anergias* 252
- Anger 453
- Animal behaviour research 183-232, 344, 646-647, 652
attachment behaviour 221
biopsychology 193-196
breakdown of dichotomy between instinct and learning 212
causation 191
changing perspectives in 188-196
clarification of concepts 184
components of complex behaviour 215
critical periods 220, 222
deprivation in infancy 199
description of behaviour in environmental context 213
descriptive studies 221
development of behaviour pattern 192, 193
development of new techniques 185
displacement and conflict behaviour 219
distinction between causation and function 213
early learning 222
empirical studies 211, 220-222
environmental factors 214
establishment of scope of generalizations 185
ethology 189-193
fixed action patterns, stereotypes and reflexes 222
function of behaviour pattern 192
grounds for scepticism 186
highlighting special features in child development 185
identification of significant new problems 184
implications for research on early human development 211-217
imprinting 196-198
infancy 196-211
infant development 203-211
infant stimulation 220
influence on recent work in child development 217-222
instinctive communication 218
interpretation 202
isolation and restriction 199
learning psychology 188, 193
mother-infant relation 219, 221
nature and scope of 188
omission of cognitive factors 186
ontogenetic studies 194
and age factor 212
parent-young relationship 206-211
past record of comparative research 187
pitfalls of comparison 186
pre-natal factors 203
relevance of comparative approach 183
social interaction 214

- Animal behaviour research (*cont.*)
 stimulation in 198-203
 during infancy 204-206
 stimuli 215
 theoretical studies 217
- Anoxic infants 174
- Anthropological dilemma 73
- Anticipatory guidance 682, 686
- Anticipatory mourning 683
- Anti-convulsants 638
- Anti-depressants 638
- Anxiety 49, 62-63, 363, 415, 423, 453,
 537, 544, 547, 552, 564, 637, 646, 651,
 653
- Aphasia 301, 305, 309, 311, 312, 315, 316,
 326, 328
- Approved schools 502
- Arapech 563
- Articulatory disorders 301
- Artificial situations, child's responses to 162
- Assessment 141
- Assortative mating 459
- Asthma 646
- Attitude formation 565
- Audimutatis 315
- Autism 316, 324, 325, 445, 662
- Automation 565
- Autosomes 457, 469, 473
 aberrations 476
- Aversion therapy 654, 664-666
- Avoidance response 647
- Awareness of external world 58-59
- Axial triradius 476, 480
- Babies, blind 136
 deafness in, screening tests for 133
 first reactions 17
 infant testing, time involved in 140
 instinctive and nutritive needs of 54
 hand and eye co-ordination in 134-137
 locomotor development of 132
 mental tests 125
 testing 137
 immediate recording of 139, 140
see also Infant
- Babbling 298, 299, 312, 313
- Bacterial diseases and prophylaxis 12
- Behaviour, correlations of 164
 effects of early experience 339-368
 parents' definition of 261
- Behaviour disorders 637
- Behaviour patterns 264
- Behaviour tendencies 160-164
- Behaviour theory of neurosis 649
- Behaviour therapy 643-669
 aims of 653
 and aetiological theory 653
 assessment of 666-667
 aversive techniques 664-666
 characteristics of 653
 concept of 644
 enuresis 656-658
 management and techniques 656
 operant conditioning techniques 661-
 664
 present status 643
 reciprocal inhibition therapy 658-661
 relapses 654-655
 satiation 661
 "Skinnerian" conditioning 662
- Behavioural analysis of neurosis 648
- Behavioural indicator 105
- Behaviourism 644
- Behaviourist theory 645
- Bereavement 435-456, 683
 children attending child guidance clinics
 446
 children attending nursery schools 445
 guilt 453-454
 reaction of surviving parent 449
 reaction to 444, 447
 significance of 437
see also Death; Parent, loss of
- Binary opposition 298
- Bio-adjustment 234-239
- Biographical family history 22-23
- Biopsychology 188, 193-196
- Birth defects 20
- Birthprocess, psychological significance of 53
- Birth stress, reactions to 17
- Birth weight and mental subnormality
 386, 389, 390
- Blindness 136, 360
- Borstal Institution 500, 502
- Brain, abnormalities 461
 damage 364, 468
 in newborn 19
 social class and 387
 injury 316
 pathological states of 283
 speech in pathology of 282-292
 tissue, cholesterol studies of 348
- Broken homes 174, 544
- Buccal smears 475
- Cabbage theory 234, 235, 237-244, 248
- Case history 117

