

*The need to develop more objective, precise means of delineating and defining behavioral abnormality is the focus of this report. In an endeavor to explore the spectrum of child behavior, the authors undertook a pilot study. Methods and tentative findings are considered.*

## **AN EPIDEMIOLOGIC STUDY OF BEHAVIOR CHARACTERISTICS IN CHILDREN**

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ONE OF the great psychiatric dilemmas of our time is the decision as to what is normal and what is abnormal in human behavior. Lacking specific tests to make the distinction, the diagnostician has recourse mainly to his clinical judgment which rests on his training, experience, perceptiveness, and theoretical persuasion. These in turn are limited by the present level of scientific knowledge, which has made it possible for hypotheses regarding the pathologic import of certain symptoms to be accepted without sufficient testing or validation, to be passed from teacher to pupil, to persevere in the literature, and to influence a succession of therapies.

In child psychiatry, Leo Kanner points out that recorded symptoms "are of necessity those of selected groups and not of the total population of children"; and, he continues, "This selectiveness, in the absence of 'normal controls' has often resulted in a tendency to attribute to single behavior items an exaggerated 'seriousness' with regard to their intrinsic psychopathologic significance. The seriousness becomes attached to the signal regardless of what it announces and who announces it. The high annoyance threshold of many fond and

fondly resourceful parents keeps away from clinics and out of the reach of statistics a multitude of early breath holders, nail biters, nose pickers and casual masturbators who, largely because of this kind of parental attitude, develop into reasonably happy and well-adjusted adults."<sup>1</sup>

The two major issues besetting all research workers concerned with the differentiation of the psychiatrically well child from the psychiatrically sick child are brought out in Dr. Kanner's statement, namely, the problems of method and definition. These issues are the focus of the present study which represents the exploratory phase of an effort to penetrate the barriers of selection and to broaden knowledge about the behavior, function, and adjustment of children who are not likely to be picked out of the community for psychiatric examination and therefore have little chance of contributing to the statistics of symptoms.

The methodologic difficulties in designing a study of the spectrum of child behavior and symptomatology are great. Most previous studies with similar objectives have utilized nonrepresentative samples and/or methods which cannot be replicated on other groups. This is

true of the mammoth retrospective analysis by Ackerson<sup>2</sup> in the 1930's of the case records of 5,000 children, and of the University of California study by Macfarlane, Allen, and Honzik<sup>3</sup> of the behavior problems of 126 nonproblem children.

Leaving aside for the moment methodologic considerations, the second, and without doubt the larger issue, is the question of definition. In research focused on the enumeration of pathologic symptoms in children it is obviously important to be able to define a pathologic symptom and to state the degree of severity and frequency a behavioral item must manifest before it is considered a symptom. Because of the variability, imprecision, and lack of universality in the definitions currently used to differentiate normal from abnormal symptoms and behavior, it appeared that the wisest course would be to avoid definitions of pathologic behavior and to develop instead a method for measuring the prevalence and interrelations of certain behavior characteristics of children.

It is our ultimate aim to extend the epidemiologic study of the behavior characteristics of children to a large representative group of children. The purpose of the larger study will be: (1) to gain accurate knowledge of the prevailing behavior of children in relation to age, race, sex, and socioeconomic level; (2) to determine the clustering of behavior characteristics; and (3) to correlate these characteristics with the general adjustment and functioning of the child in his environment. From a better perspective on prevailing behavior and its intercorrelations, we hope that deviations from the usual pattern might be more easily and adequately measured, and consequently that a more objective and effective means could be evolved to identify the psychiatrically sick child in the community.

The present report is an analysis of

our pilot study designed to explore the best ways of approaching the larger project so that accurate and significant data may be obtained. In pursuing this aim a considerable amount of data have been collected; a partial analysis of these is presented here.

