Small poppies: Highly gifted children in the early years

Gross, M.
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This article by Miraca Gross is a classic on the development and needs of profoundly gifted children in infancy, toddlerhood and the preschool years. It discusses some of the hallmarks of extreme precocity in the very young. Other topics include identification and accommodation of these children.

Summary: Highly gifted children are frequently placed at risk in the early years of school through misidentification, inappropriate grade-placement and a seriously inadequate curriculum. Additional factors are their own early awareness, that they differ from their age-peers, and their consequent attempts to conceal their ability for peer acceptance. Teachers who have had no training or inservice in gifted education, and who are reluctant to use standardized tests of ability and achievement, may rely only on gifted behaviors to identify extremely high abilities in young children. This may compound the problem by ignoring early indicators of demotivation and underachievement. The very early development of speech, movement and reading in many highly gifted young children serves as a powerful predictor of unusually high intellectual ability. Parents of the highly gifted become aware of their children's developmental differences at an early age; yet parent nomination is under-utilized by primary and elementary schools, and information provided by parents regarding early literacy and numeracy in their children is often disregarded or actively disbelieved.

Let me share with you one of my earliest memories. The place is Edinburgh, the capital of Scotland, where I was born and grew up. I am three, perhaps four, years old. It is a morning in early summer, and my mother and I are walking, as we often do, in Princes Street Gardens, set in a valley between the austere beauty of Edinburgh Castle, high on its rock, and the Georgian elegance of Princes Street itself. There is so much to see and to experience. The sea winds setting the flags streaming, the soaring plumes of the Ross Fountain, and the almost overpowering perfume of the flowers; roses, carnations, pansies, anemones and lupins in serried ranks, bank upon bank of them, terrace upon terrace, leading the eyes upward to the broad street with its trees and hedges fringing the pavement.

A man is working in the gardens and I am intrigued by what he is doing. There is a bed of tulips, golden like sunlight, lifting their heads to the high Edinburgh sky and the man is tidying the bed, weeding between the plants, removing leaves that have blight. I feel a sense of pride that I understand this; my mother has explained it. But he is doing something else that I can't understand. Some of the tulips have grown faster than their peers so that they are taller their golden heads stand higher than the others and the man is cutting off these heads so that the stalks stand bare, denuded, but now the same size as the other plants in the bed. I ask my mother, in puzzlement, why he is cutting down the tall tulips, and when she answers there is a trace of sadness in her voice. "He wants to make them all the same size, darling, so that they'll look tidier. But I don't think that's what gardening is all about, do you?"

Well, I agreed with my mother. I ***certainly*** didn't think that is what gardening was all about! But it made me take more notice of the flowers in the public gardens, and over the next few weeks I noticed something strange. The gardener couldn't do much to impose uniformity on bushes, or on flowers that grew in clumps; the roses and the crocuses were all different sizes. But flowers that grew on single stalks - flowers that stood alone - had been lopped if they threatened to disturb the symmetry of the bed they grew in.

As a teacher and academic working in gifted education, I have become sadly familiar with the cutting down to size of children who develop at a faster pace or attain higher levels of achievement than their age-peers. Perhaps these children offend our egalitarian principles and our sense of what is fit. Perhaps they threaten us as teachers; few of us encounter, with perfect equanimity, a young child whose capacity to learn is considerably greater than our own. Perhaps they are what we would wish to be, and are not. Perhaps they merely irritate us; gardening would be so much easier if all children progressed at the same rate. For whatever reason, intellectually gifted children are, more often than not, held back in their learning to conform to the pace of other children in their class. In Australia the practice is so explicitly recognized that It even has a special name: "cutting down the tall poppies".

How did the term originate? One story tells of a general who had conquered a new territory, and was unsure of how he should deal with the leaders of the vanquished tribes. Should he make use of their knowledge of the land, and their wealth of experience, or should he imprison them for fear that, if allowed to remain free, they would lead their peoples in an uprising? He asked the advice of his father, a veteran of many campaigns. The old man led him into a field of poppies, and then wordlessly walked through the field, expertly lopping, with his cane, the heads of the poppies which stood tallest. The young man returned home and put the vanquished leaders to the sword.

