Feldman, D H *Beyond Universals in Cognitive Development* Norwood, New Jersey Ablex Publishing Corporation, 1980
Feldman, D H "The Mysterious Case of Extreme Giftedness" In H Passow (Ed) *The Gifted and The Talented Yearbook of the National Society for the Study of Education* Chicago University of Chicago Press, 1979, pp 335-351
Feldman, D H "Toward A Non-Elitist Conception of Giftedness" *Phi Delta Kappan*, 1979, Vol 60, pp 660-663
Gowan, J C and Olson, M "The Society Which Maximizes Creativity" *The Journal of Creative Behavior*, Vol 13, No 3, pp 194-210
Hollingworth, L S "The Development of Personality In Highly Intelligent Children" In Wayne Dennis and Margaret W Dennis (Eds) *The Intellectually Gifted—An Overview* New York Grune & Stratton, Inc , 1976, pp 89-98
Hollingworth, L S *Gifted Children—Their Nature and Nurture* New York The MacMillan Company, 1927
Kontos, S , Carter, K R , Ormrod, J E , and Cooney, J B "Reversing the Revolving Door A Strict Interpretation of Renzulli's Definition of Giftedness"—and the authors' exchange with Joseph S Renzulli and Steven V Owen in the same issue *Roeper View*, September, 1983, pp 35-42
O'Shea, H E "Friendship and the Intellectually Gifted Child" *Exceptional Children* Vol 26, No 6 (February, 1960), pp 327-335
Renzulli, J S *The Enrichment Triad Model A Guide For Developing Defensible Programs for the Gifted and Talented* Weathersfield, Connecticut Creative Learning Press, 1977
Renzulli, J S *What Makes Giftedness A Re-examination of the Definition of the Gifted and Talented* Ventura, California Ventura County Superintendent of Schools Office, May, 1979
Renzulli, J S "Will the Gifted Child Movement be Alive and Well in 1990?" *Gifted Child Quarterly*, Vol 24, No 1, Winter, 1980, pp 3-9
Robinson, H B , Roedell, W C and Jackson, N E "Early Identification and Intervention" In H Passow (Ed) *The Gifted and the Talented Yearbook of the National Society for the Study of Education* Chicago University of Chicago Press, 1979, pp 138-154
Rogers, C R "Toward A Theory of Creativity" In Sidney J Parnes and Harold F Harding (Eds) *A Source Book for Creative Thinking*, Charles Scribner's Sons, New York, 1962, pp 63-72
Simonton, D K "The Eminent Genius In History The Critical Role of Creative Development *The Gifted Child Quarterly*, Summer, 1978, Vol XXII, No 2, pp 187-195
Terman, L M "The Discovery and Encouragement of Exceptional Talent" *American Psychologist*, 1954, g, pp 221-230
Witty, P (Ed) *The Gifted Child* Boston D C Heath and Co , 1951

Vulnerabilities of Highly Gifted Children

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This article examines the unique vulnerabilities of children with extraordinarily advanced intellectual skills, and highlights the differences between highly gifted and moderately gifted children Problems of uneven development, perfectionism, adult expectations, intense sensitivity, self-definition, alienation, inappropriate environments, and role conflict are explored

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Good social adjustment, emotional maturity, and healthy self-concepts characterize the experience of many intellectually gifted children. Numerous studies have confirmed Terman's early finding that moderately gifted individuals tend to do well in school and to achieve success in later life (Gallagher, 1958; 1975; Hollingworth, 1942; Terman, 1925). Such life success is not automatic for the gifted, however, and depends to a great extent on environmental support. Even moderately gifted children are vulnerable to a variety of adjustment difficulties. As the degree of intellectual advancement increases, so does the child's risk of social maladjustment and unhappiness (Hollingworth, 1942; Terman, 1925; Terman & Oden, 1947; Tannenbaum, 1983).