## Method

The main concerns in designing the pilot study were the problems of definition, reliability, and validity. Solution of these problems was attempted through a four-phase program: (1) development of an interview schedule; (2) selection of a sample and conduct of the field study; (3) testing the reliability of the data; (4) testing the validity of the data.

### The Interview Schedule

When the study was begun in the spring of 1955 the decision was made to use mothers as a source of information on child behavior. This was done with full cognizance of the hazards involved, namely, that the mother's report and interpretation of her child's behavior are a function of her standards, sensitivity, expressiveness, sophistication, interest, and anxiety. We were aware of the risk of introducing subjective factors which might detract from the validity of our findings. However, it was necessary to begin somewhere, and not only would it have been manifestly impossible to conduct intensive psychiatric examinations of hundreds of children, but in so doing we would have introduced another element of bias, the value judgment of the examiner. Our efforts were therefore directed first, to the formulation of a schedule which would elicit a maximum of objective response, and second, to the development of methods for testing the reliability and validity of the mothers' responses.

Three pretests on mothers, the last on a small representative sample, resulted

in extensive changes producing the final interview schedule used in the field study. This schedule contains 200 items with subdivisions and requires approximately an hour and a half per interview. It is designed not only to survey the behavior of the child who is the object of the interview, but also to gather census data on the parents of the child, information on the household and its occupants, and, finally, to elicit the interviewer's rating on the reliability of the informant.

The behavior survey reviews interpersonal and social behavior, intellectual behavior, body control and coordinative behavior, behavior relating to habits, and factors modifying or limiting behavior, such as physical handicaps, illness, fears and anxieties, and so forth. The adjustment of the child is investigated by asking the mother to place him on a series of 34 continua describing a five-point range of possibilities of adjustment from one extreme to the other.

Within the schedule most of the questions are of a short answer type, yes or no or multiple choice, and are designed to reveal not only absence or presence of a given behavior manifestation but also where necessary its frequency and intensity. At the completion of inquiry about each area of behavior, space is provided for write-ins so that the mother could be encouraged to add any information she felt had been omitted.

#### The Sample and Field Study

The sample on which the present study is based was systematically selected from addresses in the 1955 Buffalo City Directory and a list of new constructions in 1955 in Buffalo.\* Every 75th address,

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\* We are indebted to Dr. Abraham Lilienfeld, Roswell Park Memorial Institute, Buffalo, N. Y., for permitting us to adapt for our use the sample developed in the course of his work supported by Public Health Service Grant CS 9408, and for help in other methodologic aspects of this study.

using a random start, was designated for the sample, yielding 1596 addresses.†

The sample was divided into four economic quartiles based on the median monthly rental of the census tract in which the address was located. The addresses were placed serially in 40 subsamples of about 40 addresses each so that each subsample contained addresses in four different economic quartiles of the city. The subsamples were assigned randomly to the interviewers so as to insure that any interviewer effect would be distributed at random throughout the city.

A manual of instructions and definitions was prepared for the use of the interviewers who were carefully trained in the use of the questionnaire, and carried out practice interviews (some under supervision through a two-way screen) before going into the field.

Interviewing took place between July and December, 1956. At each assigned address the interviewer contacted someone in every household and interviewed the mother or mother-substitute if any children aged 6 to 12 were living in that household. Just before the interview a letter was sent to the selected address explaining the reason for the survey and assuring the mothers of complete anonymity. In addition, the interviewers carried information identifying themselves and their sponsors. These precautions plus the fact that most mothers seemed to enjoy talking about their children may have contributed to the high success in obtaining interviews. Interviews were obtained with 482 mothers representing 94 per cent of the households where interviews should have been possible.

The study was limited to children aged 6 to 12. Since in any given household it was likely there would be more than one child in this age range, a

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† Omissions from the Directory and from the new construction list were also sampled.

system devised by Kish<sup>4</sup> was used to insure objective selection of the child about whom the information was to be obtained. Each address was assigned a selection table in whose use the interviewer was instructed.