Our gifted children - our small poppies - are at risk in our schools, and the group at greatest risk are the highly gifted. This article explores two issues: first, that teachers' lack of awareness of the characteristics and needs of the highly gifted, coupled with the children's own attempts to conceal their ability for peer acceptance, can result in significant underachievement among this group; secondly, that an effective combination of nomination by trained or inserviced teachers, parent nomination, and standardized tests of ability and achievement, can form an effective matrix of identification procedures for young, highly gifted children.

Levels of Giftedness

Two major causes of the difficulties experienced in school by highly gifted students are the virtual absence of coursework in gifted education from most teacher training programs, and the lack of awareness, even among teachers with a genuine interest in gifted children, of the different levels of giftedness within the gifted population. Many teachers work on the assumption that gifted children comprise a relatively homogeneous group - and this misconception places the highly gifted at risk through misidentification, seriously inadequate curriculum provision, and inappropriate grade placement (Gross, 1992a, 1993).

Gifted pre-school children are at particular risk. Few gifted programs exist for children in this age-group; consequently pre-school teachers are likely to have had neither training on how to recognize these children, nor the opportunity of seeing the level they can work at when they are presented with appropriate learning experiences.

Steven, aged 4, marched into trouble with his pre-school teacher when she asked him to assist in picking up the plastic cups which the children had used for fruit juice. "Steven," she called, "can you pass that cup, please?" Steven paused a moment. Then he placed the cup deliberately in the center of the floor, clasped his hands behind his back, and, with an expression of solemn concentration, proceeded to pace back and forward in front of it. When his busy teacher rebuked him for not assisting in the clean-up, he explained with mock seriousness that he was not able to; she herself had given him a different task which, indeed, he had performed: he had now passed the cup from several different directions! For Steven's teacher, this was the last straw - or latest eccentricity - from a child who seemed quite incapable of conforming to four-year-old behavioral norms. She told him he was a rude and disobedient boy, and sent him to stand in a corner.

Cathy, meanwhile, was moving quietly around the room, collecting the other children's cups. For several days this had been her self-appointed role and she took keen pleasure in it. She stacked the cups carefully inside each other and carried the stack over to the teacher. "Look, Ms Marks," she said proudly, "I have 14 today. Yesterday I had 12. That's two more than yesterday." And she smiled with pleasure as Ms Marks gave her a grateful hug and told her what a clever, thoughtful class member she was.

Gifted girls learn teacher-pleasing behaviors far more quickly than boys (Silverman, 1989a). However, the differences in Cathy and Steven's behaviors, and Ms Marks' reactions to them, did not arise only from issues of gender and personality. They also arose from significant differences in the two children's levels of cognitive ability.

Cathy is a moderately gifted 4-year old with a visible talent for math. She has an IQ of 135 and although this has the potential to set her apart from the other children - children of this level of ability appear in the population at a ratio of only 1 in 100 - she is not so very different as to have noticeable social difficulties. Hollingworth (1926) defined the IQ range 125-155 "socially optimal intelligence" and observed that, in general, children scoring within this range were well-balanced, self-confident and out-going individuals who were able to win the confidence and friendship of age-peers. Cathy is quick witted, responsive, and eager to help. She is a delight to teach and Ms Marks enjoys her membership in the class.