Children with unusually advanced intellectual development are uniquely vulnerable. Moreover, studies throughout the country have begun to document the fact that extraordinarily gifted children exist, at least in some cities, in larger numbers than would be expected on the basis of the normal curve. Studies at the University of Washington (Roedell, Jackson, & Robinson, 1980; Robinson, 1980), at Johns Hopkins University in Baltimore (Stanley, Keating, & Fox, 1974; Keating, 1976), and at the University of Denver (Silverman, in preparation) have all identified significant subpopulations of highly gifted children.

The definition of extraordinary precocity differs from study to study. Some researchers cite IQs above 145 as indicating highly gifted abilities, while others reserve the label for children whose IQs exceed 165 or even 180. Some define extraordinary giftedness in terms of scores on other types of tests, such as the Scholastic Aptitude Test, or in terms of high level creative productivity. Whatever the definition, there is general agreement that highly gifted children are more susceptible to some types of developmental difficulties than are moderately gifted or average children. Areas of vulnerability include uneven development, perfectionism, adult expectations, intense sensitivity, self-definition, alienation, inappropriate environments, and role conflicts.

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Uneven Development

As Leta Hollingworth (1942) commented, it is difficult to have *the intelligence of an adult and the emotions of a child in a childish body* (p. 282). The gap between a child's advanced intellectual capability and more age-appropriate social and physical skills can lead to unrealistic expectations for performance. Young children become frustrated when their limited physical capabilities prevent the construction of the complex projects created in their extremely capable imaginations. Adults, expecting social maturity to match high level intellectual development, may label a highly articulate, logical child as a behavior problem when he or she exhibits an age-appropriate tantrum.

Even more damage can result when adults ignore a child's high level ability and focus instead of weaknesses in areas of slower development. A child's giftedness may even go unnoticed, eclipsed by behavior problems, physical weakness, or social immaturity. Whitmore (1980) gives the example of Bobby, with an IQ of 153, who spent a second year in the first grade as a result of his disruptive behavior and his failure to complete daily classroom work. A teacher's underestimate of a child's ability can trigger a rapid decline in self-esteem. Pringle (1970) found, for example, that most of the 103 bright children brought to a clinic because of general maladjustment had teachers who underestimated their ability. The most frequent symptom presented by these *able misfits* was a lack of confidence.

Perfectionism

Many gifted children exhibit an inner push toward perfection which drives them to set impossible goals for themselves. They use their extremely capable conceptual abilities to imagine ambitious and detailed products, and then direct their similarly well-developed critical thinking skills to the task of tearing down their own imperfect efforts to realize their ideal. As they learn to appreciate professional work in the arts and sciences, they set professional level standards for themselves, and become impatient with the skill development which must occur before they can achieve that proficiency. Years of hearing parents and teachers say *that's wonderful!* to projects that do not meet the child's own high standards leads to a distrust of feedback from those sources. A child who consistently receives an *A* without putting forth maximum effort ceases to value that *A* grade as a serious measure of performance.

This perfectionism has both positive and negative aspects. In a positive form, perfectionism can provide the driving energy which leads to great achievement. The meticulous attention to detail necessary for scientific investigation, the commitment which pushes composers to keep working until the music realizes the glorious sounds playing in the imagination, and the persistence which keeps great artists at their easels until their creation matches their conception all result from perfectionism. Setting high standards is not in itself a bad thing. However, perfectionism coupled with a punishing attitude towards one's own efforts can cripple the imagination, kill the spirit, and so handicap performance that an individual may never fulfill the promise of early talent.

The inner drive to be perfect leads many gifted children to perceive themselves as failures even when external evidence indicates high level success. It is in the child's reaction to this perceived failure that the danger lies. A series of studies by Carol Dweck and her colleagues on the differences between children who exhibit a sense of helplessness in the face of failure and those who demonstrate a sense of mastery help elucidate the question of why highly capable children might perceive themselves as inadequate.

