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ABSTRACT

The belief that gifted children are more likely to have personality problems than "normal" individuals is not supported by research, but the image of the disturbed gifted child persists. This paper reviews research from a life-span developmental perspective to examine why this image persists. The paper critically examines the research of L. Terman, L. Hollingworth, W. Roedell, P. Janos, S. Dauber and C. Benbow, G. Betts and M. Neihart, and Tomlinson-Keasey and Little. The research specifically addresses personality traits, social cognition, social standing, characteristics of the extremely gifted, profiles of gifted/talented children, attachment among early college entrants, sex differences, family harmony, and predictor and outcome variables. Strengths and weaknesses of recent studies are explored, revealing such problems as subject preselection, low percent of variance accounted for by predictor variables, and cohort effects. (Contains 19 references.) (JDD)

Exceptional Cognitive Development: A Life Span Developmental Approach

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Running head: EXCEPTIONAL COGNITION

Abstract

Many people believe that gifted children are more likely to have personality problems than "normal" individuals. The empirical evidence, beginning with the seminal studies of Terman (1925), which continues to the present tends to support the opposite view: That gifted individuals are usually better adjusted as well. Janos & Robinson (1985) review the research done since Terman and conclude that his results have largely been confirmed, with some exceptions. This and more recent research are reviewed from a life span developmental perspective, with two questions in mind: Why does the image of the disturbed gifted child persist? and What types of environment are conducive to minimizing the risk of developmental problems in highly gifted children.

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INTRODUCTION

Historical perspectives

While interest in gifted individuals has existed for a very long time, the psychological study of giftedness began with the work of Lewis Terman (1925, Burks, Jensen & Terman, 1930; Terman & Oden, 1947). His longitudinal study of over 1,000 children between the ages of two and fourteen, and with IQs between 130 and 200, is, in many ways, a model of its kind. Of course, it is not without its flaws, many of which are due to the time it was written. While there is a long standing and widespread belief that gifted children have as many, or more, social and emotional problems as there normal peers, Terman found just the reverse.

Building on earlier work, Terman (1925) devised seven tests of "character". Although, by today's standards, these tests are preposterous on psychometric grounds, the results were highly significant, and strongly favored gifted children over their normal peers; this disparity was greater for girls than for

boys, although sex differences within each group were usually small and insignificant.

Subsequent research has all been informed by the Terman study. Thus, Grossberg & Cornell (1988) note that, despite the fact that Terman and his colleagues demonstrated convinvincingly that cognitively gifted children tend to be better adjusted than the norm on a wide measures, and that further research confirmed this view, concern over the adjustment of gifted children continues. The first serious researcher to take the opposite view to Terman was apparently Hollingworth (1942) who according to Grossberg and Cornell (1988) was concerned that gifted children were more prone to social and emotional difficulties than their normal peers; later researchers have echoed these concerns. Yet Hollingworth (1942) noted that children ranging in IQ from 135 - 190 with a median of about 153 were "less neurotic, more self-sufficient, and less submissive, as a group, than are the populations with which they are comparable" (p. 251).

Hollingworth, however, departs from the Terman tradition in that she believes that there may be personality problems for the extremely gifted, especially those scoring above 170 IQ. She notes that children with IQs over 150, especially those over 170,

either become extremely bored in school with their age mates, or socially isolated in school with their intellectual equals far older than then. The debate over how much to accelerate the schooling of gifted children has not yet been settled, although Hollingworth seems to favor a moderate approach. In particular, she notes that "...compulsory education, with heterogeneous classes, forces upon gifted children situations that would be analogous to those arising if teachers and superintendents were compelled to consort daily, unprotected, with giant thugs and gangsters" (p. 272).

Research after Terman and before 1986

Janos & Robinson (1985) summarize findings subsequent to Terman's study. Roedell (1978) found that, while gifted preschoolers had more social cognitive skills than their peers, these skills were not reflected in the children's behavior. Gifted 9 - 12 year old children are more like their mental age peers than their chronological age peers in terms of moral judgment (Thorndike, 1940), a finding which has been replicated more recently, and with perhaps better instruments (Rest, 1979; Janos, Robinson, & Sather, 1983); and with other variables such as psychosocial

maturity, adjustment, and sociability (reviewed in Janos & Robinson, 1985).