Steven, however, is highly gifted with an IQ of 158 (approximately I in 10,000). This falls outside Hollingworth's range of socially optimal intelligence. He taught himself to read before his 3rd birthday and now has the reading skills of a 7-year-old. This is frustrating for him as there are no books challenging enough in Ms Marks' classroom. Indeed, very little that happens at pre-school provides him with either intellectual stimulation or social companionship. He adores puns and wordplay, and he has already found, to his regret, that the other children don't seem to understand the things he says; they just look at him in bewilderment. But what he can't understand is why Ms Marks herself doesn't appreciate his jokes. He really tries to please her. At home his plays on words are greeted with laughter and affectionate approval. He had genuinely meant to hand in his cup but he had suddenly been struck by the two meanings of the word "pass" - and, besides, everyone knew that collecting cups was Cathy's self-appointed task, in which she took great pleasure. He was going to give his cup to her when he was finished. Why had Ms Marks called him rude and disobedient?

If Ms Marks had been trained or even had inserviced on the characteristics of gifted preschoolers, she might have known that highly gifted students often enter school already reading (Gross, 1993), and she might have had a few more challenging books ready - just in case! She might also have recognized, in Steven's delight in wordplay, the unusually mature sense of humor that is characteristic of these children (Silverman, 1989b). But she had no training, no inservice and no previous experience with a child such as Steven.

Silverman (1989b, p. 71) defines the highly gifted as "those whose advancement is significantly beyond the norm of the gifted", and suggests that any child who scores three standard deviations above the mean on a test of cognitive ability should be termed highly gifted: that is, children of IQ 145 or above. Such children appear in the population at a ratio of approximately 1 in 1000. It is important to note, however, that by "advancement" Silverman is referring to intellectual ability or potential, rather than in-class performance; over the last 70 years, research on the school performance of highly gifted children reveals that, like Steven, the majority of these children are required to work at levels several years below their tested achievement (Hollingworth, 1942; Silverman, 1989b; Gross, 1993).

As can be seen, highly gifted children appear only rarely in the school population. This rarity is yet another factor in teachers' lack of awareness of the cognitive and affective characteristics of this group. If they are to fulfil their remarkable intellectual potential, these children require an educational program which differs significantly in structure, pace and content from that which might be offered to the moderately gifted. Yet highly gifted young children are often at risk from teachers who are unaware of the extent of their difference or who wrongly attribute their academic advancement to parental hothousing.

Developmental Differences in Highly Gifted Children

Research on intellectually gifted children, and particularly the highly gifted, reveals that even in early childhood they display significant differences from the developmental patterns observable in age-peers of average ability. The precocious development of speech, movement and reading are powerful indicators of possible giftedness. Of course, not every child who speaks, walks or reads early is even moderately gifted (Jackson, 1992), but when

these skills appear at extremely early ages, and particularly when they appear in tandem, they are generally linked to unusually advanced intellectual development.

Early Development of Speech
Numerous researchers have noted the early development of speech and movement which is typical of moderately gifted children. Whereas the average age at which a child can be expected to utter her first meaningful word is around 12 months (Staines and Mitchell, 1982), the gifted child begins to speak, on average, some two months earlier. Furthermore, the stages of speech acquisition are passed through earlier and with greater rapidity than in the child of average ability. By 18 months the average child has a vocabulary of 3-50 words, but little attempt is made to link them into short phrases until the age of 2; however, in gifted children, linking words into phrases can commence as early as 12 months. Jersild (1960) noted that, at the age of 18 months, children of average ability were uttering a mean number of 1.2 words per "remark", whereas their gifted age-peers were uttering 3.7 words per "remark". By the age of 4-1/2 the difference was even more remarkable; the mean number of words per "remark" for average children was 4.6 words, while for the gifted it was 9.5.

Studies of highly gifted children record instances of linguistic precocity far beyond even that of the moderately gifted. The mean age at which 52 children of IQ 160+, studied by Gross (see Gross, 1993) uttered their first word was 9.1 months, with a standard deviation of 3.48. If two outliers are removed from this statistic (two brothers who spoke at 18 and 21 months respectively) the mean drops to 8.63 months with a much narrower standard deviation of 2.64. Eleven of these children spoke their first meaningful word (other than "mamma-dadda" babble) by the age of 6 months. Barbe (1964) studying children of IQ 148+, noted that the average age by which these children were speaking in sentences was 16 months.