- Castration complex 63-64, 65
 Categories, for analysis 85
 precoded, utilizing of 85
 Cattell infant scale 355
 Central nervous system 651
 Centromere 472
 Cerebral apparatus 292
 Cerebral asthenia 292
 Cerebral damage 329
 Cerebral mechanisms 289
 Cerebral palsy 126, 136, 637
 Cerebro-asthenic child 285, 288
 Cerebro-asthenic syndrome 285, 286, 287, 288
 Character 167
 development of 65-66
 Characteristics, general, examination of 49-50
 Child and environment, interaction between 153
 Child and infant behaviour, long-term observations on 15
 Child care practices 14, 15
 Child custody cases 556-588
 Child development, *see* Development
 Child-family diagnosis 521-532
 Child guidance clinics 4, 13, 23-24, 446, 551, 555, 612
 Child guidance services 5
 Child guidance teams 38
 Child guidance tradition 512
 Child patient and his family 23-24
 fantasies of 56
 Child psychiatrist 16, 29
 Child psychiatry, epidemiology relationship to 266
 paediatrics' contribution to 17-27
 services 5
 Child-rearing practices 15, 361
 Child responses to artificial situation 162
 Childhood, disorders 34
 malnutrition 174
 recurrent pains 34
 Children
 care of sick 21
 deprived 173, 570
 encopretic 663
 handicapped 131, 136-137, 139, 551
 observation of 71-122
 prematurely born, development of 19, 20, 25
 psychotic, mute 90
 very young, mental assessment of 125, 131-137
 young, reporting on testing of 140, 141
 testing, principles to be observed in 137-141
 Chloral hydrate 638
 Chlordiazepoxide 637
 Chlorpromazine 636-637
 Cholesterol studies of brain tissue 348
 Chromatin body 475
 Chromosome aberrations 472, 484
 Chromosome patterns, analysis 472
 Chromosome research, advances in 36
 Chromosomes 457, 469, 480
 Chronic emotional stress relation to illness 36
 Chronic illnesses 20
 Classification of mental disorders 251-269
 Claustrophobic element in school phobia 426
 Clinical experience 340
 Clinical observer, objective 90-91
 Clinical studies 152
 Cluttering 309
 Commonwealth Fund fellowships in psychiatry 14
 Communicable diseases 12
 Communication, between parent and infant 242
 disorders 295-321
 dissolution of 296, 300-308
 evolution 295-300
 see also Speech; Voice
 Community services 611
 Community therapy 609-623
 objectives and methods 618-623
 Comparative approach to early child development 183-232
 Complaint factor 261
 Comprehensive approach 33
 Conflict 62, 649, 650
 and coping 523
 assessments 48-49
 Congeners 637
 Consanguinity 465, 483
 Controls 343
 Co-ordination of hand and eye 136
 Coping, conflict and 523
 with crises 678
 Correlational data 341
 Correlations of behaviours 164
 Cortex 285, 286, 289, 290, 291
 Cortical development 235
 Cortical function 289
 Cortical mechanisms 284
 Court cases 556-588

- Crèches 621
 Cretinism 10
 Cries and clicks, linguistic development of 297, 298
 Crises 570
 coping with 678
 developmental 680
 identification of 679
 preventive activities of school psychologists 680-687
 theory of 672-674
 Critical periods 220, 222, 345, 538
 Cross-sectional studies 152, 157, 342
 of age norms 154
 Cruelty 357
 Cultural determinants of parental attitudes 540
 Cultural factors, affecting development 168
 in mental subnormality 384
- Deaf mutism 315, 316
 Deafness 127, 144, 315
 in babies, screening test for 133
 Death 21, 543
 instinct 55-56
 see also Bereavement; Parent, loss of
 Decision makers 573
 Delinquency 167, 443, 453, 489-506, 569
 patterns of 492
 prevention 503-505
 treatment possibilities 500-502
 Dementia 301, 316, 324
 infantile 314
 Dementia praecox 323
 Dependence, conflict of, in child's life 19
 Depression 59, 423, 426, 439, 453, 544, 651, 660
 Deprivation 261, 343, 350, 357, 360
 Deprived children 173, 570
 Destructiveness 497
 Detention Centres 500, 502
 Development, changes in 98
 comparative approach to early 183-232
 critical periods of 345, 538
 cultural and sociological factors affecting 168-171
 experiences affecting 174
 influences on 167-174
 lines of 46-47
 longitudinal study 151-177
 of abilities 157
 of intelligence, dependence of 159
 of language 159
 of locomotion 159
 processes 152, 153-167
 psychoanalytic theory 51-68
 research 25
 stages of 526
 Development examination 17
 Developmental forces versus regressive tendencies 49
 Developmental profile 44, 131
 Developmental status, observations of 159
 Developmental trends 165
 Dextroamphetamine 638
 Diagnosis 141
 categorization of 50
 comprehensive approach 35
 methods of 21
 of mental disturbances of children 43-50
 phenomenological level 263, 264
 Diagnostic observations 71
 Diagnostic profile, example of 45
 Diazepam 637
 Differential diagnosis of mental status 130, 131, 141
 Difficult behaviour 544
 Diphenylhydantoin 638
 Diphenylhydramine 637
 Diphenylmethane derivatives 637
 Diploid 458
 Discipline 536
 Diseases, communicable 12
Disergasias 252
 Disorders, coding of 309-318
 requiring psychiatric help 26-27
 Displacement activities 219
 Dissolution of communication 296, 300-308
 Divorce 556-588
 DNA 458
 Dogs 346
 Dominant inheritance 462
 Down's syndrome 36, 476, 478
 Dreams 97, 176
 Drive development 45
 Drugs and drug therapy 335, 443, 625
 interaction with Wechsler I.Q. level 634
 medical evaluation of new 640
 principles of treatment 639-640
 synopsis of current 636
 therapeutic trials 626-636
 methods of assessment 632-635
 patient-related variables 626
 reporting of results 635
 statistical analysis 635
 treatment schedules 629