In several studies (Diener & Dweck, 1978; 1980; Dweck, 1975; Dweck & Repucci, 1973), Dweck found that helpless children attribute their failures to stable factors, such as lack of ability, and their successes to unstable factors, such as effort or luck. Mastery-oriented children, on the other hand, attribute their successes to stable factors, such as ability, and their failures to unstable factors, such as effort or luck. When mastery-oriented children succeed, they interpret the success as diagnostic of their underlying ability. When they fail, they tend to concentrate on modifying their problem-solving strategies, rather than on analyzing reasons for failure (Diener & Sweck, 1978).

Helpless children, on the other hand, interpret failure as diagnostic of their perceived underlying lack of ability, and tend to give up, rather than to try a different strategy. Such children do not perceive success as evidence of high ability, but rather as the result of an easy task, teacher kindness, or blind luck. When their perfectionism interacts with a helpless orientation toward perceived failure, highly gifted children may exhibit lowered self-concepts and ineffective approaches to problem-solving. On the other hand, perfectionism coupled with a mastery orientation can lead to a high level of creative productivity.

Offering specific feedback on a gifted child's work, rather than global evaluations, can help direct the child's attention toward strategies for improvement without regard for *failure* or *success*. Feedback from professionals, obtained through mentor programs or special workshops, can be particularly valuable in helping a child understand the years of dedication required to become a creative professional.

Adult Expectations

The perfectionism of gifted children is frequently exaggerated by adults who constantly urge them to live up to their potential. Parents may overschedule their child with lessons and worthwhile activities, leaving no time to daydream or to play with ordinary toys. Teachers who observe the spark of high level talent pile on extra work, and never seem satisfied. Children in a departmentalized secondary school can feel torn apart by teachers urging increased performance in each subject area, without regard to the student's own interests or the pressures being applied by other teachers. *Work harder on your math,* says one teacher. *You have the ability to really push ahead. Work harder on your writing,* says another teacher. *You really have talent. Work harder on your social studies project,* says a third teacher. *You aren't even beginning to tap your real ability.* A multitalented child may well have the ability to excel at high levels in every subject area, but realities of time and the dictates of the child's own interest make *living up to your potential* in every area an impossibility.

Intense Sensitivity

The intense sensitivity and internal responsiveness characterizing many highly gifted individuals can intensify reactions to the ordinary problems of growing up (Silverman, 1983; Whitmore, 1980). By tuning in to a wide range of social cues during social interaction, a highly sensitive gifted child may perceive social rejection where it is not intended (Whitmore, 1980). Furthermore, sensitivity to society's injustice and hypocrisy leads many highly gifted children to feel despair and cynicism at very young ages.

Although heightened sensitivity to environmental and social cues may be a normal response for gifted children, Silverman (1983) points out that they may perceive their own intense inner experiences as evidence that something is wrong with them. Other children may ridicule a gifted child for reacting strongly to an apparently trivial incident, thereby increasing the child's feeling of being odd. Like perfectionism, intense sensitivity can have positive or negative effects, depending on the individual response.

Self-definition

The classic adolescent identity crisis may come earlier for highly gifted children whose intense analytical approach to life leads to early analysis of self. Their own perfectionism, coupled with inappropriate adult expectations, can make the process of identity formation particularly difficult for highly gifted children.

In addition, highly talented children often have the potential to succeed in a number of different fields. Deciding which area should engage their minds and talents can be an excruciating experience (Sanborn, 1979). Unsure about their ability to live up to their own expectations and the expectations of others, confused about the direction of their true talent, and worried about the ways in which they are different from average students while simultaneously fearing mediocrity—these are the dilemmas which face gifted students attempting to define themselves in a confusing and often hostile world.

Alienation

While moderately gifted children tend to be popular with their classmates, children with unusually high levels of ability sometimes have a more difficult time finding compatible peers (Gallagher, 1958). Hollingworth (1942) and O'Shea (1960) have suggested that problems of communication, starting in the preschool years, may be one root cause of the highly gifted child's involuntary isolation. A 3-year-old who expresses abstract ideas using the vocabulary of the average 6-year-old may not be understood by same-age peers. Four-year-olds who enjoy playing monopoly and checkers have difficulty finding same-age playmates with similar skills (Roedell, Jackson, & Robinson, 1980).

