

The Impact of Giftedness on Psychological Well-Being: What Does the Empirical Literature Say?

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There is evidence to support two contrasting views about the psychological well-being of gifted children; that giftedness enhances resiliency in individuals and that giftedness increases vulnerability. There is empirical and theoretical evidence to support both views. It is clear that giftedness influences the psychological well-being of individuals. Whether the psychological outcomes for gifted children, adolescents, and adults are positive or negative seems to depend on at least three factors that interact synergistically: the type of giftedness, the educational fit, and one's personal characteristics.

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There is a long history of interest in how giftedness affects psychological well-being (Berndt, Kaiser, & Van Aalst, 1982; Eysenck, 1995; Freeman, 1983; Hollingworth, 1942; Parker & Mills, 1996; Ramaseshan, 1957; Reynolds & Bradley, 1983; Richards, 1989; Strang, 1950; Watson, 1965). During the last 50 years, two conflicting views prevailed. The first is that gifted children are generally better adjusted than their nongifted peers; that giftedness protects children from maladjustment. This view hypothesized that the gifted are capable of greater understanding of self and others due to their cognitive capacities and therefore cope better with stress, conflicts and developmental dysynchrony than their peers. Studies supporting this view report that gifted children demonstrate better adjustment than their average peers when measured on a variety of factors (Baker, 1995; Jacobs, 1971; Kaiser, Berndt, & Stanley, 1987; Neihart, 1991; Ramaseshan, 1957; Scholwinski & Reynolds, 1985).

The second view is that gifted children are more at-risk for adjustment problems than their nongifted peers, that giftedness increases a child's vulnerability to adjustment difficulties. Supporters of this view believe that gifted children are at greater risk for emotional and social problems, particularly during adolescence and adulthood. Their hypothesis is that the gifted are more sensitive to interpersonal conflicts and experience greater degrees of alienation and stress than do their peers as a result of their cognitive capacities.

Historically, one view prevails over the other. In the late 1800's, it was widely accepted that giftedness increased vulnerability (Lombroso, 1889). However, this view was later traded for the notion that the gifted are better adjusted when Terman and his associates' (1925, 1935, 1947) longitudinal research suggested that people of high ability exhibited less incidence of mental illness and adjustment problems than average. In 1981, a gifted high school student named Dallas Egbert killed himself. His highly publicized suicide increased awareness that gifted children can have psychological difficulties, that they are not immune to problems. People no longer assumed that the gifted were superior in their psychological functioning. The phrase, "social and emotional needs of the

gifted" was coined at this time. There was a surge of research attempting to measure the adjustment of gifted children (Berndt, Kaiser, & Van Aalst, 1982; Freeman, 1983; Janos, Marwood & Robinson, 1985; Lajoie & Shore, 1981; Leroux, 1986; Prentky, 1980; Reynolds & Bradley, 1983; Richards, 1989; Scholwinski & Reynolds, 1985; Tomlinson-Keasey & Warren, 1987). Suicide, delinquency, anxiety, and depression were some of the specific factors investigated in gifted populations during this period.

During the nineties, the debate continues regarding whether gifted people are more or less at-risk than their nongifted peers. Interestingly, there is research support for both views. How then, do we reconcile them? What can we say about the impact of giftedness on psychological well-being?

Researchers are increasingly examining smaller and smaller pieces of the gifted experience (Baker, 1995; Cross, Cook & Dixon, 1996; Dixon & Scheckel, 1996; Gust & Cross, 1997; Hewitt, Flett, & Ediger, 1996; Jackson, 1998; Jamison, 1989, 1993; McCallister, Nash, & Meckstroth, 1996; Parker & Mills, 1996; Rothenberg, 1990; Richards, 1989). Investigators employ a variety of approaches to evaluate the impact of giftedness on children's adjustment. Some examined global measures of adjustment such as self concept. Many measured specific factors known to be associated with either positive or negative adjustment such as depression, anxiety, delinquency, or social coping. The aims of this article are to highlight the research that supports these contrasting views and to suggest ways to reconcile the paradox.