- Dysarthria 305, 314
 Dyslalia 301, 302, 304, 305, 308
 Dysphasia 309, 311
 Dysphemia 309, 310
 Dysthymic disorders 651
- Early experience, effects on later behaviour 339-368
 Echolalic speech 325
 Education, difficulties 544
 evolution of basic principles 15
 reciprocal, between paediatrician and psychiatrist 40
 Educational supervisors, training in primary prevention 685
 Egalitarian family structure 563
 Ego, conception of 235
 definition 234
 development 46, 65
 modelling of 66
 of infant, methodological approach 233-249
 Electroencephalographic abnormalities 638
 Emergency care and treatment 23-24
 Emergency room, value of 23-24
 Emotional dependence on parents 158
 Emotional deprivation, effects of 143
 Emotional development 243, 526, 569
 Emotional disturbance 11, 416, 657
 infection association with 35
 secondary to physical illness 20
 Emotional expression 297
 Emotional inoculation 682
 Emotional stress, chronic, relation to illness 36
 Emotional temperament 11
 Encephalitis Lethargica 258
 Encopretic children 663
 Endocrine system 652
 Endogenous behaviour 217
 Endogenous factors 212
 Enuresis 638, 654, 655
 specific conditioning treatment 656-658
 Environment, child and, interaction between 153
 Environmental factors 214, 544
 influence of 175-177, 202
 scope and limits of 167, 168
 Environmental mechanisms 19
 Environmental preferences 20
 Environmental problems, stressful 18
 Enzymes 458, 467, 468
 Epidemiological records 267
 Epidemiologists 18
 Epidemiology, in assessing and developing services for mentally subnormal 399
 relationship to child psychiatry 266-269
 Epiloia 464
 Ergasias 252
 Erotogetic zone 55, 63
 Escape response 647
 Ethological aids to classification 265
 Ethological approach 264
 Ethological instinct theory 219
 Ethological research 193, 222
 Ethology 188, 189-193
 Etiological agents 11
 Excretion, processes 60
 Exhibitionism 498
 Experiences affecting development 174
 Experimental neurosis 647
 Experimental studies 152
 Extinction 654
 Extrapyramidal dysarthria 309
 Extrapyramidal syndromes 313
 Eye and hand co-ordination 134-137
- Family, abortive or temporary 531
 accidental or unintended 531
 associated responsibility for 18
 backgrounds of school phobic children 423
 competitive 532
 conflict in 513, 523
 crises, onset of illness related to 36
 defenses 523
 detached, or emotionally isolated 532
 deviations from normal life 172-174
 disorder in 513
 disturbed 527
 emotional response to 512
 healthy 531
 history, biographical 22-23
 recording by paediatrician 18
 identity 524
 immature protective 532
 in relation to personality development 535-553
 master-slave 532
 of complementary acting out 532
 of expediency 531
 of flight 531
 of neurotic complementarity 532
 performance assessment 525
 position in 539

- Family, abortive or temporary (*cont.*)
 psychotherapy 612
 regressive 532
 relationships 555-590
 role in emergence of child disorders
 509-533
 conceptual framework 518-521
 historical background 511
 problems of theoretical orientation
 515
 size effect on mental development and
 behaviour 170
 socio-economic factors 541-542
 stability 524
 structures 563
 type groupings 531-532
 vicissitudes of, reactions to 543-546
- Family-child diagnosis 521-532
- Fantasies 58, 176, 304, 497
 beginnings of 57
 of child patients 56
- Father 539
 contribution to pathogenic interactions
 425
 death of 437
 in child's development 173
 loss of 545
 sociological observations 451
 role of 537, 555-572
- Father-child relationship 555-572
- Fatherless families 174, 451
- Fears 362, 363, 419, 544, 595, 643, 646,
 652, 659
- Feeding experiments 204
- Fels Longitudinal Study 164
- Finger prints 476
- First aid care 23
- Five-column analysis 107
- Fixation points 47-48
- Foster children 353, 384
- Foundlings 355
- Four-column analysis 106
- Freezing attitude 297, 313
- Frustration 650
- Frustration tolerance 49
- Functional psychoses 323
- Gametes 458, 475
- General characteristics, examination of
 49-50
- General quotient 140, 141
- Generalization principle 658
- Genes 457, 462, 467, 469, 483
- Genetic assessments 47-48
- Genetic causes of mental retardation 36
- Genetic counselling 481-487
- Genetic endowment, unfolding of 256
- Genetic factors in mental subnormality
 383
- Genetic family history 18
- Genetics, of intelligence 459
 of mental deficiency, *see* Mental deficien-
 cy
- Genital phenomena 61
- Genital sexuality, early development of 61
- Genital stage, girl 64
- Gesell developmental examination 17
- Girls, development of 64
 oedipus complex in 64-65
- Goodenough draw-a-man test 355, 356,
 357
- Grief 21
- Griffith's mental development scale
 126-131
- Group therapy 613, 617
- Growth 29
 influences on 153
 retardation of 36
- Guilt 453-454, 486, 537, 552, 562, 649
- Hallucinations 58, 262
- Hand and eye co-ordination 134-137
- Handicapped children 131, 136-137, 139,
 547
- Haploid set 458, 473, 481
- Hate 536
- Head-banger 236
- Hearing 133, 315
see also Deafness
- Hearing and Speech Scale 127, 133
- Hearing mutism 315
- Height during adolescence 154
- Hemizygous 469
- Hereditary factors 525, 564
- Heredity, in neurosis 645
 influence of 11
 influence on physical disease 18
- Heterozygotes 462, 465
 detection of 483
- Hierarchical theory, Tinbergen's 192
- Home observations 79-80
- Homes, intact 546
- Homologous movements in phyletic species
 192
- Homosexual behaviour 494, 499, 572
- Homozygote 462, 465
- Hospitalization 20, 350-352