To give adequate representation to children in larger households, it was necessary to weight the interviews. A weight of one was given to an interview taken where there was only one child between 6 and 12; two where there were two such children, and so forth.

The information from the questionnaire was coded for IBM cards. As estimated by spot check, the reliability of the coding was 0.90 or higher. Entire recoding was done if the discrepancies between coding and check-coding were greater than 10 per cent.

Sampling errors in this study were computed in a fashion similar to that described by Woolsey for a systematic sample of households in Hagerstown.<sup>5</sup> This method takes into account the clustering of interviews and the systematic selection of addresses. The sampling errors were about one and a half times greater than those calculated for a random sample of the same size.

Reliability and Validity Studies

In all statistical reports based on interview responses, questions as to the soundness of the data must be a source of concern. To find at least partial answers to the questions on reliability and validity of the present data, an attempt was made to check these through additional studies. Reliability was tested by reinterviewing 46 or about 10 per cent of the mothers cooperating in the original 482 interviews. The problem of validity was approached by a special study involving the correlation of responses of mothers and children. It appeared reasonable that partial validation of the mothers' answers would be obtained if the same questions were

asked of the selected child. If both mother and child gave the same response or a response in the same direction, one could assume that the chances of the response depicting the actual truth were better than if the two answers were in opposite directions. The questions were selected from the original interview schedule and concerned the areas of behavior reported here. For those items where it was possible direct observations of the child's behavior were also recorded. A new sample, convenient rather than representative, was chosen from mothers and children who attended the outpatient clinics of two hospitals in Buffalo and the offices of several cooperating pediatricians. A total of 193 children aged 8 to 12 and their 193 mothers were interviewed separately and simultaneously by different interviewers, and the two interviews were later compared.

Results

The demographic characteristics of the weighted sample of 482 children correspond fairly closely to the characteristics of the total population of 6- to 12-year-olds in Buffalo. As is shown in Table 1, the composition of the sample is half male, half female; half fall into the 6- to 8-year-old group, half into the 9 to 12 group; half are in the

Table 1—Demographic Characteristics of Weighted Representative Sample of 482 Children Aged 6-12 in Buffalo

	Per cent
Males	49
Females	51
6- 8 years	50
9-12 years	50
Upper economic	51
Lower economic	49
White	85
Negro	15

two upper quartiles, half in the two lower; 85 per cent are whites, 15 per cent are Negroes.

For the following analysis we have chosen a small portion of the questionnaire which has to do with fears and worries, bed wetting, nightmares, temper loss, food intake, overactivity, restlessness, tics, stuttering, thumb or finger sucking, nail biting, and a group of other "tension phenomena."

Table 2 presents prevalence findings. Since the pilot study from which these

**Table 2—The Prevalence of Some Behavior Characteristics in a Weighted Representative Sample of 432 Children Aged 6–12 as Reported by Mothers**

	Per cent
1. Fears and worries, 7 or more present	43
2. Bed wetting within the past year	
All frequencies	17
Once a month or more	8
3. Nightmares	28
4. Food intake	
Less than "normal"	20
More than "normal"	16
5. Temper loss	
Once a month or more	80
Twice a week or more	48
Once a day or more	11
6. Overactivity	49
7. Restlessness	30
8. Stuttering	4
9. Unusual movements, twitching or jerking (tics)	12
10. Biting nails	
All intensities	27
Nails bitten down (more severe)	17
11. Grinding teeth	14
12. Sucking thumb or fingers	
All frequencies	10
"Almost all the time"	2
13. Biting, sucking or chewing clothing or other objects	16
14. Picking nose	26
15. Picking sores	16
16. Chewing or sucking lips or tongue or biting inside of mouth	11

results are drawn was designed primarily as an exploration of method, and not as a data-seeking device, the findings must be regarded as tentative at the present time. Nevertheless, it is worth while to examine the prevalence of some of the behavior characteristics a little more closely, to look at significant differences in distribution among various groups in the child population, and to discuss the implications of the reliability and validity studies as they may affect our data.