Giftedness and Global Measures of Adjustment

Many writers concluded that high ability children are at least as well, if not better, adjusted than other children (Colangelo & Zaffrann, 1974; Gallucci, 1988; Grossberg & Cornell, 1988; Howard-Hamilton & Franks, 1995; Nail & Evans, 1997; Olszewski-Kubilius, Kukieka, & Krasney, 1988; Parker, 1996; Ramaseshan, 1957; Witty, 1955). Adjustment refers to an individual's pattern of responding to environmental demands. Persons with positive adjustment are able to cope effectively with the demands of life. Persons with negative adjustment have maladaptive coping strategies or lack enough coping skills to deal effectively with stress. The finding that high ability (typically defined as high IQ) individuals demonstrate superior adjustment is supported by empirical research (Freeman 1979; 1983; Grossberg & Cornell, 1988; Kaufmann, 1981; McCallister, Nash, & Meckstroth, 1996; Metha, McWhirter, 1997; Neihart, 1991; Reynolds & Bradley, 1983; Scholwinski & Reynolds, 1985; Witty, 1951; 1955). For example, Freeman found no differences in rates of emotional deviance when she compared 70 high ability children with two matched control groups. When Kaufmann (1981) studied Presidential Scholars, she observed that high ability subjects in her study rated themselves higher on positive personality traits than did average

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ability subjects. Grossberg and Cornell (1988) also found a positive correlation between high intelligence and adjustment.

Early research on psychological well-being used broad measures of personality or behaviors such as the Rorschach, the MMPI, or a behavior checklist. For example, Ramaseshan (1957) compared the social and emotional adjustment of gifted students with a normative group on the Washburne Social Adjustment Inventory and a five-point teacher rating scale. Ramaseshan asked teachers to rate all subjects on a five point scale for the following traits: Personality, Responsibility, Adjustment, Initiative, Work Habits, Cooperation, Attendance, and Social Tendency. The gifted group was shown to be superior as compared to the norms predicted for social adjustment on the Washburne. She concluded, "The gifted and the average are separate groups. The gifted give better evidence for social adjustment" (p. 91). However, Ramaseshan (1957) did not explain how subjects for the gifted sample were originally screened. It is likely that they were originally nominated by teachers which probably biased the sample.

Welsh (1969) used the MMPI and the Adjective Checklist to measure adjustment of more than 1000 high ability adolescents who attended the Governor's School of North Carolina. There was no tuition fee for the program so his results were not confounded by socioeconomic factors, as is often the case in studies done with summer programs. However, the selection criteria for the governor's program likely excluded any child who manifested behavioral or emotional problems. Welsh found no indicators of deviance in the sample.

Gair (1944), Gallagher and Crowder (1957), Mensh, (1950) and Jacobs (1971), each studied the psychological well-being of high ability children by analysis of Rorschach responses. Gair determined that his adolescent subjects showed better emotional adjustment and greater maturity of personality than same-age peers of average intellectual ability. However, subjects for his study were initially selected via teacher recommendations which may have precluded any distressed students from participating. Jacobs (1971) concluded that gifted kindergartners demonstrated greater awareness of self. "The gifted children's greater utilization of color supports the conclusions from the F% factor that the gifted demonstrate greater awareness of self" (p.198). In addition, his results indicated that personality development of the gifted subjects was advanced over that of the nongifted sample he included. He stated that the difference was not a qualitative one, but rather a quantitative difference in that the personality development of the young gifted child is more similar to that of an older child.

More recent research continues to examine global measures of adjustment. Howard-Hamilton and Franks (1995), for instance, administered the Ego Identity Scale (EIS) to 167 gifted high school seniors and observed that EIS scores overall were above normative mean scores. They concluded, "The results from this study show that these students are not only functioning at an elevated intellectual level, but are successfully coping with adolescent psychosocial growth and development" (p. 190).

Cornell (1989) compared the adjustment of 482 gifted children, grades 5-11 whose parents used the label, gifted, with those whose parents did not. Subjects were enrolled in a summer enrichment program in Virginia. Cornell administered the Harter Self-Perception Profile for Children, sociograms, and the Revised Children's Manifest Anxiety Scale, and found that use of the gifted label was negatively correlated with indicators of adjustment. In other words, children whose parents used the gifted label were more likely to report adjustment dif-

iculties than children whose parents did not use the label. Cornell's results also indicated that adjustment was not related to educational placement, cognitive abilities, or achievement and supported the idea that the gifted are a diverse group when it comes to psychological well-being.

Gallucci (1988) administered the Children's Behavior Checklist (CBCL) to 90 gifted children with IQ 135 or more who were participants in a summer enrichment program. The CBCL is widely used in educational and clinical settings to obtain a global assessment of adjustment in children. Overall, results fell within normal limits of the instrument, and gifted children with IQ's above 150 did not show greater levels of psychopathology. This latter finding is of particular interest given the widely held belief that highly gifted children are at-risk for more social and emotional difficulties than are moderately gifted children. Of course, Gallucci's study is limited by the use of summer enrichment participants. It is possible that children with more severe difficulties are not referred for such programs or are not admitted.

