

OBSERVATIONS AND SUGGESTIONS REGARDING GIFTEDNESS, FAMILIAL INFLUENCE AND THE ACHIEVEMENT OF EMINENCE

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This paper was inspired by the Study of Mathematically Precocious Youth (SMPY).¹ Two main questions center on the possible careers for such gifted youth, although the same questions may be asked of any gifted youth. The first question is whether or not they will become competent but unexceptionally creative adults, as many gifted children do; or, "world-class", eminent adults, as very few gifted children do. The other question raised is whether or not we now know enough about the early family backgrounds of gifted youth and eminent adults to predict possible careers.

First of all, it is axiomatic that good research always leads to more questions than answers. On this basis alone (and there are others) these comments are predicated on my belief that the Study of Mathematically Precocious Youth (SMPY) is the most important piece of research on giftedness since Leta Hollingworth's 1942 report about children with IQs 180 or more. It is superbly conceived and constructed. It is a study that has been much needed. When it is finished (if ever), we shall know much more clearly what might have become of some of Hollingworth's subjects than we now do, not because an SMPY researcher has been locating some of Hollingworth's once spectacularly precocious youth (Montour 1976), but primarily because of the close similarity between her subjects and SMPY's top ones as to their exceptionally giftedness. Fifty years after Terman, we realize that precocity and exceptionally giftedness do not in any way *guarantee* adult creative ability, eminence, or even high-level achievement. Rather, such gifts are potential facilitators, powerful *organizers* that in and of themselves do not necessarily lead to creative behavior, but endorse one for an effective career than one of eminence (Montour 1976, 1977; Terman 1954a, 1954b).

See Stanley, Keating, and Fox 1974; Keating 1976; and Stanley, George, and Solano 1977.

These are the basic questions. I wish to raise and discuss six other points.

1. Perhaps the most urgent question regarding any gifted youth is: Will they produce? If so, when? If not, why not? At any point in their development, the answer, I believe, is simply, have they? Youths as exceptionally bright *and* focused in a cognitive domain as these will soon be at the age where we could expect a few of them to do interesting work (Albert 1971, Cox 1926, Terman 1954). If they are to become eminent as adults they should soon be producing work that will draw the attention of others. If this occurs, this early productiveness (our best behavioral index of potential eminence) would indicate the start of an illustrious career (Albert 1975). Because these are not gifted, but exceptionally gifted, children (Albert, 1971), it is crucial to look at what they are doing now and to question whether or not they are likely to become highly productive, unusually creative young adults. This is no more than looking for that foreshadowing that exceptional giftedness-creativity often has. But one must do it now, for like so much regarding these youth, there is potentially an accelerated take-off to their careers that could leave us behind in our observations.

2 At the moment, the most judicious thing that one can say is that these are exceptionally competent youths. Left alone, allowed to go their own developmental ways, most are likely to become highly competent adults, although with the kind of sensitive interventions that Stanley and his group have made for them, this future, barring personal or social catastrophies, is a fore-ordained conclusion to their precocity. In terms of the data and these efforts I believe these youth are much more likely to become "known" than lost in comparison to Hollingworth's subjects and many Terman subjects, especially his Group C (Oden 1968, Terman 1954).

It is important to keep in mind that, generally, highly competent people are also good achievers. As children and later they tend to be not only intellectually gifted but happier, more energetic, and fairly versatile compared to the general population at almost any age. But they are not necessarily highly creative nor do most of them become widely recognized for their creativity. MacKinnon's work with creative architects (1962, 1964, 1967) shows that his groups 2 and 3, who were of moderate or minimal creativity but much less creative than his eminent group 1 architects, were basically groups of competent persons. In some ways they resemble Terman's Group A,

although among this group were several of America's most eminent psychologists and, I believe, at least one Nobel winner. There is nothing wrong with being competent, but it would be a pity to "stop" there and not become creative as well with the cognitive skills that these youths have. As all gifted children do, they represent a natural resource, which we, at this moment, do not know how to produce, enlarge, nor too often recognize for the true gifts and potential they represent. On this basis the Hopkins project is so far our most unique study of gifted youth: better than any other study there has been a recognition of these youths' gifts and of the fact that by themselves, they may become "broken promises". To put the issue that giftedness raises quite simply: if we cannot "nature" such giftedness, it is important for us to "nurture" such potential.