With their advanced conceptions of group organization, highly gifted children may develop an adult-like manner with others, and be accused of bossiness. When efforts to be accepted fail, a highly able child may withdraw from social interaction. One 4-year-old was diagnosed as emotionally disturbed by his preschool teachers because of his tendency to withdraw from social interaction. Worried, his parents enrolled him in a program for highly gifted children, where his friendly, outgoing manner demonstrated that his emotional disturbance had merely been a reaction to having no intellectual peers on his own level with whom to interact.

Children who withdraw early from social interaction may deprive themselves of the opportunity to learn needed social interaction skills. While intellectually advanced children frequently have advanced conceptions of the dynamics of social interaction, their good ideas may not translate into social behavior without the benefit of guided social experience in the company of true peers (Roedell, Jackson, & Robinson, 1980).

The social alienation of extraordinarily gifted children is exacerbated by the insistence of educators and parents that they spend most of their time in the company of chronological peers. The assumption that children of the same age constitute a true peer group only holds true for children of average development. The term peer does not, in essence, mean people of the same age, but rather refers to individuals who can interact at an equal level around issues of common interest (Lewis, Young, Brooks, & Michelson, 1975). Highly gifted children are not likely to find developmentally defined peers among their age-mates, and in fact many of them prefer older companions (Hollingworth, 1942; Silverman, in preparation). Given a choice, highly gifted children tend to form friendships with others of similar mental age (O'Shea, 1960).

For children whose development is highly uneven, true peers may vary depending on the activity. A child with extraordinary intellectual but average physical skills might have one set of peers for discussing literature or playing chess, and another set of peers on the soccer field. The potential social alienation of extremely able children can be avoided by special efforts to help such children find companions with similar interests and abilities. Unless such efforts are made, highly gifted children run the risk of being labelled different and strange by their agemates, and may internalize this designation and become eccentric social isolates. Ronald, a 5-year-old in a program for extraordinarily advanced children, explained these feelings well when he commented, *Do you know why Bill is my best friend? Because he's the only one who understands the kind of guy I really am.*

Inappropriate Environments

Highly gifted children experience increased vulnerability when they spend large portions of their time in inappropriate educational settings. The more a gifted child's abilities differ from the norm, the more inappropriate becomes the educational program offered in the regular classroom. A 7-year-old with the reasoning capacity of an 11-year-old, whose reading and math skills equal those of the average fifth grader, will find little useful activity in a regular second grade classroom. Even if the teacher presents new information, the instructional pace will be unbearably slow, forcing the child to practice endlessly skills mastered in less than half the time taken by the average student (Stanley, Keating, & Fox, 1974; Keating, 1976).

Many programs for gifted children also constitute inappropriate environments for the extraordinarily gifted child (Stanley, 1979). Part-time pullout programs only relieve the boredom of the regular classroom for a few hours per week. In some school districts, the content of the gifted enrichment class is not linked logically to the identification system. A mathematically brilliant youngster might be identified for such a program, for example, and be asked to spend his enrichment hours working on creative writing and art, with no attention paid to his interests and abilities in mathematics. Even when the child's abilities and the content of the program are linked, the learning pace of the program may be geared to the level of the moderately gifted child.

It is important to remember that a child with an IQ of 164 is as different intellectually from a child with an IQ of 132 as that child is different from the 100 IQ child. Forcing a child with an IQ of 164 to learn at the pace of the average child, or even the pace of the moderately gifted, is akin to placing an average child in a special education classroom and asking that his/her learning rate be slowed down to keep pace with the rest of the class. The frustration of highly gifted children forced to stifle their love of learning in inhospitable environments can result in withdrawal, behavior problems, or psychosomatic symptoms.

Role Conflict

The conflict between society's stereotyped expectations for certain age, sex, and racial groups and the highly gifted child's need to fulfill extraordinary individual potential can be severe. For example, in most junior high and high school settings, the macho image prevails. It is the football star who is the hero of the school, not the mathematics whiz. The desire to fulfill the role expectations for the adolescent male can dim a gifted young man's aesthetic appreciation for music or extraordinary ability in literature or mathematics.