Nail and Evans (1997) compared 115 gifted adolescents with 97 nongifted students from high schools in Atlanta on the Self-Report of Personality (SRP) of the Behavioral Assessment System for Children (BASC). One of the significant differences between the two groups was that the gifted showed fewer indicators of maladjustment. Both groups, however, yielded scores that fell within normal limits of test norms. The gifted subjects were volunteers from the gifted programs while the nongifted were randomly assigned from English classes so it is likely that the gifted group does not accurately represent the total pool of identified gifted students.

These and other studies of global measures of adjustment help illustrate the multidimensionality of psychological well-being. To improve our understanding of the impact of giftedness on well-being, it is more useful to examine specific dimensions of adjustment.

Giftedness and Self-Concept

Self-concept is the collection of ideas one has about oneself, an essential component of what is usually called personality. The development of self-concept is a cognitive task, changing as an individual's cognitive capacities change over time. It is widely regarded as being directly related to adjustment and psychological health (Bee & Mitchell, 1984; Weiner, 1982).

There have been numerous attempts to measure the self-concepts of gifted children. All studies were conducted with academically or intellectually gifted youth who were identified by their performance at or above two standard deviations on a measure of IQ or academic achievement. The results of these studies are mixed.

Some studies concluded that there are no differences between the self-concepts of gifted and nongifted children (Bracken, 1980; Hoge & McSheffrey, 1991; Maddux, Scheiber, & Bass, 1982; Tong & Yewchuk, 1996). Other studies demonstrated that intellectually or academically gifted children report more positive self-concepts (Ablard, 1997; Chan, 1988; Colangelo & Pflieger, 1978; Janos, Fung & Robinson, 1985; Milgram & Milgram, 1976), and a few found lower self-concepts for gifted students (Coleman & Fults, 1982; Forsyth, 1987; Lea-Wood & Clunies-Ross, 1995).

Ablard (1997) administered the Adjective Checklist to 174 academically gifted eighth grade students and found that they demonstrated more positive self-confidence than the nor-

mative group on this instrument. Colangelo and Pflieger (1978) found academically gifted students had higher academic self-concepts than nongifted high school students. Chan (1988) concluded that intellectually gifted students in upper primary grades in Australia had higher measures of general self-worth, as measured by the Harter's Perceived Competence Scale for Children, than did the nongifted students.

In contrast, Bracken (1980) found no differences in self-concept measures among gifted students when he compared gifted, regular and French immersion students in Canada. Le-Wood and Clunies-Ross (1995) administered the School Form of the Coopersmith Self-Esteem Inventory to 81 gifted and 77 nongifted junior high girls near Melbourne, and observed that the nongifted students scored significantly higher in total and social self-esteem measures than the gifted at all age levels.

Quite a few studies compared the self-concepts of gifted children in different educational placements (Coleman & Fults, 1985; Karnes & Wherry, 1981; Kolloff, 1989; Maddux, Scheiber, & Bass, 1982; McQuilkin, 1981; Vaughn, Feldhusen & Asher, 1991). Results of these studies are also mixed, but do support the idea that the type of educational placement affects a gifted child's self-concept.

For example, several studies concluded that students in full time, segregated gifted classrooms have lower self-concepts or lower perceived competence than those enrolled in part-time options (Chan, 1988; Coleman, & Fults, 1985; Feldhusen, Sayler, Neilsen & Kolloff, 1990; Kolloff, 1989; Karnes, & Wherry, 1981).

However, in their meta analysis and review of the research on the effectiveness of nine pull-out programs, Vaughn, Feldhusen, & Asher (1991) concluded that self-concepts were not affected, positively or negatively, by program placement. They only investigated studies that had control groups and used true quasi- or experimental design.

It is impossible, then, to make any generalizations regarding the self-concepts of gifted children because it is clear from more than a dozen studies that numerous factors affect one's self-concept. Also, self-concept changes with developmental levels, making it impossible to generalize findings with one age group to other age groups. The research seems to suggest that it is not useful to assess self-concept as a criterion to compare gifted children's psychological well-being; there are too many confounding variables, making generalizations very difficult. We need to consider other criteria.

Depression, Anxiety, and Suicide

During the 80's and 90's there began a trend to examine specific indicators of positive adjustment rather than global measures of adjustment in gifted children. Several investigators attempted to examine psychological well-being in gifted children by measuring specific variables known to correlate with psychological health and illness: depression, anxiety and suicide (Baker, 1995 ; Bartell & Reynolds, 1986; Berndt, Kaiser, & Van Aalst, 1982; Gust & Cross, in press; Jackson, 1998; Kaiser & Berndt, 1985; Kaiser, Berndt & Stanley, 1987; Neihart, 1991; Parker, 1996; Reynolds & Bradley; 1981; Scholwinski & Reynolds, 1983).