The high prevalence, 43 per cent, of children with many fears and worries stands out sharply. On the basis of mothers' responses to 30 questions on a wide range of fears and worries, children were classified into two groups: those having six or less fears, and those having seven or more. Table 3 shows that 50 per cent of the girls and 36 per cent of the boys had seven or more fears and worries, the difference being significant at the 0.05 level. An interesting finding was that significantly\* more Negro children, 63 per cent, than white children, 44 per cent, had a large number of fears and worries. Although no significant differences appeared, there was some tendency for younger children and those in the lower socioeconomic half of the city to have more fears than the older and economically higher groups.

Bed wetting occurring at any time within the year prior to interview was reported in over 17 per cent of the sample, and occurred once a month or more often in over 8 per cent. In the less frequent occurrences, no significant differences in distribution appeared by age, sex, race, or economic status. It was found, however, that about 8 per cent of boys 6 to 8 years old wet the bed two to three times a week or more often as compared with 2 per cent of

\* All differences reported as significant are significant at the 0.05 level or beyond.

## BEHAVIOR CHARACTERISTICS OF CHILDREN

**Table 3—Distribution by Sex, Age, Race and Socioeconomic Quartile of Fears and Worries in a Weighted Representative Sample of 482 Children Aged 6–12 as Reported by Mothers**

		Per cent of Children with Specified Number of Fears and Worries		
		0–6	7 and Over	Total
Sex	Boys	64	36	100
	Girls	50	50	100
Age	6– 8	52	48	100
	9–12	63	37	100
Race (in Quartiles III and IV)	White	56	44	100
	Negro	37	63	100
Quartile	I and II	64	36	100
	III and IV	50	50	100

the girls in the same age group, the difference nearly reaching significance at the 0.05 level. Although the figure for boys is somewhat higher than that obtained by Blomfield and Douglas in the British survey<sup>6</sup> of children aged 7 $\frac{3}{4}$ , the difference between boys and girls is in the same direction.

In examining (Table 4) the complex of seven behaviors which might be termed "tension phenomena," i.e. nail biting, nose picking, picking sores, chewing or sucking lips or tongue or biting inside of mouth, chewing, sucking or biting clothes and other objects, grinding teeth and sucking thumb or fingers, we found

that about 30 per cent of the children were reported to have one of these manifestations, 20 per cent two, and about 16 per cent showed three or more. There were no appreciable differences between boys and girls, but a significant age difference appeared, 41 per cent of the 6- to 8-year-olds manifesting two or more of these behaviors as compared with 30 per cent of the children between 9 and 12.

Regarding the differences in distribution among the various subgroups of children in our sample (Tables 5 and 6), it was found that the 6- to 8-year-old group differs significantly from children aged 9 to 12 in the higher occurrence

**Table 4—Distribution by Age of "Tension Phenomena"\* in a Weighted Representative Sample of 482 Children Aged 6–12 as Reported by Mothers**

Age	Per cent of Children with Specified Number of "Tension Phenomena"				Total
	0	1	2	3 or More	
6– 8	35	24	21	19	99
9–12	34	37	18	11	100
Total	35	30	20	15	100

\* "Tension phenomena" as referred to above, comprise nail biting, nose picking, picking sores, chewing or sucking lips or tongue or biting inside of mouth, biting or sucking or chewing clothes or other objects, grinding teeth, sucking thumb or fingers.