The underrepresentation of minorities in mathematics and science courses at the secondary level has been attributed to a range of problems, including the lack of role models and the perception of mathematics as the domain of white males (Johnson, 1982). Highly gifted students from culturally different backgrounds face special conflicts in fulfilling individual potential without becoming alienated from their cultural heritage (Frasier, 1979). Peer pressure and the idea that academic excellence is reserved for the majority culture prevents many highly able minority students from enrolling in gifted programs or in advanced academic courses.

Highly gifted girls experience equally severe role conflicts. These girls, for example, are less likely than boys to take advantage of opportunities to accelerate their mathematics education, and in general are less likely to enroll in high level math and science courses (Fox, Brody, & Tobin, 1980). Role conflict for gifted girls stretches beyond math and science, however, to a basic

conflict between traditional conceptions of femininity and the inner drive to excel. In a 1978 study of gifted boys, it was found that only 18 percent of the boys expected their wives to have full-time careers, and 57 percent did not expect them to work after they had children. A companion study of highly gifted eighth grade girls revealed that 48 percent saw major problems in combining scientific careers with family responsibilities. In a study of highly gifted seventh graders, only 46 percent of the girls, but 98 percent of the boys expected to have continuous full-time careers (Fox, Tobin, & Brody, 1981).

In her work on the moral development of women, Carol Gilligan (1982) describes the developmental path which leads women to define morality in terms of care and responsibility towards others, so that even when a girl does aspire to a career, it may be for different reasons than are voiced by boys. One 11-year-old girl is quoted as saying, ... *I want to be some kind of a scientist or something, and I want to do things, and I want to help people... I think that everybody should try to help somebody else in some way, and the way I'm choosing is through science.* (p. 34) Gilligan asked women of varying ages, to describe their views of self and morality. From these interviews, she defines a feminine view of the world as comprised of a web of interconnections and contrasts this perspective with the male view of a world comprised of hierarchical relationships. As Gilligan explains:

> *The images of hierarchy and web, drawn from the texts of men's and women's fantasies and thought, convey different ways of structuring relationships and are associated with different views of morality and self. But these images create a problem in understanding because each distorts the other's representation. As the top of the hierarchy becomes the edge of the web and as the center of a network of connection becomes the middle of a hierarchical progression, each image marks as dangerous the place which the other defines as safe.* (p. 62)

Thus, Gilligan characterizes women's *fear of success* as essentially a fear of being alone at the top without a supporting network of equal relationships.

Conclusions

Obviously, not all highly gifted children suffer as a result of the vulnerabilities described above. No inherent quality of giftedness automatically dooms these individuals to social maladjustment or unhappiness. In most cases, problems for extremely able people arise from the discrepancy between their level of development and the expectations of society. As information about the needs of highly gifted children becomes more widespread, and society's expectations become more closely attuned to the realities of gifted development, the degree of vulnerability of these children will diminish.

Awareness, however, is not enough. Nurturing the development of highly gifted children requires a commitment to building support systems to help them come to terms with their prodigious abilities. Such support systems include appropriate educational programs; systematic affective education including social skills training and self-concept development; planned efforts in career counseling, academic counseling, and personal counseling; and supportive adults to act as role models, provide guidance, and offer understanding. Without these avenues of support, extraordinarily advanced intellectual abilities become a tremendous burden rather than the foundation for a creative and productive life.