3. In the main, given sufficient cognitive ability, what leads from competence to creativity is a series of early family and extra-family experiences that permit intellectual and personal growth and continue to sharpen the cognitive skills and motivational drives of the child. Since the exceptionally gifted have great cognitive potential, the question becomes are they having (or have they had) the kinds of early family experiences and relationships that appear to underlie creativity, or to put it another way, that convert potential creativity into actual creative production. The research on family determinants of creativity generally indicate (at least in Western countries) that the values, personalities of parents themselves, their relationships with each other and their parents, and those between them and the potentially creative child differ in critical ways from those for the less creative but well-achieving, competent child (Dewing 1970; MacKinnon 1975).

This is an area of investigation which always bears looking at in order to see what kind of potential gifted subjects have. Representative studies which throw light on this are Albert (1977), Barron (1963), Brooks (1973), Dewing and Taft (1973), Getzels and Jackson (1962), Helson (1965, 1966), MacKinnon (1962, 1964, 1967), Morrow and Wilson (1961), Roe (1952), Terman (1954), and Weisberg and Springer (1961). The consensus of these studies is that the creative person-to-be comes from a family that is anything but harmonious--one which has built into its relationships, its organization of roles, and its levels of communication a good deal of tension if not disturbances at times, what I term a "wobble." But along with these characteristics, there is a commitment to achievement as opposed to just "having fun", a special focus of

interest and aspirations upon the indexed child, *and* a great deal of family effort to see that these family aspirations are met. In this manner such families are experience-producing, experience-directing agents in the development of their members, to extend Hayes' (1962) concept of drive. The competent, achieving child appears to come from a more harmonious, more serious, more structured, better organized, and (especially) more conventional family than the potentially creative child does. It behooves us to look very carefully *into* the families of gifted children to see what kinds of families they have around them, interviewing all family members as well as the child for data. Another suggestion I would make is to include divorced or separated parents, which Weisberg and Springer (1961) did not, and to interview fathers as well as mothers, which Getzels and Jackson (1962) did not, and not rely solely on adult retrospection, which the IPAR studies did to the exclusion of any interview data from parents (MacKinnon 1975).

Time and time again we read of evidence that the nature of the relationship that many creative persons have had to their parents as well as the parents have to one another is as critical to their development. The problem is to characterize these relationships. There appear to be rather imbalanced relationships between father and mother for creative persons (part of the "wobble" mentioned above). For example, many eminent men, *especially* political leaders, have mothers who not only are much younger than their husbands but who also have a decidedly binding, ambivalent relationship with their famous sons-to-be. (In fact, non-science eminent men appear more mother-oriented than eminent physical and biological scientists, who tend to have more "balanced" parent-child relationships.) This accords well with Freud's early observations (1935) and holds for persons such as Freud himself, Balzac, Churchill, Gandhi, Goethe, Hitler, Lyndon Johnson, Nixon, Franklin D. Roosevelt, Stalin, Woodrow Wilson, and Thomas Wolf. There is an element in the relationship that could be called "Oedipal" or at the least very binding and "very special" (Albert, 1977). From it the child derives his feelings of being "special"-of being preferred, favored, *and* selected for great things. Interesting enough, as youths these men seemed to acquire both a high degree of ambivalence toward women and a feeling of tremendous self-importance and personal optimism. How these two motivations operate is what makes their biographies such fascinating reading!

The creative-to-be son's relationship with the father is somewhat different but equally important even when the father dies early in the child's lifetime, which appears to occur often among poets (Brown 1968) and eminent scientists (Roe 1952). The high percentage of early parent-loss represented in such diverse historical periods and fields of interest in the lives of Leonardo Da Vinci, Michelangelo, Newton, Scarlatti, Gibbon, George Washington, the Duke of Wellington, Andrew Jackson, Charles Darwin, Bertrand Russell, Hitler, Stalin, Leta Hollingworth, or contemporaries such as Sartre, Solzhenitsyn, Richard Heilbrunner, Erik Erikson, and famous entertainers such as Mel Brooks, Liv Ullmann, and Jack Nicholson makes the phenomenon of early parent-loss intriguing and essential to place in the development of creative potential. Recent research (Albert 1977) indicates that it is not simply parental loss at issue but also the clear presence of special talents, giftedness, that helps determine whether a child experiencing early parental or sibling loss will have a psychologically healthy or unhealthy development. We referred above to giftedness as an *organizer*. This is one critical example of the concept. A child's giftedness helps to organize the attitudes, aspirations and instrumental behaviors of significant persons around him. Stanley's SMPY project is an excellent non-family example.