The early findings that exceptionally gifted children may be an exception to the rosy picture painted by the above have also been replicated. Janos and Robinson (1985) estimate that "psychosocial difficulties are present in at least 20 - 25 percent of school age children of very superior intellectual ability, versus 5 - 7 percent of ....Moderately gifted children" (p. 173), although the estimates of children having difficulty vary widely from study to study and criterion to criterion. Perhaps chief among these children's difficulties is an inability to find peers with whom they are comfortable. However, they also tend to have either unusually close or distant relations with their parents (Albert, 1978) and extraordinary intellectual demands (Bloom, 1982; Fowler, 1981), some of which may be self-imposed, or the result of a feeling of obligation to contribute to society (Freeman, 1979).

Although these children have difficulty throughout their development, Hollingworth (1942) found these to be particularly acute at ages 4 through 9. Burks et al., (1930) however, found that, for children ranging in ages from 8 - 21 there was a "definite tendency for

children above IQ 170 ....to be rated as less well socially adjusted than less gifted subjects" (Janos & Robinson, 1985, p. 174).

Recent Studies

Janos et al. (1988) studied 63 students who entered college at age 14 or earlier through the University of Washington's Early Entrance Program (EEP). The EEP admits about 15 students each year, and provides them with a "transition year" before entering the University proper. Students are selected on grounds of "high scores on the Washington State College admissions test (WPCT, personal maturity, convincing motivation for undertaking university level studies, and parental support for their choice" (p. 211).

Eighty three percent of the eligible EEP students took part in the study. Subjects completed a four part questionnaire; part one requested information about the ages of the subject's best friend and five additional friends, the rest of the questionnaire asked about relationships with agemates (less than three years older than the subject) and with elders (at least three years older). Data collected included time spent with,

sensitive communication with, and intimacy with people in each group.

There were several hypotheses: 1) There would be considerable attachment among the early entrants; 2) As they progressed toward graduation, the attachment with older students would increase; 3) Females would progress more quickly than males.

Results included: 1) The EEP students, as a group, "were socially well situated" (p. 212), 92 % reported having a best friend, 68 % identified at least five other friends. 2) While there was wide variation, the average "best friend" was significantly and markedly older (the average age difference was almost three years) and "close friends" were also older (average age difference more than two years). Freshman's friends, however, were not significantly older than the subjects, and the age differences for close friends were significantly greater for females than for males. 3) The amount of time spent with "elders" increased significantly over the course of the college career. 4) Similar results were found on the sensitive communication scales, although one of the results only approached significance. Thus, all three of the hypotheses were confirmed.

Dauber and Benbow (1990) compared extremely mathematically or verbally gifted (1 in 10,000) 13 year olds with their modestly gifted(1 in 20) peers in terms of personality and peer relations. While almost no differences were found on personality traits, the extremely talented group, especially the verbal group, was rated lower by their peers in terms of being considered athletic or popular, and in social standing.

Children in the extreme groups were identified through talent searches at Johns Hopkins University as 13 year olds who scored over 700 on the math SAT or over 630 on the verbal SAT. Over three years, 268 boys and 23 girls were identified for the math group, and 98 boys and 67 girls for the verbal group. Additional girls were recruited later for the math group. A modestly gifted group was selected through similar, less stringent talent search.

All the students were mailed questionnaires, 77 % of the extreme groups and 54 % of the modest groups responded. The highest response rate was among the girls in the extreme math group, but this may have been due to the extra efforts made to obtain responses from that group. Also more effort in general was made to get responses from the extreme than the modest groups. Some effort was made to determine if nonrespondents were

different from respondents, and no difference in groups was found.

The questionnaire was 24 pages long and dealt with personality traits, social activities and social standing within the peer group.

Results included: 1) Modestly gifted students rated themselves more extroverted than the extremely gifted; 2) Peer ratings favored the modestly gifted on all three variables included (popularity, social activity, membership in the leading crowd); 3) The modestly gifted group was considered more athletic. In addition, discriminant analyses revealed that the personality variables and peer rating variables could discriminate the two groups.