The literature on depression does not support a correlation between high IQ and depression among children and adolescents (Mash & Barkley, 1996). All empirical studies examining depression among gifted children have found gifted students to exhibit levels of depression similar to, or lower than their nongifted peers (Baker, 1995; Bartell & Reynolds, 1986;

Berndt, Kaiser & Van Aalst, 1982; Kaiser & Berndt, 1985; Kaiser, Berndt, & Stanley, 1987; Neihart, 1991; Parker, 1996). There is no empirical support for higher levels of depression among gifted children and adolescents.

Kaiser, Berndt, and Stanley (1987) measured symptoms of depression among high-ability adolescents. They drew their sample of 248 junior and senior high school students, ranging in age from 14-17 from those who attended the Governor's School of South Carolina, a select summer program. Students enrolled in this program were ranked at or above the top 5% of their class or had attained equivalent scores on standardized tests of achievement. The investigators administered The Multiscore Depression Inventory (Berndt, 1986) and concluded that the high ability adolescents did not report any more depression than their peers, but 14% of their sample did report moderate levels of depression, as is typical of all adolescents. Since the subjects came from a select summer program, however, it is very possible that gifted teens with significant levels of depression or other emotional problems already had been screened out.

Neihart (1991) compared gifted junior high students with average students on standardized, objective measures of depression and found no differences among groups. Three groups of 30 adolescents were administered the Multiscore Depression Inventory (MDI): high-ability youth who were placed in gifted programs, high-ability youth who had not been placed in gifted programs, and average-ability youth. Neither high- nor average- ability children demonstrated symptoms severe enough to cause concern or require intervention. In addition, when significant differences did arise between scores of high ability and average ability adolescents, the differences were in the direction of positive mental health for the high ability group.

Jean Baker (1995) administered the Reynolds Adolescent Depression Scale (RADS) and the Suicidal Ideation Questionnaire (SIQ) to 58 moderately academically gifted students (top 5% class rank or earning total score of 600 or less on SAT at age 13), 56 average students (middle class rank) and 32 exceptionally gifted (total score of 900 or more on SAT at age 13) from midwestern junior high and high schools. "The major finding from this study is that academically able and exceptionally able students are not distinguishable from average students by differences in levels of depression or suicidal ideation" (p. 222). Baker acknowledged that she may have undersampled distressed children in this study because of the parental consent requirement, but she did not think selection bias influenced her results. However, she did stress that her study evaluated depression and suicidal ideation among highly achieving students from schools with gifted programs in place. Different results might be expected from samples with students who are not so high achieving.

At one time there was speculation that the gifted are overrepresented among suicide attempters (Delisle, 1982; 1986; 1990; Lajoie & Shore, 1981). Delisle stated that perfectionism, fear of failure or success, and social isolation may be predilections leading to suicide among gifted adolescents. Lajoie and Shore (1981) reviewed the literature linking high ability and suicide and concluded that there may be some link between the two. Grueling and Deblassie (1980) stated that suicide attempts are most prevalent among females under twenty with an above average IQ. Hayes and Sloat (1990) observed that 8 out of 42 reported incidents of suicidal gestures in 69 schools involved academically gifted students. There is no clear evidence, however, that gifted youth are overrepresented in the numbers of suicidal teens (Dixon &

Scheckel, 1996; Gust & Cross, in press). In a study mentioned previously, Baker (1995) found no differences in suicidal ideation among moderately gifted, highly gifted, and average adolescents. There is clear evidence, however, creatively gifted adults, writers in particular, commit suicide at rates higher than the general population. This finding is discussed in more detail in a later section.

Personality theorists have suggested that management of anxiety plays a primary role in positive adjustment (Dollard & Miller, 1950; Freud, 1962; Sullivan, 1953). Dirkes (1983) suggested that anxiety might be more prevalent among gifted children. "Although all children are faced with anxiety, the gifted must often deal with it at younger ages than other children, and with a keener sense of the possibilities open to them" (p.70). She added that gifted children's anxiety may be proportional to the acceptance they receive for their unique abilities and to the coping skills they can use. She further suggested that this anxiety may accumulate and become more manifest during adolescence.

At adolescence, however, many of these gifted students relieve pressures through withdrawal or through overt rejection of adult values. When nothing but the best is good enough, the highest of goals is established whether or not it is appropriate for individuals: the need to be class valedictorian, and perceived entrance requirements at the only college acceptable (p. 68).