**Table 5—Distribution by Age of Certain Behavior Characteristics in a Weighted Representative Sample of 482 Children Aged 6–12 as Reported by Mothers**

Age	Per cent of Children with Specified Behavior Characteristic			
	Nightmares	Temper Loss 2–3 Times per Week or More	Teeth Grinding	Nose Picking
6– 8	36	55	18	32
9–12	20	40	9	19
Total	28	48	14	26

of nightmares, frequent temper loss, grinding teeth, and nose picking. Significant differences appear also between the sexes in some areas. More boys are overactive and pick their noses, while a higher proportion of girls seem to have a larger number of fears and worries than boys. Differences by socioeconomic level have not been found to be significant, although there is some tendency for more fears and worries and more nightmares to be reported for children in the two lower economic quartiles.

With reports that almost half the representative sample of children aged 6 to 12 manifest many fears and worries and frequent temper loss, that almost a third experience nightmares and bite their nails, that between 10 and 20 per cent wet their beds, suck their thumbs and show tics or other evidences of

tension, serious thought must be devoted to the implications of these findings. Does the high prevalence of these behavior characteristics, commonly considered indicative of psychopathology, signify that a large proportion of the children have psychiatric disorders? Or are these characteristics manifestations of developmental stress reactions occurring in essentially normal children? The answer to these questions, it seems to us, lies in the determination of the children's capacity to function effectively in their environment. A further task of this project is to study how well children function by correlating behavior characteristics with adjustment patterns. When this is done, it may be possible to make a meaningful interpretation of the prevalence findings reported here.

For the study on reliability, Table 7 lists in descending order the percentages of agreement on various behavior items in the responses of 46 mothers from the original interview to reinterview. Setting 90 per cent as an arbitrary cut-off point between good and poor agreement, it was found that consistency of response is increasingly good as one ascends the list of items: chewing or sucking lips, biting or sucking clothing, grinding teeth, bed wetting and tics to reach a high point of 98 per cent agreement on stuttering and thumb or finger sucking. The remaining items range from an 87 per cent agreement on nail biting and fears and worries to a low of 52 per cent

**Table 6—Distribution by Sex of Certain Behavior Characteristics in a Weighted Representative Sample of 482 Children Aged 6–12 as Reported by Mothers**

Sex	Per cent of Children with Specified Behavior Characteristic		
	Over-activity	Nose Picking	Seven or More Fears and Worries
Boys	57	33	36
Girls	42	19	50
Total	49	26	43

**Table 7—Reliability Study: Percentage Agreement of Mothers' Responses on First Interview and Reinterview in a 10 Per cent Subsample of a Representative Sample of 482 Children Aged 6–12**

	Per cent
1. Stuttering	98
2. Sucking thumb or fingers	98
3. Tics	95
4. Bed wetting	94
5. Grinding teeth	94
6. Biting, sucking or chewing clothing, etc.	91
7. Chewing or sucking lips or tongue, etc.	91
8. Biting nails	87
9. Fears and worries, 7 or more	87
10. Nightmares	83
11. Food intake	78
12. Restlessness	78
13. Picking sores	78
14. Picking nose	78
15. Temper loss, frequency	65
16. Overactivity	52

on overactivity. It appears that the items where the mother's reliability is highest are those which are concrete, objectively observable and have a high nuisance value as measured by social standards. With the exception of picking at sores and nose picking, the low agreement items are less easily defined as entities or are more dependent for interpretation upon subjective factors in the mother or child.

Table 8 indicates the findings of the correlation or first validation study. It must be borne in mind that the sample for this part of the study and the conditions under which the interviews were conducted were quite different from the original sample and setting. The original interviews were taken in the homes of the respondents; those for the correlation study were conducted under the aegis of medical authority. The sample in the first instance was representative; in the second, it was selected from

**Table 8—Correlation Study: Agreement of Responses Between Mother and Child in a Selected Sample of 193 Children Aged 8–12**