The speech of some highly gifted children demonstrates quite remarkable fluency and complexity. Adam, one of Gross's subjects of IQ 160+, uttered his first word at 5 months and by two months later was talking in 3 and 4 word sentences. His mother recalls the astonishment of supermarket assistants as Adam, aged 7 months, gave a running commentary on the grocery items as she wheeled him past the shelves in the shopping cart. Peter, whose first word, spoken at 8 months, was "pussycat", surprised his parents at 18 months by announcing, "I think I'll have a quick shower." Roedell and her colleagues reported a 2-year-old who regularly used such complex sentences as "I want to take a look at this story to see what kinds of boys and girls it has in it" (Roedell, Jackson and Robinson, 1980).

It is this early and fluent command of language, linked to the cognitive precocity of the highly gifted, that gives rise to the love of wordplay which characterizes many highly gifted children - such as Steven's juggling with the alternate meanings of "pass".

Occasionally the speech of highly gifted children may be delayed, as in the case of the two brothers in Gross's study who did not speak until 18 months and 21 months respectively and whose mother was warned by their pediatrician that this might be indicative of intellectual disability. (Jonathan later tested at IQ 170 and Christopher at IQ 200!) In these situations, however, when speech does appear, it often arrives in the form of phrases or short sentences, rather than words in isolation. Robinson (1987) reports a young boy whose first utterance, at 20 months, was "Look! Squirrel eating birds' food!" It is important, therefore, to note that while unusually early speech is a powerful indicator of possible giftedness, delayed speech should not be taken as an indicator that the child is not gifted!

However, as will be discussed later, young gifted children who are verbally articulate may quickly learn to moderate their vocabulary at pre-school or in kindergarten if they sense disapproval from their classmates. Some even develop two vocabularies - one for home, the other for school (Gross, 1989) - and may even appear relatively inarticulate in the classroom.

Early Development of Mobility
Just as highly gifted children generally demonstrate an unusually rapid progression through the stages of speech development, the development of mobility may also arrive early and progress with unusual speed.

Even moderately gifted children tend to crawl, walk and run earlier than their age-peers (Terman, 1926; Witty, 1940) but highly gifted children may display even greater precocity. Silverman (1989b) describes a girl of 7 months who stood alone, climbed into chairs unassisted and navigated stairs by herself. Gross (1993) describes Rick, of IQ 162, who sat up by himself at 4-1/2 months, ran at 11 months and rode a two-wheeled bicycle unaided at age 3. The mean age at which Gross's subjects of IQ 160+ sat up unsupported was 6.1 months, as opposed to 7-8 months in the general population. The mean age at which they walked while supported was 10.1 months - 1-1/2 months earlier than the population mean - and the mean age at which they were walking independently was 12.1 months - fully 3 months earlier than is usual. Not only did these children become physically mobile at remarkably early ages, but the stages of skill development were traversed with exceptional speed.

Early Development of Reading
The research literature on intellectual giftedness suggests that one of the most powerful indicators of exceptional giftedness is early reading. Both Terman (1926) and Hollingworth (1926, 1942) reported that it was early reading that most clearly differentiated between the moderately and highly gifted children in their studies. Almost 43% of the children of IQ 170 in Terman's gifted group read before the age of 5, compared with 18% in the sample as a whole, while 13% of the IQ 170 group read before the age of 4.

Over the last 30 years print has become more accessible to young children through television and the other advertising media, and studies show an even greater incidence of reading among gifted children in the early years. VanTassel-Baska (1983) reported - on 270 highly gifted 13 and 14-year-olds who had achieved scores of 630 on the Scholastic Aptitude Test - Mathematics (SAT-M) or 580 on the Scholastic Aptitude Test-Verbal (SAT-V). These scores place them above the 90th percentile on tests standardized on college-bound seniors. VanTassel-Baska found that fully 80% of this group was reading by age 5 and 55% by age 4. More than 90% of Gross's subjects of IQ 160+ were reading before their 5th birthday.