However, empirical research has not demonstrated that anxiety is a greater problem for gifted children than it is for children who are not gifted. In fact, there is empirical evidence that intellectually or academically gifted children experience lower levels of anxiety than their nongifted peers.

For example, Reynolds and Bradley (1983) conducted one of the few large scale studies that involved a comparison group. They evaluated 465 gifted children ranging from grades 2 through 12 and compared them to a random sample of 329 average ability children. Using the Revised Children's Manifest Anxiety Scale (RCMAS) (Reynolds & Richmond, 1985), they found a statistically significant difference in anxiety scores between the two groups, with the gifted group earning lower scores on every scale. They concluded that gifted children as a group experience emotional problems less frequently than their average ability peers and that existing problems are less severe for the gifted group.

Scholwinski and Reynolds (1985) expanded upon this study and tested more than 5000 gifted and average ability children between the ages of 6 and 19 with the RCMAS. They sampled all geographic regions of the United States and selected subjects from urban as well as rural and inner city schools. Out of the total sample, 584 children were identified as gifted (IQ 130 or more). In their investigation, the higher IQ subjects demonstrated significantly lower levels of anxiety than their average IQ peers. Both the Reynolds and Bradley (1983) and Scholwinski (1985) studies were limited in that the gifted children were originally identified through teacher nominations, perhaps biasing the sample against children with emotional or behavioral problems. Also, since scores were summed for all age ranges, it is not possible to determine whether there were significant differences in adjustment among age groups. However, these studies tend to support the view that intellectually gifted children experience superior psychological adjustment.

In the study by Neihart (1991) mentioned earlier, levels of anxiety among high-ability junior high students and average students were also compared using the Revised Children's Manifest Anxiety Score (RCMAS). She observed no signifi-

cant differences in anxiety levels among high-ability students who were in gifted programs and those who were not and average-ability students.

Derevenksy and Coleman (1989) compared the fears of 70 gifted children, ages 8 to 13, (IQ at least 130) with those of children with average intelligence. Subjects were asked to respond in writing to the question, "What are the things to be afraid of?" They concluded that the gifted children have realistic fears and "...their fears closely resemble those of older 'normal' children" (p. 67). The authors also noted significantly different results across age groups, reflecting developmental differences.

Only one empirical study found gifted students to have significantly *higher* levels of anxiety than regular students. Tong and Yewchuk (1996) administered the Piers-Harris Children's Self-Concept Scale to 39 academically gifted students and 39 nongifted students in a Canadian high school. The gifted group yielded significantly higher levels of anxiety than the nongifted group. This finding may be different from the findings of all other studies because Tong and Yewchuk's subjects were high school students. All other studies of anxiety either focused on younger children or aggregated their results across age groups. Perhaps anxiety among gifted students does dramatically increase in high school.

The above studies suggest that there are developmental differences in anxiety levels among academically or intellectually gifted students and that educators can expect to observe depressive symptoms and suicidality in these students at rates similar to their nongifted peers. This research also refutes the notion that intellectually gifted students are more at-risk. In the future, studies need to be done with larger samples and with children who are gifted in domains other than intellectual or academic.

Giftedness and Social Competence

Strategies people use to cope with feeling different and to negotiate social relationships are one indicator of psychological well-being. Peer relations and social competence are two factors that are frequently evaluated when efforts are made to get a general picture of a child's psychological adjustment. It is no surprise, then, that many investigators have attempted to understand a gifted child's adjustment by measuring their social status, social coping skills, or perceived social competence (Barnett & Fiscella, 1985; Buescher & Higham, 1989; Chan, 1988; Cross & Coleman, 1988; 1995; Dauber & Benbow, 1990; Galloway & Porath, 1997; Janos, Fung & Robinson, 1985; Janos, Marwood & Robinson, 1985; Janos & Robinson, 1985; Lupowski, 1989; Swiatek, 1995). Some studies found the gifted to be advanced in their social adjustment and development, and other studies observed certain subgroups of gifted students to have more difficulties socially. Hence, empirical research indicates that the gifted are a diverse group when it comes to social competence. As the following studies illustrate, whether gifted students have the social skills necessary to cope with the demands in their lives appears to depend on additional factors such as their specific domain of talent, their degree of giftedness, and their self-perceptions or other personal characteristics.

Barnett and Fiscella (1985) compared 15 intellectually (IQ >130) gifted preschool children with 20 average intelligence children on dimensions of play behavior. They found that the gifted sample exhibited significantly more prosocial behavior. The gifted children interacted more cooperatively and demonstrated more sharing of playthings than did the

average children. In this study gifted children demonstrated advanced social skills.