	Per cent			Total
	Agree	Mother Yes Child No	Mother No Child Yes	
1. Bed wetting	84	12	4	100
2. Thumb sucking	81	7	12	100
3. Stuttering	76	6	18	100
4. Biting nails *	70	4	26	100
5. Frequent temper loss	69	13	18	100
6. Biting, sucking or chewing clothing, etc.	68	16	16	100
7. Chewing or sucking lips, etc.	67	16	18	100
8. Tics	62	10	28	100
9. Picking sores	62	9	29	100
10. Picking nose	57	14	28	100
11. Grinding teeth	56	9	34	100
12. Nightmares	54	17	30	100
13. Fears and worries, 7 or more	54	5	41	100
14. Restlessness	53	24	22	100
15. Overactivity	52	35	13	100
16. Amount of food intake †	46	19	35	100

\* The comparison here is between mother and observer, since the child was not asked whether or not he bit his nails.  
 † "Yes" designates a greater amount of food intake; "no" designates a lesser amount.



mothers who required help of physicians for their children or for themselves. The demographic characteristics of the correlation sample were also different: there was a much higher representation of people from the lower socioeconomic levels, and the children were slightly older. All of these facts make it undesirable to extrapolate directly from the correlation to the pilot study. Our aim in this part of the work was to look at the agreement between mothers and children on the presence or absence of the selected behavior items. As may be seen in Table 8, the highest agreement is 84 per cent for bed wetting, and there is a rapid decrement to levels of low correlation such as 46 per cent for amount of food intake. Again, as in the reliability study, the items showing the highest agreement are, for the most part, the more objective ones: bed wetting, thumb or finger sucking, stuttering, and so on. The more subjective behaviors, such as nightmares, fears and worries, and amount of food eaten, occupy the position of least agreement between the mother and child.

A breakdown of the percentages of disagreement between the two respondents is also shown in Table 8. It may be seen that by comparison with mothers children yield a significantly higher percentage of positive responses for stuttering, tics, picking sores, picking nose, grinding teeth, nightmares, fears and worries, and amount of food eaten. Mothers report a significantly greater amount of overactivity and bed wetting. With the exception of the last two items, it is noteworthy that most disagreements are due to an excess of children's positive responses over mothers'. It may be useful to speculate on possible reasons for these differences.

Overactivity is one of the most frequent behavior items found in the present analysis, having been reported by half the mothers in the original interviews. Lacking a specific definition

of overactivity, the mothers had to judge its absence or presence by their own criteria. Since the perpetual motion of children is often a source of annoyance to mothers, their large number of positive responses is perhaps a reflection of the nuisance aspect of the behavior. On the other hand, children, unless they have been made unduly aware of the undesirability of bodily activity, do not regard themselves as overactive and are less likely to report this behavior. This difference in viewpoint is very likely the principal reason for the excess of positive responses by the mother.

Although the correlation study suggests that children tend to under-report bed wetting in comparison with mothers, the actual agreement between mothers and children on the presence of this behavior is higher than on any other item. In accounting for children's tendency to under-report this practice, one might assume that adverse social and emotional pressures exerted on children who wet the bed create in them a reluctance to confess it.

The behaviors which children report more often than mothers seem to fall into two distinct groups, the more objective or more easily observable and the more subjective or poorly-defined. The more objective behaviors reported more frequently by the child are tics, stuttering, picking sores, picking nose, and grinding teeth. It is quite possible that many children did not understand what was meant by the questions relating to tics and stuttering and therefore reported adventitious movements such as restless motions or speech difficulties of a different character. Excess affirmative answers by children on other "objective" items: picking sores, picking nose, and grinding teeth might be partly accounted for by the fact that these occurred in mild form and the child, in an effort to be honest, reported occasional practices of which the mother was unaware.

Some outstanding differences between the reporting of the mother and the child occur in those areas where subjective or poorly-defined behavior is involved. It is clear from Table 8 that the largest discrepancy is seen in fears and worries. It appears that 40 per cent of the mothers underestimate these concerns in their children and that very likely the mother is a poor source of information regarding this area of the child's experience. This is also true, but less so, of nightmares where the child does not necessarily confide each occurrence to his mother. As to food intake, the definition of normal amounts is a matter of viewpoint depending on cultural and family practices and on the degree of anxiety with which the whole subject is invested. Most of the disagreements on food intake are, as might be expected, a consequence of the mothers reporting a lesser amount eaten than do the children.