- Hospitals with university affiliation 25
 Hottentotism 301
 Housing 546, 555
 poor 542
 Hydrocephaly 472
 Hydroxyzine 637
 Hyperkinetic syndromes 637
 Hypnosis, dream translation in subjects
 under 97
 techniques 661
 Hypothesis formation and prediction 86
 Hysteria 259, 260, 305, 316, 651
 Hysterical aphonia 317
 Hysterical dysphonia 318
 Hysterical mutism 316
 Hysterical syndrome 314
- Identification 66
 Idiolect, fluctuating 305
 Illegitimacy 354, 355, 399
 Illness in parents 542
 Imipramine 638
 Immunological reactions 18
 Imprinting 345, 560
 Indecent exposure 498
 Independence, conflict of, in child's life 19
 Infant, and child behaviour, long-term ob-
 servations on 15
 anoxic 174
 cabbage theory 234
 development tests 158
 ego of, methodological approach
 233-249
 nocturnal waking 162
 relationship to objects 59
 sucking activities 55
 testing, time involved in 140
 see also Babies
 Infant mind, nature of 234
 Infant mortality, high 12
 Infantile autism 324
 Infantile dementia 314
 Infantile neuroses 47
 Infantile sexuality 61
 Inflection association with emotional dis-
 turbances 35
 Inferiority 651
 Inheritance of disorders 459
 Inorganic to organic transition 71
 Instinct 535
 Instinctive and nutritive needs of baby 54
 Institutionalization 352
 Intellectual achievement and maternal pro-
 tection 172
- Intelligence 361
 development of 36-37, 159
 genetics of 459
 Intelligence quotient (I.Q.) 141, 157, 158,
 354, 359, 459-460, 485, 486
 constancy of 142-148
 of adopted children 168
 range of mentally subnormal 369-406
 Intelligence tests 364
 responses to 159
 values of 12
 Interdenial stigmatism 302, 307
 Interdenialism, multiple 306, 307, 308
 Interpretative observers 85, 96-97
 Interviewing, techniques 22
 therapeutic 78
 Intrapsychic conflict 62
 Intra-uterine environmental factors 18
 Intra-uterine situation 53, 57
 Introjection 60, 63, 66, 258
 Introversion 562
 Introversion-extraversion 75, 585, 651
 Iproniazid 638
 I.Q., *see* Intelligence quotient
 Isochromosome formation 474
 Isolation 417
- Jealousy 60
- Karyotype 472, 475, 478, 480, 484
 Kleinian theory of bad objects 241
 Klinefelter's syndrome 473, 475, 478
 Knox cube test 355, 357
- Laboratory, observational 78
 Lalling 301
 Language, development of 159
 longitudinal study of 160
 Latency period 64, 66, 67
 Lateral stigmatism 307
 Leadership 573
 Learning and learning theory 219, 220,
 339, 340, 344, 348, 360, 363, 364, 644,
 645, 648, 651, 653, 656, 657
 Libido 239
 distribution 45
 examination and state of 45
 object 45
 Life instinct 55-56
 Life-Space Interview 616
 Linguistic development 280, 300
 of cries and clicks 297, 298
 Linguistic disorders 296
 Linguistic forms 305