Cross, Coleman, and Stewart (1995) compared two groups of high ability teenagers who attended Tennessee Governor's Schools. They compared 94 students who reported themselves as *similar* to peers and 379 who reported themselves as *different* from peers. Subjects responded to a 75-item questionnaire and were asked to indicate how they would respond in each of three scenarios where the potential for being stigmatized existed. The authors found that gifted students vary considerably in how different or similar they feel to their nongifted peers and that regardless of these feelings of difference, both groups indicated they would use a variety of coping strategies in potentially stigmatizing situations. There were significant differences between the two groups in responses to two of the three scenarios. Those who reported feeling *different* were more likely to use truth telling as a strategy than were those who reported feeling the *same*. "It is not clear at this time how personal characteristics of the subjects influence self-perceptions and behaviors. It does, however, make a case for the existence of psychosocial developmental differences among gifted students" (p. 185).

Dauber and Benbow (1990) compared highly gifted and moderately gifted adolescents (mean age 13.7) on measures of social relations and found significant differences. Subjects were identified as gifted or average by scores on the SAT. The highly gifted sample included approximately 200 students who scored at least a 700 on the SAT math, and about 100 students who scored at least a 630 on the SAT verbal. The moderately gifted sample included approximately 100 students whose combined score on the SAT was 540. Subjects completed a lengthy questionnaire with items relating to personality and social relations. The authors found significant differences between verbally and mathematically precocious students, the former reporting the lowest social status and lowest feelings of importance. The authors also observed that the moderately gifted subjects reported more favorable profiles overall than did the highly gifted group. "The extremely gifted students viewed themselves as more introverted, less socially adept, and more inhibited. The extremely gifted adolescents also reported that their peers saw them as much less popular, less socially active, less athletic, and less active in leading the crowd. Thus, extremely precocious students may be at greater risk for social problems than modestly gifted students" (p. 13).

Swiatek (1995) examined five coping strategies: denial of giftedness, fear of failure, extracurricular involvement; denying concern about possible social rejection, and minimizing the visibility of giftedness in 238 academically talented (top 1% in math or verbal reasoning) junior high students who were participants in a summer enrichment program in Iowa. Using the Affiliation subscale of the Adjective Checklist and the Social Coping Questionnaire, Swiatek found that verbally gifted students perceived themselves as less accepted than did the mathematically gifted students. Swiatek noted, "One serious limitation to the generalizability of the present study is the heterogeneous socio-economic status of the normative group and the relatively homogenous and affluent socio-economic status of the mathematically gifted sample" (p. 156).

Giftedness and Deviant Behavior

A few investigators have examined specific deviant behaviors as a means to determine the incidence and nature of

emotional stability among high ability children. For example, Ken Seeley (1984) examined delinquency. He conducted two years of research on juveniles involved with the court system to examine the relationship between superior ability and delinquency. From a sample of 100 youths involved with the courts, he looked for gifted teens and found the incidence of high ability to be lower than it is in the normal adolescent population. Other authors have examined delinquency and have drawn similar conclusions (Eisenman, 1991; Haarer, 1966; Hirwshi & Hindeland, 1977; Parker, 1979). Lajoie and Shore (1981) found average and bright delinquents to be similar in social and criminological characteristics.

Ludwig and Cullinan (1984) assessed the behaviors of 111 pairs of matched gifted and nongifted elementary students using the Behavior Problem Checklist (BPC), a 55-item rating scale. Teachers rated the subjects as no problem, a mild problem or severe problem for each behavior. Ludwig and Cullinan observed that gifted students had fewer behavior problems than their nongifted classmates, though the differences were not significant. Further, they noted that "...behavior problems of gifted children may be underestimated because poorly adjusted gifted students might be excluded a priori" (p. 39).

Giftedness and Psychiatric Disorders

Some researchers looked at the psychological well-being of gifted children and adults by examining the incidence of specific psychiatric disorders among gifted populations or the incidence of giftedness among populations with certain illnesses. Much of the empirical evidence for increased vulnerability among gifted persons comes from clinical studies that have taken this approach. In contrast to the previously mentioned studies which looked at children and adolescents, the majority of these studies focused on adults.

For example, the intellectual functioning of people with eating disorders was measured in a number of studies. Dally and Gomez (1979) observed that 90% of their adolescent eating disordered patients had an IQ of 130 or more. Rowland (1970) found that one third of the eating disordered patients in his study had IQs of 120 or above. These findings suggest that there is a correlation between high intellectual functioning and eating disorders. Other researchers, however, (Touyz, Beaumont, and Johnstone, 1986) have found that the IQs of eating disordered patients have not differed from the statistical distribution one finds in the population.