In terms of within family dynamics, fathers and sons are definitely linked through achievement or the lack of achievement. A number of studies show that it is usually the father rather than the mother who is important to the son's achievement or under-achievement in school. Because cognitive giftedness is accelerated cognitive development in some area(s), the impact of a father upon his precocious son's achievement can be much earlier than for the average child. The literature shows that a definite degree of aloofness and emotional distance, if not in some cases clear hostility, is usually involved in chronic under-achievement. But it is more complicated than this. The question is not only what the early father-son relationship is; *how* the gifted, potentially creative child resolves it determines to a large extent whether or not he will become creative. Studies of boys and their fathers by Abeggaden (1958), Block and Haan (1971), Freud (1959), Hirsch and Keniston (1970), Levi, Stierlin, and Savard (1972), Keniston (1965), and Wilson, Soderquist, Zemke, and Swenson (1967) not only give evidence of this developmental outcome but also clues as to the complicated ways families can arrange themselves and their offspring, especially through the father-son relationships.

The reason for pursuing this matter in detail is that over the years, research has spotlighted the early family as an experience-producing agent and a major factor determining whether or not a bright child will become a creative adult. Projects initiated in the 1920s (Terman's Genetic Studies of Genius and the Berkeley Guidance Study) have constantly uncovered family factors related to adult life satisfaction and creative behavior. The pity is that no longitudinal project has started with the specific assumption that such early factors are linked. We still are forced to retrospect either through informants or data collected with other orientations and questions in mind. (See No. 5, below.)

4. Over the years a number of personality attributes have been found repeatedly to characterize the creative person (Stein, 1974, pp. 58-60). Some of these characteristics are motivational, some attitudinal, others are values held, and a few have to do with the social situation and appearance of the creative person. Yet, there remain several stylistic attributes of creativity bearing further examination. One is the ratio of divergency to convergency. Although the literature speaks of more divergence as opposed to convergence in creative persons, my hunch is that the very eminent, which some SMPY participants have the potential for becoming, have a balance of high convergence and high divergence. This gives them a style of thinking that allows them to "sweep" their particular field and then to move its borders. The balance of convergence and divergence--an understanding of the essential information and skills of a field coupled with the facility to generate more uses or implications--when linked with high aptitude and keen interest in a particular field (such as mathematics for many of the SMPY participants), make for a powerfully motivated and penetrating cognitive style of problem-solving ability. When this balance is not within their own make-up, many eminent persons pair up with someone who complements them in style. An excellent example is James Watson and Francis Crick. This pairing and how it worked is clear in the *Double Helix* (Watson 1968). Other examples are Hardy and Littlewood (Hardy 1974) and the young Freud and the older Fliess, followed by an even older Breuer. (Even Einstein for years had a number of post-Ph.D.s mathematicians to help him at his mathematics as apparently his mathematics was sometimes not the equal to his grasp of theoretical physics.)

Somewhat paradoxically, the *capacity to work alone* is an even more crucial personal attribute than "pairing up" is. It is the essential non-cognitive ability in converting a publicly appealing, interesting person into a privately developing, imaginatively producing, creative person. Perhaps the clearest (and saddest) example is Gregor Mendel; another eminent person, less dramatically alone, was Einstein. The critical factor is not complete physical isolation (although it often takes this form during the most creative moments) but a capacity to work and think alone and differently from one's parents and other significant persons without either too much anxiety or too great a compulsion to be different and thus "formed" by others. Paradoxically, this ability to work alone is often achieved by working initially with an interested but less talented third party (the creative person and his parents being the first two parties). "Third parties" are often found in the early development and creative efforts of eminent persons. Such third parties may be a teacher (Einstein), a nanny (Churchill) a cousin (Galton), an older sister (Galton, Thomas Wolfe, Golda Meir), or an older brother (Bertrand Russell), to mention a few examples.