- Linguistic patterns 305
 Linguistic theory 296
 Lispering 306
 Locomotion, development of 159
 Locomotor capacity, maturation of 197
 Locomotor development of babies 132
 Locomotor items, observing of 137
 Locus 458
 Longitudinal studies 151-177, 342
 European group of 164
 of emotional growth 15
 of language 160
 of maturing children 159
 of speech 160
 Love 516, 536
- MacNaghton rules 491
 Maladaptive reactions 654
 Maladjustment 336, 357
 inhibition of speech due to 134
 Malnutrition 174, 555, 674
 Manic depression 256, 262, 416
 Marital partnership, diagnosis of 525
 Marriage, unhappy 546
 Masculinity 563
 Mastery of tasks 46-47
 Masturbation 11
 Maternal and child relationships 17
Maternal care and mental health 3
 Maternal deprivation 173, 556-572, 574, 575
 Maternal protection and intellectual achievement 172
 Matrocentric family structure 563
 Maturation 257, 260, 526
 Maturation delay 32
 Maturation lag 329
 Maturation phenomena 17
 Maturing children, longitudinal study of 159
 Maturity scales 162
 Meiosis 458
 Memory 360
 Mendelian patterns 462
 Mendelian ratios 486
 Mental assessment, very young children 131-137
 Mental deficiency 301, 316
 genetic causes 462
 genetic counselling 481-487
 genetics of 457-488
 specific harmful genes 462
 Mental development 244
 Mental Development Scale 146-147
 Griffiths 126-131
 Mental disorders, classification of 251-269
 in parents 546
 prevention of 37
 Mental disturbances, diagnosis of 43-50
 Mental health, change of attitude towards 38-39
 needs of patients 26
 Mental illness, in childhood 323
 onset of symptoms 327-329
 severe 26
 Mental Measurements Year Books 165
 Mental retardation 287, 328
 genetic causes of 36
 systematic studies of 12
 Mental status, differential diagnosis of 130, 131, 141
 Mental subnormality 369-411
 birth weight 386, 389, 390
 causes of 380
 classification 369
 compulsion and services for 404
 cultural factors in 384
 epidemiology in assessing and developing services for 399
 genetic factors in 383
 I.Q. inconstancy 378
 I.Q. ranges 369-406
 prevalence and prognosis of mild 373, 393
 prevalence and prognosis of severe 370, 391
 social class factors 381, 389, 390, 396, 397
 Mental tests for babies and very young children 125
 Mephenesin 637
 Meprobamate 637
 Merrill-Palmer Longitudinal Study 164
 Mesencephalic areas 258
 Metacentric chromosome 472
 Metaphysical formulations of Freud 55
 Metapsychological picture 44
 Method of difference, Mill's 238
 Methodology 340
 Methylphenidate 630, 638
 Milieu therapy 5, 612-618, 622
 Mill's method of difference 238
 Mind, infant, nature of 234
 Mitotic divisions 458
 Mongolism 36, 371, 392, 461, 476, 477, 478, 479
 partial 479

- Monkeys 348, 652
 Monosomic condition 477
 Moral behaviour 263
 Moral judgements 261
 Morphological disorders 300, 301
 Morphological systems 299, 300
 Mosaicism 474-475, 478, 479, 484
 Mother, death of 437
 immature 569
 Mother-child relationship 219, 364, 537,
 555-572
 Mother-infant relationship 54-55, 219,
 221, 242, 349
 Mothering, psychopathic 341
 Motor apparatus, subcortical 285
 Motor behaviour 292
 Motor centers, subcortical 284
 Motor co-ordination, achievement of 204
 Motor development 327
 Motor disturbance 326
 Motor excitation 279
 Motor habit, automatized 291
 Motor hearing mutism 316
 Motor patterns 216
 Motor reaction 281, 288, 289
 sensori 287
 Motor response 279, 280, 282, 286
 Motor stereotype, inert, influence of 276
 Mourning 21, 450-451, 543, 683
 Muscular co-ordination 326
 Mutation 458, 484
 Mute psychotic child 326
 Mutism 325
 akineti 316
 idiopathi 315
 Myxoedema 10
- Narcissism, primary 239-244, 247, 248
 versus object-relationship 244-246
 secondary 247
 Narcissistic exploitation 515
 Nasal sigmatism 308
 Nature, bifurcation of 101
 Neglect 357
 Neonatal changes 53-54
 Neonatal phase 197
 Nerve cells, lack of nutriment 10
 Nervous disorder, prevention of 26
 Nervous system, instability of 11
 malfunctioning of 10
 Neural process 283, 285, 287, 288, 289
 Neuro-dynamics 281, 286, 287, 289
 Neurological disorder, constitutional 309
 Neuro-muscular disorder 258
 Neuro-physiological factors 214
 Neurosis, aetiology of 645-653
 basic causes of 11
 behaviour theory of 649
 behavioural analysis of 648
 theory of 653
 Neurotic child of twentieth century 11
 Neurotic disorder, complex 648
 Neurotic illness 11
 News distribution media 620
 Nocturnal waking in infants' 162
 Non-communicating child 326
 Non-differentiation 57
 Normal negativism 538
 Noxious stimulation 664-666
 Nursery schools 161, 447
 Nursing couple 54-55
 Nurture 535
 Nutritional deficiencies 18
 Nutritional problems 4
 Nutritive and instinctive needs of baby 54
- Oakland Growth Study 154, 156
 Object libido 45
 Object-relationship 240, 241-244, 248
 versus primary narcissism 244-246
 Objective clinical observer 90-91
 Objective observation 161
 Objective observer, as disinterested specta-
 tor 89
 in contemporary literature 91-94
 Objectivity, evaluation of 94
 Objectivity-subjectivity dilemma 72
 Observation of children 71-122
 analysis of process 108
 child's pathology effect 80
 cognitive versus phenomenal reporting 104
 defenses and differences of 101-102
 dilemmas of 72-74
 direct 76
 direct and indirect 74
 example of methods 118-121
 five-column analysis 107
 four-column analysis 106
 home 79-80
 illustrations of process 110-115
 indirect 76
 naturalistic or controlled 77
 need to develop deeper vision 121
 of developmental status 159
 reports 81-86, 105-106, 119-121
 ten-column analysis 115