REFERENCES

Diener, C I , & Dweck, C S An analysis of learned helplessness Continuous changes in performance, strategy, and achievement cognitions following failure *Journal of Personality and Social Psychology, 1978, 36,* 431-462

Diener, C I , & Dweck, C S An analysis of learned helplessness II The processing of success *Journal of Personality and Social Psychology,* 1980, *39,* 940 952

Dweck, C S The role of expectations and attributions on the alteration of learned helplessness *Journal of Personality and Social Psychology,* 1975, *31,* 674-685

Dweck, C S , & Repucci, N D Learned helplessness and reinforcement responsibility in children *Journal of Personality and Social Psychology* 1973, *25,* 109 116

Fox, L H *The problem of women and mathematics* New York, New York The Ford Foundation, 1981

Fox, L H , Brody, L , & Tobin, D (Eds) *Women and the mathematical mystique* Baltimore, Maryland Johns Hopkins University Press, 1980

Fox, L H , Tobin, D , & Brody, L Career development of gifted and talented women *Journal of Career Education,* 1981, *7,* 289 298

Frasier, M M Counseling the culturally diverse gifted In N Colangelo & R T Zaffrann (Eds), *New voices in counseling the gifted* Dubuque, Iowa Kendall/Hunt, 1979

Freeman, J *Gifted children* Baltimore, Maryland University Park Press, 1979

Gallagher, J J Peer acceptance of highly gifted children in elementary school *Elementary School Journal,* 1958, *58,* 465-470

Gallagher, J J *Teaching the gifted child* Boston, Massachusetts Allyn & Bacon, 1975

Gallagher, J J , & Crowder, T. The adjustment of gifted children in the regular classroom *Exceptional Children,* 1957, *23,* 306-312, 317-319

Gilligan, E *In a different voice* Cambridge, Massachusetts Harvard University Press, 1982

Hollingworth, L S *Children above 180 IQ, Stanford-Binet* Yonkers-on-Hudson, New York World Book, 1942

Johnson, J L *Blacks in mathematics The state of the art* Paper presented at the Equity in Mathematics Core Conference, National Council of Teachers of Mathematics, Reston, Virginia, February 19-21, 1982

Keating, D P (Ed) *Intellectual talent Research and development* Baltimore, Maryland Johns Hopkins University Press, 1976

Lewis, M , Young, G , Brooks, J , & Michelson, L The beginning of friendship In M Lewis & L A Rosenblum (Eds), *Friendship and peer relations* New York, New York Wiley, 1975

O'Shea, H Friendships and the intellectually gifted child *Exceptional Children,* 1960, *26,* 327-335

Pringle, M L K *Able misfits* London Longman, 1970

Robinson, H B The uncommonly bright child In M Lewis & L A Rosenblum (Eds), *The uncommon child* New York, New York Plenum, 1980

Robinson, N M , & Robinson, H B The optimal match Devising the best compromise for the highly gifted student In D Feldman (Ed), *New directions for child development Developmental approaches to giftedness and creativity* San Francisco, California Jossey-Bass, 1982

Roedell, W C , Jackson, N E , & Robinson, H B *Gifted Young Children* New York, New York Teachers College Press, 1980

Sanborn, M P Differential counseling needs of the gifted and talented In N Colangelo & R T Zaffrann (Eds), *New voices in counseling the gifted* Dubuque, Iowa Kendall/Hunt, 1979

Silverman, L K *Gifted education* St Louis Michigan C V Moseby, in preparation

Silverman, L K Issues in affective development of the gifted In J VanTassel-Baska (Ed), *A practical guide to counseling the gifted in a school setting* Reston, Virginia Council for Exceptional Children, 1983

Stanley, J C Identifying and nurturing the intellectually gifted In W C George, S J Cohn, & J C Stanley (Eds), *Educating the gifted* Baltimore, Maryland Johns Hopkins University Press, 1979

Stanley, J C , Keating, D P & Fox, L H *Mathematical talent Discovery, description and development* Baltimore, Maryland Johns Hopkins University Press, 1974

Tannenbaum, A H *Gifted children* New York, New York Macmillan, 1983

Terman, L M *Genetic studies of genius Mental and physical traits of a thousand gifted children* (Vol 1) Stanford, California Stanford University Press, 1925

Terman, L M , & Oden, M *Genetic studies of genius The gifted child grows up Twenty-five years' follow up of a superior group* (Vol 4) Stanford, California Stanford University Press, 1947

Whitmore, J R *Giftedness, conflict, and underachievement* Boston, Massachusetts Allyn & Bacon, 1980