Betts and Neihart (1988) note that gifted children have frequently been treated as one homogeneous group, and that when they have been differentiated, it has usually been on the basis of degree of gifted, area of gift, or a single personality variable related directly to giftedness. They take a more idiopathic approach, and describe six profiles of gifted and talented children which they derived from their experience. They note at the beginning that the purpose of these six categories is not to subcategorize the gifted, but to

provide insight into the differences within the gifted group.

The six types are: 1) The successful, 2) the divergent, 3) the underground, 4) the dropouts, 5) the double labeled and 6) the autonomous. Type 1 is estimated to be by far the most common, at least among those identified as gifted, but each type has its own advantages and disadvantages. Type 1 children have few evident problems; they are fairly successful in school, have friends, appear to be well liked by their peers and by adults, and have good self-concepts. Frequently, however, they become competent but unimaginative adults, and do not fulfill their potential. They conform to the system, and use it to their advantage, but, frequently, they pay a price for this.

Type 2 children are difficult to identify. They tend to be highly creative but also obstinate, lazy, and sarcastic. They frequently have problems with self esteem, and are at risk for dropping out of school. They neither conform to the system nor use it to their advantage.

Type 3, or underground gifted, children, are those who hide their giftedness in order to fit in. They are more commonly girls than boys, and girls tend to come into this group earlier than boys do. These children

are dealing with their insecurity in ways which adults find inappropriate; unfortunately, the response is frequently to push them to achieve, which only increases their resistance. It is often better to accept these children as they are, at least temporarily.

Type 4 gifted children are those who drop out of school, most often in high school. They feel angry, rejected, and unrecognized, and may react by becoming depressed, withdrawn and defensive. They have tremendous problems with self esteem, and frequently they and their families would benefit from counseling or therapy.

Type 5 children are those who are double labelled, that is, both gifted and emotionally or physically handicapped. They are usually not identified as gifted, and often evidence behaviors not identified with giftedness. They show signs of stress, and use their high intelligence to deal with this, albeit in inappropriate ways. They are often very good at rationalizing or intellectualizing their feelings of inadequacy.

Finally, type 6 children are those who learned to use the system to best advantage. They create new opportunities for themselves, have strong, positive

self images, and are well respected by their peers and by adults and have a strong sense of personal power. They differ from type 1 children in that, rather than doing as little as possible, they do as much as they are capable of (Betts and Neihart, 1988) .

Tomlinson-Keasey and Little (1990) is the most recent follow-up to the Terman study. One of the great strengths of that study is its longitudinal nature. Thus, the present article reports on the 1069 gifted men and women who had been studied for 60 years since being part of Terman's original group and had completed at least 60 % of the questions in this study. Its purpose was to investigate those traits, other than cognitive skill, which would predict adult achievement and adjustment. The authors used previous longitudinal studies to guide them in selecting variables from the Terman data they would analyze. These variables were intended to measure five constructs: Family harmony, intellectual determination, social responsibility, sociability and parental education; these constructs were used in an attempt to predict occupational achievement, educationally attainment, intellectual skill, and personal adjustment in adults.

The Terman data includes 21 questionnaires given administered between 1922 and 1986. Somewhat

arbitrarily, Tomlinson-Keasey and Little divided these into predictors (until 1940) and outcomes (after 1940). In 1940 the average participant was 30 years old. Predictor set one included three factors (social responsibility, intellectual determination, and sociability) derived from the 1922 administration of parent and teacher ratings of the children's personalities. Predictor set two included two factors (parental education and family harmony) derived from family of origin characteristics. Outcome measures included three factors (education/occupational attainment, intellectual skills and personal adjustment) derived from questions determined to reflect occupational achievement, educational attainment, personal adjustment, and intellectual skill. To accommodate gender differences, outcome factor one was subdivided into two factors (educational and occupational attainment, respectively).

Structural equation modelling was used to relate the five predictor factors to the four outcome factors. Educational achievement was predicted positively by social responsibility and parental education and inversely by sociability. Intellectual skills were predicted positively by intellectual determination and parental education, and negatively by sociability and

family harmony. Personal adjustment was predicted (positively) by family harmony. And occupational achievement was predicted positively by educational attainment and intellectual skill. Although the exact effect sizes varied somewhat for men and women, the same patterns held for both.

Particularly interesting here is that only one predictor factor (family harmony) was related to personal adjustment and that sociability was negatively related to intellectual skill and educational attainment. The authors speculate that "the finding that childhood sociability is negatively correlated with adult intellectual skill [might represent] a straightforward decision by the person to pursue excellence in interpersonal realms" (p 453).