David Garner (1991) reviewed the literature on the relationship between eating disorders and intellectual functioning and argued that being gifted may render some people vulnerable to the patterns associated with eating disorders, especially during adolescence. Specifically, Garner suggests that early labeling of children as gifted may increase parental expectations for performance, contributing to perfectionist behaviors. Or, parents may overvalue their gifted child and intensify the child's expectations to meet parental needs, which can especially create problems during adolescence. Perfectionism, competitiveness, and high performance expectations from others are characteristics of the gifted that are viewed as possible contributors to the onset of eating disorders.

Gowan and Demos (1964) reported that 6.5% of 587 cases of maladjusted children seen at a clinic in a large metropolitan area had IQs of 130 or more on the Stanford-Binet Intelligence Scale. This percentage is double what one would expect given the distribution of the gifted within the population. However,

this difference could reflect a selection factor. For example, it may be that the parents of gifted children are more likely to refer their children for professional assistance than other parents.

Parker (1996) found mathematically gifted students yielded scores significantly lower than the normative group on all subscales of the Brief Symptom Inventory (BSI) except the Obsessive-Compulsive scale. Subjects were in grades 7-9 and tended to come from affluent, well educated families. Parker further compared moderately gifted (SAT scores 500-690) with highly gifted (SAT scores above 700) and found no significant differences.

A large number of studies examined the relationship between artistic giftedness and mood disorders in adults (Feldman, 1989; Greenacre, 1957; Jamison, 1993; Lowenfeld, 1941; Niederland, 1976; Panter, Panter, Virshup and Virshup, 1995; Pickford, 1981; Richards, 1981; Rothenberg, 1990). Mental disorders in which the primary feature is a mood disturbance include major depression, dysthymia and bipolar disorder (also popularly known as manic-depressive illness). Results of these studies suggest that there is a significantly greater rate of depression, manic-depressive illness, and suicide in eminent creative adults, writers and artists especially (Andreasen, 1988; Jamison, 1993; Richards, 1981; Rothenberg, 1990). The incidence of mental illness among creative artists is higher than in the population at large. Some studies link creativity with bipolar disorders specifically (Andreasen, 1988; Jamison, 1989; Richards, 1989). Observations from psychiatric studies suggest that disturbance of mood, certain types of thinking processes, and tolerance for irrationality are three characteristics common to both highly creative production and psychiatric problems.

Perhaps the most interesting finding from clinical studies is that there are similarities in the thought processes of manic, psychotic, and highly creative people (Prentky, 1980; Rothenberg, 1990; Rothenberg & Burkhardt, 1984). Specifically, Rothenberg (1990) compared the cognitive processes of persons with psychotic disorders with those of creatively gifted writers and concluded that translogical types of thinking characterize both psychotics and highly creatives. Translogical thinking is a type of conceptualizing in which the thinking processes transcend the common modes of ordinary logical thinking.

Andreasen, Stevens, and Powers (1975) investigated a conceptual overinclusiveness (i.e. the tendency to combine things into categories that blur conceptual boundaries) in a sample of writers, manic depressives and schizophrenics. They found that the conceptual styles of only the first two groups were similar.

Kay Jamison's research (1989; 1993) also supports the idea that there is a cognitive link between creativity and psychopathology. She noted that many of the cognitive changes that characterize mania and hypomania are also typical of creativity: restlessness, grandiosity, irritability, intensified sensory systems, quickening of thought processes, and intense feeling.

Discussion

The impact of giftedness on psychological well-being has often been examined as a dichotomous question. "Are gifted children more, or less at-risk for psychological problems than their nongifted peers?" The research reviewed here suggests that neither conclusion can be drawn for gifted children. Rather, the research suggests that the psychological well-being of a gifted child is related to the type of giftedness, the educa-

tional fit, and the child's personal characteristics such as self-perceptions, temperament and life circumstances.

When global measures of adjustment are used, overall results suggest that gifted children are at least as well adjusted than their nongifted peers (Gallucci, 1988; Howard, Hamilton & Franks, 1995; Nail & Evans, 1997). There is little evidence of psychological risk among academically or intellectually gifted children when global measures of adjustment are examined. For example, results of studies investigating self-concept of gifted children are mixed and difficult to generalize because self-concept changes with development. The studies do seem to suggest that educational placement, or the educational fit influences the adjustment of the child. Specifically, the findings of several studies demonstrated that gifted children in full time, segregated classrooms have either lower self-concepts or lower perceived competence than do gifted students in part time options (Chan, 1988; Coleman & Fufts, 1985; Feldhusen, et al, 1990; Kolloff, 1989; Karnes & Wherry, 1981).