- Observational attitudes, conflict of 89
 effect of perceptual equipment on 99
 Observational experience, synthesis of 101-106
 Observational laboratory 78
 Observational methods 85
 Observational research, problems of 74-77
 Observational situation 77-78
 Observational task, by symbolic shorthand 82
 lessening of 82
 specialized recording equipment 82
 Observer, attitudes of 89
 background and development of 117
 genesis of 97
 interpretative 85, 96-97
 objective, as disinterested spectator 89
 in contemporary literature 91-94
 objective clinical 90-91
 observing the 73
 parent as 75
 photographic 85
 recording objectively 117
 role of 80-81
 subjective 94-96
 training of 86-89
 Observing the observer 73
 Obsessional compulsive conditions 258
 Oedipal involvement 515
 Oedipal period 60, 538
 Oedipal relationships 577
 Oedipus complex 61-62, 63, 67, 120, 563, 566
 in girls 64-65
Olebergias 252
 Oligophrenia 287, 288, 289
 Omnipotence, conditional and unconditional 58
 Ontogenetic development 185
 Ontogenetic studies 192, 193, 194, 212
 Operant conditioning techniques 661-664
 Oral erotism 306, 307, 311, 312, 313, 314
 Oral pessimism 341
 Oral trauma 308
 Organic to psychological transition 71
 Organic disorders, causative 35
 Organism and its environment 102
 Orphanhood 438, 443
 double 449
 reaction to 444
 Ossification 156
 Over-crowding 542
 Overlearning 655
 Over-protection 550
 Overt behaviour 72
 Paediatricians, concepts of early 9
 consultant in all aspects 29
 decision of 32-33
 primary prevention by 37
 psychological emergencies 24
 referring of children to 30
 role of counsellor by intuition 22
 secondary prevention by 37
 Paediatrics 9-28, 29-41
 contribution to child psychiatry 17-27
 dealing with entire organism 10
 definition of modern 16
 goal of 27
 historical evolution 9
 liaison with psychiatry 39-41
 out-patient clinic, analysis of 100 cases 31-32
 present-day relationships of 16
 prevalence studies 30
 shared interests 33
 specialization 29-30
 training in psychiatry and psychoanalysis 13
 Palmar dermatoglyphics 480
 Paragrammatism 300
 Paralalia 301, 302-304, 305, 316
 Paranoid-schizoid 262
 Pararhesis 305
 Parasympathetic reactions 654
 Parent(s), as observer 75
 attitude of, cultural determinants 540
 emotional dependence on 158
 illness in 542
 influences of 171, 172
 loss of 435-456
 reaction to 444
 significance of 437
see also Bereavement
 mental disorders in 546
 role of 537
 Parent-child relation 365, 516, 535, 555-572
 Parent-infant relation 333
 Parieto-temporal cortex 290
 Parkinson's disease 284
 Parnate 638
 Partial reinforcement 655
 Pathological types 461
 Patients, mental health needs of 26
 study and care of 24-25
 treatment of physical symptoms 24

- Patriarchal family structure 563
 Patrocentric family structure 563
 Perceptual orientation 81
 Perphanazine 636-637
 Persecutory anxiety 426
 Personal-social scale of development 132
 Personality, aspects of 167
 characteristics, stability of 361
 development 46-47, 164-167, 516, 570, 651
 family in relation to 520, 535-553
 difficulties 546
 disorders 531
 functional 529
 with organic base 530
 effects of early experience 339-368
 prediction of 164
 tests 166
 theories of 535
 Phase development 45
 Phenobarbital 630, 637
 Phenothiazines 636-637
 Phenylketonuria 126, 146, 461, 466, 483
 protein-free diet in 127
 Philadelphia Child Guidance Clinic 14
 Phonasthenia 317, 318
 Phonemic system 301
 Phonological disorders 301-308
 Phonological system 299
 Photographic observers 85
 Phyletic levels of parent-young relationship 206
 Phyletic species, homologous movements in 192
 Phylogenetic analysis of behaviour 183
 Phylogenetic contrasts 185
 Phylogenetic relationships 190
 Phylogeny 192
 Physical development 153
 Physical disease, heredity influence on 18
 Physical growth 153-156
 Physiological variants 460
 Physiopathic theories 257
 Pituitary 652
 Placebo 630, 631
 Plainville 540-541
 Pleasure-pain principle 60
 Porteus Maze Test 355, 356, 357
 Poverty 541-542, 555
 Praecox, D. 324
 Precoded categories, utilizing of 85
 Prediction, hypothesis formation and 86
 Pregenital sexuality 61
 Prenatal development 52-53
 Prevention clubs 620
 Preventive intervention 680-682, 684, 686
 Primary narcissism 239-244, 247, 248
 versus object-relationship 244-246
 Primary non-disjunction 473
 Primary prevention in schools 671-687
 anticipatory guidance 682
 consultation and collaboration 685
 crises 678
 educational supervisor training 685
 emotional inoculation 682
 implications for 674-687
 physical supplies 674
 preventive intervention 680-682
 psychosocial supplies 674
 research 686
 sociocultural supplies 675
 teacher training 685
 Primary reaction patterns 175
 Primitive functions, rhythmical 298
 Privacy, observation as invasion of 73
 Prochlorperazine 636-637
 Projection 60, 258
 Prolonged early experiences 352
 Propanediol derivatives 641
 Prospective studies 342
 Prostitution 443
 Protophobia 332
Psychiatric aspects of juvenile delinquency 3
 Psychiatric disorder 513, 531
 terms of 257
 Psychiatric help, disorders requiring 26-27
 Psychiatric training 25-26
 Psychiatry, adult 256
 integration with medicine 15
 liaison with paediatrics 39-41
 Psychic life, stages of development 60
 Psychoanalysis 24, 186, 187, 218, 256, 264, 430, 515, 516, 593, 597
 approach 186
 retrospective 15
 techniques 334
 theory 51-68, 218, 220
 theory and practice, influence of 14
 treatment 309
 Psychoanalysts 610
 Psychobiology 23
 theory of 13
 Psychodiagnostic approach to problems of very young children 125-148
 Psychogenic disorder 302
 Psycholinguistic research 283
 Psychological problems, scheme for embracing 38