The capacity to work alone is as complex as it is important, beginning in early childhood. It is related to the child's early attachment to *and* growth away from its caretakers (Albert, 1973, Winnicott 1958). Clear evidence of this growth is in experimental work of Harlow (1959) and Schaffer and Emerson (1964), as well as in the theoretical and clinical work of Bowlby (1969) and Erikson (1952). While curiosity, as a response to novelty and change, is present almost from birth, its fullest development into an active exploration of the environment definitely depends on the nature of the relationship between the young child and his caretakers. The capacity to be curious and to actively explore limits and possibilities is learned through others, especially parents' own behavior and encouragement. Parents and child tend to match one another cognitively in more ways than in I.Q. scores. An interesting illustration is mentioned by Dewing and Taft (1973): children with a high potential for creative behavior tend to have fathers who themselves experienced a greater than usual amount of childhood loneliness which the fathers were able to recall years later without embarrassment or denial.

There is another example of necessary balance that is related to eminence. Whereas convergence and divergence have to do with cognitive styles, our second example is concerned with motivation,

the balance of the needs for achievement, social acceptance, and independence. The need to balance off these three motivational sets is critical, involved in both a person's self-image as an "original" and as a socially acceptable person. We know highly creative persons recognize and prize their creative ability; we also know that at times it leads to sharp clashes with one's social environment and difficult - to - accept relationships. Yet with creativity, there are the dual responsibilities to it and to oneself and others. In general, need for achievement is related to judged competence in socially desirable skills. Need for independence pertains more to self-reliance and the need to be self-reliant. And social acceptance is a need established prior to either one. Any of the three needs alone leads to problems as far as eminence is concerned. High need for achievement by itself could lead to both a high pedantry and over-concern for the evaluations of others. Too high a need for independence could lead to an overly idiosyncratic and isolative approach without the basics supporting one's idiosyncratic processes. Neither need alone leads to creativity. It seems to me that the achievement of eminence requires both a high need for achievement and high need for independence or self-reliance operating together, linked with a somewhat weaker but clear need to be accepted by at least a few significant others. Without this one runs the risk toward a "destructive" career rather than a "constructive" one, e.g. Hitler as opposed to Churchill. When this motivational balance does occur one has the potential motivation for long-term creative and independent work in any field. And at this point the range and strength of cognitive gifts and aptitudes become critical.

5. Perhaps the only way we shall learn clearly what does and does not lead to creativity is through longitudinal, predictive study, acquiring a great deal of background material on all members of the indexed child's family and requiring an equal amount of patience. The Berkeley Guidance Study is still paying off dividends (e.g., Brooks 1973). Terman's work will continue for years to produce rich information. In both case a plethora of data was accumulated, although at the time of collection there were no specific hypotheses in mind as to where it would all lead or even how it would be used in the future. This is one of the gambles a longitudinal study must take. It will mean that a number of variables simply do not hold up over time. But even *that* is important information. Such "errors" are invaluable leads to knowledge. Over time we might observe the subtle linking of interests and values to skills and personality that appears to lead to eminence. But because childhood interests and

skills appear to be somewhat epigenetic in their development, often showing the waxing and waning Bayley (1968) and Kagar and Moss (1962) demonstrate, *time* is a crucial factor in the observation of them, for long periods of time are needed both to locate and rediscover the patterns of development involved.

6. Lastly, those of us interested in giftedness should look closely at the literature on disadvantaged children. It is important to know what has and has not worked in various Headstart programs. From such a review can come leads as to what facilitates children's cognitive development in general and, naturally, what does not. Of course, this approach assumes that the same factors are associated with cognitive development regardless of the rate of that development--retarded, average, or accelerated. That remains to be tested. Nonetheless, we do know that as far as the effects of disadvantaging educational systems are concerned, the brighter child suffers more than the average child (Fraser 1973, Wiseman 1964). Another example of the insights that might come from comparing gifted with disadvantaged children is suggested by Bronfenbrenner's (1975) summary of early-intervention programs. This comprehensive review spotlights specifically the positive effects of home-based intervention, i.e., basing one's efforts upon parents *and* the child rather than upon the child outside the home. When the family is the unit, the enhancement of the child's intellectual development holds up well over time rather than diminishes after the program is over, again suggesting that if one wishes to help children's cognitive development, one needs to work with the parents as well, perhaps before any substantial change can take place in the typical gifted child's development

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According to an article by D. L. Pike in *The Futurist* XI:6:373, (Dec. 1977) there were more students (11.3 million) in college last year than there will be again until the year 2007. There were more students in private colleges last year, (2.4 million) than there ever will be again (in the US).