When specific factors associated with maladjustment are investigated, results of empirical studies are more consistent and find academically or intellectually gifted children to be at least as well adjusted as their nongifted peers. For instance, there is no empirical support for the belief that gifted children experience depression or suicidal ideation more often than do nongifted children. Rates of depression and suicide appear to be similar for gifted and nongifted children (Baker, 1995; Bartell & Reynolds, 1986; Berndt, Kaiser & Van Aalst, 1982; Kaiser & Berndt, 1985; Kaiser, Berndt & Stanley, 1987; Mash & Barkley, 1996; Neihart, 1991; Parker, 1996). Also, most of the empirical evidence suggests that levels of anxiety are similar among average children and intellectually gifted children (Derevensky & Coleman, 1989; Neihart, 1991; Reynolds & Bradley, 1983; Scholwinski & Reynolds, 1985). Only one empirical study found higher levels of anxiety among gifted students (Tong & Yewchuk, 1996). The available research on anxiety, depression and suicide in academically or intellectually gifted students refutes the notion that these children are at risk for problems with adjustment.

In contrast, when social competence is examined in the gifted, they appear to be a very diverse group. Subgroups within the population emerge and we begin to see relationships between social coping and the domain or degree of ability, or the child's personal characteristics. For example, there is evidence that the social adjustment of verbally precocious students is more negative than that of mathematically precocious students (Dauber & Benbow, 1990; Swiatek, 1995). And gifted students who report "feeling different" from their peers also report more negative perceptions of their social adjustment (Cross, Coleman, & Stewart, 1995; Janos, Fung & Robinson, 1985).

It is when the number of high ability persons with specific psychiatric disorders is assessed that the empirical support for the idea that gifted people are at risk for problems with emotional or social adjustment emerges. It is important to note that such studies were only conducted with adult populations. There is limited evidence, for example, of a relationship between higher IQ and eating disorders among adult clinical populations. There is however, compelling evidence for higher rates of mood disorders and suicide among creatively gifted writers and visual artists. There do appear to be psychological risks associated with creative giftedness and with the pursuit of exceptional artistic achievement among adults. However, there is no research available to indicate whether this association might exist among creatively gifted adolescents. Such research

is needed. We should not conclude that creatively or artistically gifted children are at-risk for social or emotional problems. It simply has not been investigated. It might be wise for teachers, counselors and parents to be aware that vulnerability might be associated with creative talent. Eysenck (1995) observed that the number of people making claims about the psychology of gifted children is greater than the number of people who bother to verify such claims. It is clear from the studies referenced here that there are some claims we should stop making. One is that highly gifted children (IQ above 160) are more vulnerable to social and emotional problems. The research does not support the broad conclusion that there's a level of IQ at which problems in adjustment significantly increase. Rather, it seems that there's a level of IQ at which it becomes very difficult to find appropriate educational services and it may be the lack of good educational fit that most often contributes to the difficulties some highly gifted children encounter (Baker, 1995; Dauber & Benbow, 1990; Gallucci, 1988; Gross, 1993; Hollingworth, 1942; Parker, 1996; Witty, 1955). Future research will need to control for educational placement when comparing the psychological well-being of highly gifted children in order to clarify the role of "fit".

We ought to put an end to advancing claims based on syllogisms. Syllogistic reasoning argues that if 'a' leads to 'b' and 'b' leads to 'c', then 'a' must lead to 'c' too. For example, one common syllogism argues that gifted children experience more stress as a result of being different, and high levels of stress are known to contribute to a wide variety of health problems, therefore gifted children must be prone to problems (Altman, 1981; Chen, 1980; Ferguson, 1981; Silverman, 1993; Webb, Meckstroth & Tolan, 1982). Another syllogism has to do with developmental dysynchrony or developmental gaps. Gifted children often exhibit differences in some domains of development. Developmental dysynchrony is believed to be an etiological factor in psychopathology (Peterson & Craighead, 1986). Therefore, it is argued, gifted children are at greater risk for psychopathology. There are other syllogisms related to perfectionism and feeling different. The relationships among these factors have not been shown to be linear. More importantly, claims made based on syllogisms have not been supported by research.

What do we know? Intellectually or academically gifted children who are achieving, and participate in special educational program for gifted students are at least as well adjusted and are perhaps better adjusted than their nongifted peers. These children do not seem to be any more at-risk for social or emotional problems. It is clear from the research that giftedness does influence psychological outcomes for people, but whether those outcomes are positive or negative seems to depend on several factors that interact synergistically. These factors are the type and degree of giftedness, the educational fit or lack thereof, and one's personal characteristics.

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