- Psychological states 266
 Psychologist's fallacy 73
 Psycho-metric testing 12
 Psychopathic mothering 341
 Psychopathic theories 257
 Psychopathic unfolding 256
 Psychopathological behaviour patterns 252
 Psychopathological theories 265
 Psychopathology 10, 261, 262
 Psychopathy 453-454, 571, 651, 652, 654
 Psychopharmacology 625-641
 Psychosexual development 61
 Psychosis in childhood 323-338
 differential diagnosis 337
 drugs and physical treatment 335
 management and treatment 332
 residential care 336
 therapeutic provisions 335
 Psychosomatic approach 33
 Psychosomatic complaints 233, 236
 Psychosomatic disorders 24, 248
 Psychosomatic disturbances 34
 etiology of 25
 Psychosomatic hypothesis 239
 Psychosomatic problems 32
 Psychosomatic symptoms 310
 Psychosomatics 156
 Psychotherapeutic interview 593
 Psychotherapy 305, 306, 307, 308, 318, 501, 502
 in school phobia 429
 Psychotic child, mute 90
 Psychotic disorders 305
 Psychotic mechanism 262
 Pubertal paraphonia 317
 Puberty 67-68, 266
 and adolescent growth spurt 155
 Punishment 564, 650, 665-666

 Rape 24
 Rats 202, 203, 346
 Rauwolfia drugs 637
 Reaction-formation 66
 Reaction patterns, primary 175
 Reactive behaviour 512
 Recessive inheritance 465
 Reciprocal inhibition therapy 658-661
 Reduction division 458
 Regression 47-49, 162, 329, 422, 460
 Rejection 453, 454, 515, 547, 548, 550, 551
 Relapses 654-655
 Relationship, theories of 265

 Relaxation therapy 315
 Remand homes 500
 Repression 649
 Reserpin 637
 Retrospective studies 152, 342
 Rhythmical primitive functions 298
 Rorschach's inkblots 166

 Sampling 343
 Satellites 472, 480
 Satiation 661
 Schizophrenia 245, 255, 323, 327, 330, 331, 335, 337, 445, 636, 645, 662, 663
 mistaken suspicion of 67
 School phobia 413-434, 547
 age and sex distribution 418
 anxiety and depression 423
 claustrophobic element in 426
 established illness 419
 family background 423
 fear of leaving home (mother) 422
 fear of other pupils 420
 fear of school 419
 fear of school work with expectation of failure 421
 fear of teacher 420
 general clinical features 417
 incidence 417
 management and treatment 427, 431
 onset of overt illness 419
 pathogenic familial interaction 425
 prognosis and follow-up studies 431
 psychopathological formulation 425
 psychotherapy in 429
 relationship to psychotic states 416
 truants 414
 School psychologists, opportunities in primary prevention 671-687
 Schools 539
 nursery 161
 primary prevention in 671-687, 678
 anticipatory guidance 682
 consultation and collaboration 685
 educational supervisor training 685
 emotional inoculation 682
 implications for 674-687
 physical supplies 674
 preventive intervention 680-682
 psychosocial supplies 674
 research 686
 sociocultural supplies 675
 teacher training 685
 Schoolteachers 38