A comparison of mothers' reports on nail biting with the findings on direct observation of the child by the interviewer is made in Table 8. In 26 per cent of the children minimal evidence of nail biting, unreported by the mother, was found by the observer. Such a discrepancy may stem from two principal causes: one that the behavior is so minimal or so occasional that the mother is not cognizant of it and, two, that observers may err in interpreting what they see.

### Discussion

Since it is the main purpose of this study to explore ways and means of obtaining valid and reliable information about the behavior of children, a discussion of this report will serve its most useful function in pointing out and analyzing possible sources of error and in considering methods for their eradication.

1. Mothers, as shown both in the reliability and correlation studies, tend to

agree more closely with themselves and with their children on behavior which is objective and clearly defined. Thus subjective or poorly defined entities are likely to be under- or overenumerated by the mothers in comparison with children's reports or with themselves on reinterview.

2. The child is more likely to report subjective behavior than the mother but, on the other hand, may exaggerate the occurrence of casual or minimal behavior, or may fail to admit behavior such as bed wetting of which he is ashamed.

3. The "expert" observer or examiner is at the mercy of his opportunities for and powers of observation and his value judgment. He may find evidence of nail biting which is not present, or he may altogether fail to observe restlessness, overactivity, stuttering, or thumb sucking in a child who is either enough at ease with a friendly interviewer or sufficiently aware of social exigencies that he does not engage in such behavior during the interview.

4. Interviewer bias may be a source of inaccuracy. To the small extent that this has been studied it has not been found to be a factor, but further studies are needed, particularly with regard to the correlation between responses of mothers and children.

5. The formulation of the questions asked the mother and child is a likely source of error. Despite every attempt to set questions up as clearly and objectively as possible, it would be incautious to assume that every question was interpreted the same way by every person interviewed.

From our experience with the study to the present time, we have determined the need for further substudies on validation and method. Although the evidence suggests that well-defined objective behavior is somewhat more accurately reported by the mother, efforts must be made to define such behavior even more

precisely for still greater validity of reporting. The subjective and less well-defined behavior poses the greater problem and the question of how to define and how to obtain information about it is not easily answered.

Along with the analysis of the remaining data available from the pilot study, validation studies on small representative samples around each area analyzed will have to be developed. The factor of interviewer bias in the pilot work will have to be studied more thoroughly and the interview schedule will have to be revised to attain more precision and clarity of definition. Once these enterprises have been completed it will be possible to apply the more refined methods developed in the course of the preliminary work to the major task of studying a larger sample of children in which the subgroups classified according to age, sex, race, and socioeconomic level will be adequately represented. For that study it is planned to utilize a school population since it is more readily available than children from the community. Interviews with the mother will be continued, interviews with the child will be conducted, and suitable personality tests will be given. Adjunctive information will be sought from the school authorities and any other agencies or persons deemed useful. Children in one of the lower grades will be studied and, as they move from grade to grade, the same children will be restudied in later years. In this way, not only cross-sectional data will become available, but also longitudinal data on essentially the same group of children.

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## Summary

This preliminary study of behavior characteristics in a representative sample of 482 children as reported by mothers was designed as a testing device for a larger project. It has, within the limitations described, presented two significant findings. The first is that for a representative sample of children, mothers report a high percentage of behavior commonly thought of as pathological. The second is that mothers' reports in comparison with children's tend to err in the direction of underenumeration suggesting that the prevalence of the reported behavior may be even higher than the data disclose. This raises for serious consideration the question whether these characteristics are truly indicative of psychiatric disorder or whether they occur as transient developmental phenomena in essentially normal children. We hope that our further studies will contribute some clarification of this important issue.

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