Gross (1992) conducted a longitudinal study of 40 Australian children with IQs over 160. She compared the work the children were capable of doing based on standardized tests, with the level of work they were permitted to do in school and with teacher perceptions of the student's ability. She then compared the degree of fit between these measures witn self esteem as measured by the Coopersmith Self Esteem Inventory (Coopersmith, 1981). She found that those children who had been permitted to skip several grades, or whose

intellectual needs were otherwise being met in school, had much higher self esteem than those who were not. She also provides a number of brief case studies making the same point. It should be noted that Australian society in general, and schools in particular, are highly egalitarian in nature, with a predominant sentiment being the need to "cut down the tall poppies" (p. 92). It should also be noted that the children in this study were clearly amazingly gifted in terms of achievement as well as IQ, one of them, for instance, scored 710 on the math SAT at age 12. Another, when he entered kindergarten at age 4, taught himself to read upside down so that he could read to the other students while holding the book right side up for them.

Strengths and Weaknesses of Recent Studies

General Methodological

Janos et al. (1988) studied a group that was preselected not only for intellectual and cognitive skills, but for social ones as well. Although this limitation is entirely understandable, and even admirable, from the University of Washington's point of view, it does limit the external validity of the study.

This study has several strengths: There is a relatively large sample, considering the type of population; the variables were well operationalized, and measured in complementary ways; and the authors obviously had a good understanding of the problems and advantages of the subjects. As they acknowledge, it would have been better to use standardized questionnaires in addition to the questionnaire. The explanation of why this was not done is inadequate (it would have made the questionnaire too long).

By recruiting girls for the extreme math group for a longer period, and using extra effort to get certain groups to respond, Dauber and Benbow (1990) introduce a potential bias into their results. It would have been better, I believe, to either accept the low n of this group, or to continue recruiting and make great efforts for all groups.

Although alpha values are reported in the discriminant analyses, it is not mentioned that the use of p s with this sort of statistical analysis is dubious when certain assumptions (e.g. multivariate normality, equal covariance structures) are violated, as they likely are here (Klecka, 1980).

Betts and Neihart (1988) is a purely descriptive study, and, further, provides no data whatsoever. It is

based entirely on the authors' own experience. That this experience is extensive ameliorates but does not eliminate the problem.

Tomlinson-Keasey and Little (1990) fall into the very common error of spending more time dealing with statistical significance than with practical importance. Although they provide effect size statistics, they do not discuss the low percent of variance accounted for by the predictor variables. While percentage of variance explained may be biased downward as an effect size measure it should, nonetheless, be commented on, especially when there is such a large sample.

While Tomlinson-Keasey and Little (1990) has both the advantages and disadvantages of a large study, Gross (1992) has the advantages and disadvantages of a small one. While some statistic power is lost, this is made up for by the ability to examine each case in detail. While, as the Yiddish saying goes " 'for instance' is not proof", the case studies presented here are both more powerful and more memorable as indications of the perils of treating children as if they were equal when they clearly are not. When it is backed up by statistical analysis, it is even more powerful.

Life Span Developmental Approach

Janos et al. (1988) did not study, or at least did not report, on each individual's friendships over the four year period, but rather compared seniors with freshman at one point in time. The problems inherent in such a cross sectional design include the possibility of cohort effects, that is, it is possible that the difference is due, not to the fact that the seniors had been in college longer, but that they had entered and attended at a different time. To their credit, the authors note this problem, and recommend longitudinal studies to deal with it. Such cohort effects might occur if the prevailing attitude about the program changed, or if a certain class of EEP students were particularly nurturing of the younger EEP students; however, the cohort variable is not likely to be a serious threat to the validity of these results.

Other than age, no demographic variables on the subjects were reported. It is therefore impossible to say anything about possible culture effects, nor is there any indication that the authors considered this problem.

Context effects, on the other hand, are noted. It is clear that the authors recognize that the EEP is very conducive to good social and personality

development, both in the selection of the students and in the nature of the program itself. Although the authors do not suggest it, it would be interesting to compare the accelerated students with a similarly bright group of nonaccelerated students.