- Secondary narcissism 247
 Secondary non-disjunction 475
 Secondary prevention 671
 Security 542, 570
 Sedatives 637
 Seduction 515
 Semantic difficulties 257
 Semantic test 256
 Seminars on child guidance 4
 Sensori-motor co-ordinations 201
 Sensori-motor reactions 287
 Separation and separation anxiety 19,
 416-417, 422, 424, 544-545, 557, 561,
 565-566, 568, 570, 660
 Sex behaviour 349
 Sex chromosomes 458, 469, 472, 473
 aberrations 473
 anomalies 461
 Sex limitation 471
 Sex-linked disorders 484
 Sex-linked dominant diseases 471
 Sex-linked inheritance 469, 483
 Sex-linked recessive diseases 471
 Sex-linked role behaviour 565
 Sex-role identification 563
 Sexual delinquencies 498-500
 Sexual deviations 646, 664
 Sexuality, infantile 61
 pregenital 61
 Shorthand for observers, symbols of 83
 Showing off 245
 Sibling rivalry 539
 Sigmatism 306, 307
 Simian level 265
 Situational analysis, preparation for ob-
 servation 78
 "Skinnerian" conditioning 662
 Social class, and brain damage 387
 and mental subnormality 381, 389, 390,
 396, 397
 Social interaction, consequences of early 214
 Social matrix 268
 Social releasers 191
 Social system, inadequacies of 12
 Sociological factors affecting development
 168
 Sociometric techniques 161
 Somatic non-disjunction 474
 Somatopsychic disturbances 33
 Somato-typing 19
 Somesthetic perception 199
 Somopsychic complex 252
 S-O-R formula 644
 Spasticity 637
 Speech 133, 144
 complex development of 281
 coordination 310
 deictic 277
 directive function 273-294
 disorders 325
 echolalic 325
 in pathology of brain 282-292
 inhibitory function of 279
 longitudinal study of 160
 patterns, rhythmical 312
 phobias 313
 semantic aspects of 283
 therapy 301, 304
 see also Communication; Voice
 Sphincter morality 63
 Splitting 426
 S-R formula 644
 Stammering 301, 303, 304, 309, 311
 Statistical analysis 635
 Stealing 492-496
 Stimulants 638
 Stimulation 220
 in animal behaviour research 198-203
 Stress 538, 539, 546, 551, 564, 573, 650,
 652
 Stuttering 309
 Subcortical connections 285
 Subcortical motor apparatus 285
 Subcortical motor centers 284
 Subjective observer 94-96
 Subjectivistic-objectivistic revolution 98
 Subjectivists, analogies of 95
 Subjectivity, evaluation of 94
 Subjectivity-objectivity dilemma 72
 Sublimation potential 49
 Submetacentric chromosome 472
 Submissive children 551
 Subnormal child 314
 Subnormality, mental, *see* Mental sub-
 normality
 Sucking activities, infant's 55
 Suckling, mental processes and develop-
 ment of 57
 Suicide attempts, dealing with 23
 Superego development 46, 63-64
 Surgery, new techniques 22
 Symbiotic child 324
 Symptom substitution 653
 Syndrome-shift 236, 237, 248
 Syntactic systems 299, 300
 Tantrums 661
 T.A.T. tests 594

- Teachers, training in primary prevention 685
- Teething 243
- Temperament, emotional 11
- Ten-column analysis 115
- Testing, babies 137
 infant development 158
 young children 137-141
- Therapeutic attitude 266
- Therapeutic consultation 593-608
 example of 597-607
 technique 595
- Therapeutic interview 78
- Therapeutic method, choice of 44
- Therapeutic observations 71
- Therapeutic service, planning 5
- Thwarting 216
- Thyroid gland, malfunction 10
 secretion 10
- Thyrotoxicosis 10
- Tinbergen's hierarchical theory 192
- Toilet training 60, 169, 171, 542
- Training, facilities 4
 of child psychiatrists 16
 of observers 86-89
- Tranquillizers 636
- Translocation 477, 478, 479, 480
- Trauma 238, 310, 329, 652
 oral 308
- Traumatic experiences 174, 240, 247
- Traumatic situation 62, 63
- Tremor 653
- Triggering function 278, 279
- Triploidy 480
- Trisomy 476, 480
- Truants 414
- Turner's syndrome 475
- Twins 167-168, 384
- Unconscious processes 648-649
- Verbal instruction 276-280, 291, 292
 inhibitory 279
- Verbal program, regulating function of 280
- Verbal response 281
- Verbal signals 276, 288
 measuring effectiveness of 275-277
- Vineland Social Maturity Scale 162
- Violence 496, 497
- Virus diseases of mother 18
- Visual signal 276
 measuring effectiveness of 275-277
- Vocal pattern 297
- Voice disorders 317-318
see also Communication; Speech
- Weaning 60, 169, 171, 341
- Widowhood 450-451
- World Health Organization 3-8, 251, 254
- Yerkes-Dodson Principle 646
- Young children, testing of 137-141
- Zygotes 457, 458, 473, 476

Made in Great Britain

UNIVERSITY OF LANCASTER
LIBRARY

Due for return by:

13. OCT. 1971	26. JUN 1973
<u>13. DEC 1971</u>	16. MAR. 1981
21. MAR. 1972	18. JUN 1981
13. MAR. 1973	7. MAR. 1991
13. MAR. 1977	
13. MAR. 1978	

CANCELLED

240/-

2000-01-01
2000-01-01

FOUNDATIONS OF
CHILD PSYCHIATRY