Thus, while Janos and his colleagues apparently are fully aware of the problems of embeddedness, they do not address them here. How would a similar group have fared in another environment? Although individuals are contributors to their own environments, they are not the sole contributors, and the contribution of the environment must also be acknowledged.

Dauber and Benbow (1990) does not fare well from a life span developmental perspective. Children were all of the same age, so no age or cohort effects can be analyzed. Demographic variables are missing, so culture effects, likewise, cannot be analyzed. The subject pool for the talent searches are not discussed, so it is unclear if the students were self-selected, parent-selected, or only criterion-selected. These three groups are likely to be different from each other in the relevant variables. Although the students were recruited over more than three years, there is no mention of possible differences due to time of recruitment. Further, the likely differences between

children in programs for the gifted, in accelerated programs, or in normal programs are not mentioned and cannot be analyzed.

One strength of this study is that it deals with a large subject pool from an extremely rare group. This allowed the use of statistical methods which confirmed the suspicions and results of earlier research, in that it was shown that, at least for this group on these measures, the extremely gifted are "worse off" in some sense, than their modestly gifted peers.

The above articles all take a rather nomothetic approach to the study of gifted children. A much more idiopathic approach is taken by Betts and Neihart (1988), and, from the life span perspective this is all to the good. In addition, the authors clearly take the life span perspective in many ways; they implicitly recognize that the child is embedded in the system, and that there are bidirectional relations between the child and other people in the environment. Indeed, their entire approach is one in which the most important variable is not how gifted the child is on some scale, but how well the child integrates his or her gifts, and how well he or she interacts with the environment to get it to supply those needs which are unmet.

The chief weakness of this article is, as mentioned above, its utter lack of any data. While these subtypes are interesting, and seem to resonate with the types of children that exist, this is no substitute for actual analysis. They provide few objective guidelines for determining which group a child is in, and, while they do offer some prescriptive guidelines, they do not offer any hints as tc what environments tend to produce the different types, or whether they are native traits. Further, they do not recognize these difficulties, but instead offer their scheme as if it had been proven to be an accurate diagnostic method. There is obviously a place for this sort of research, but it must be recognized as what it is, and not masquerade as what it is not.

Tomlinson-Keasey and Little (1990) chief flaws from a life span developmental perspective are its failure to deal with reciprocity and plasticity. Children affect their environment as well as being affected by it, but the authors seem to assume that parental and familial variables exert a one way effect on children. It seems likely to me that there are complex interaction effects going on here, and that this model does not allow them to be examined. For example, it seems somewhat strange that intellectual

determination does not predict educational attainment, but it is likely that there are interaction effects with sociability and parental education, at a minimum. Even more surprising is the failure of sociability to predict personal adjustment, but, again, there may be interaction effects with family harmony.

(NB Given the complex statistical analyses performed, and my lack of knowledge of structural equation modelling, it is at least possible that the above critiques misrepresent the article).

Plasticity is not dealt with well. Given the large numbers of questionnaires, it is disappointing that the authors chose to bifurcate them into two sets. This represents a loss of data similar to that of turning an interval scale into an ordinal one. It would be profitable to analyze the data across the multiple observations at different ages. Further, while some explanation of the choice of 1940 as a dividing point is given, the age of 30 is not some magical point at which development stops and maturity begins. Development continues across the entire life span, and, especially given the unusual nature of this population, it seems improper to deny this.

Gross (1992) is clearly very much in the life span developmental tradition. In particular, it deals

perspective, it is a trove of data that is begging to be mined. This is especially so because extensive demographic information is available for the participants, and because it studies people from a cohort that is quite different in many respects from current ones. Thus, not only would the analyses be interesting in their own right, they would also be valuable as comparisons to more recent studies.

The second avenue is to study gifted children today more extensively and from a life span perspective. This is made difficult not only by the demands of the perspective, but by the rareness of the group. Nonetheless, it would be valuable to study several groups (however small) over a long period of time. One advantage of studying rare populations is that it permits more intensive observation of each case, and this fits in quite well with the life span perspective.

From a practical point of view, the study of the extremely gifted can not only have benefits for the subjects themselves and the population from which they come, but for society as a whole. The very gifted are, not surprisingly, disproportionately represented among leaders in a wide variety of fields. However, this also implies that the potential given up when one of these children falls by the wayside is equally great.

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