Research has found that children who demonstrate a precocious development of speech and movement are highly likely to develop reading skills substantially earlier than their age-peers (Hollingworth, 1942; Gross, 1993). The research literature on the highly gifted contains a wealth of information on extremely gifted children who learned to read either with no assistance or with minimal assistance from their parents.

There are two notable outcomes of the remarkable precocity in speech, movement and reading among the highly gifted. Firstly, their unusually early mobility allows highly gifted children to move around independently and explore for themselves several months earlier than their age-peers of average ability, while their very early speech enables them to express their ideas, seek information and interact verbally with their parents and family members at an age when other children are only beginning to experiment with oral communication. Both early movement and early speech contribute significantly to these children's capacity to acquire and process information, and thereby strengthen crystallized intelligence.

Their early reading gives them access to an information bank not usually accessible to children until several years after school entry. Secondly, highly gifted children's difference from their age-peers is identifiable from an early age, not only to their parents but to neighbors and other members of the community. It is difficult either to ignore or to conceal a child such as Andrew, in Gross's study, who at age 2 developed a passion for numbers and would gleefully inform strangers waiting in line for a bus that they had, between them, 37 buttons on their clothes! Attitudes towards Andrew's intellectual precocity varied. Some people in the line would respond with amused chuckles, or engage him in conversation; others would frown or ostentatiously turn their backs on this small poppy who was growing too tall, too quickly.

Community Attitudes to Physical and Intellectual Precocity
Both in the United States and in Australia, community attitudes towards giftedness differ depending on the domain in which it is sited (Tannenbaum, 1962; Carrington, 1993). Physical precocity, such as talent in sport and athletics, is much more readily tolerated than intellectual precocity. Gifted students become aware of this, at surprisingly early ages, and it strongly affects the attitudes and behaviors they adopt with age-peers (Gross, 1993).

One of the most remarkable examples of physical precocity yet recorded is that of Emma, an Australian girl who, as this article is being written, is 3 years old. Emma sat up unaided at 4 months of age, stood alone at 7 months, and walked upstairs unaided at 11 months. She was fascinated by horses and, at 14 months of age, after much pleading, she persuaded her mother to take her to the local riding school for a "pony ride". The instructor was astonished by Emma's natural balance and coordination - and by her swift and full comprehension of instructions. At the end of the ride he told her mother that he had never before accepted, for instruction, a child under the age of 3, but, in recognition of Emma's remarkable physical and intellectual precocity, he would accept her for formal lessons. Four months later Emma competed in a riding school gymkhana and won 2nd place in a competition against 12 other junior riders aged between 3 and 7. She was 18 months old!

Emma's physical advancement is accompanied by remarkable oral precocity. By 13 months of age, she had a vocabulary of more than 80 words and was already linking words into short phrases, and using them to express her desires and feelings to her family - such as her passionate longing for riding lessons. Emma's mother, however, has noticed quite different attitudes among neighbors and other community members towards Emma's physical and intellectual gifts. She receives praise and encouragement for her riding talents. No one has ever suggested that she should moderate her performance to conform to the expected standards for her age, and she mingles happily with the older children and is accepted by them without question. However, at the play-school she attends, the teachers refuse to allow her to join the sessions for 4 and 5-year old children, insisting that she stay with the 2 and 3-year olds. Emma's play interests resemble those of older children, and she very much wants to be with the 4 and 5-year olds, who like to play the games she wants to play; she finds her age-peers "babyish" and has little interest in their company. However, her play-school teachers, who have no training in gifted education, believe that acceleration may result in emotional difficulties later, and they insist that it is important for her to learn to socialize with her peers.

Emma's mother believes that Emma has already noticed, and internalized, the different responses to her two areas of talent. "At the riding school," she says, "it is expected that she should be a gifted rider, and that is exactly how she is behaving. At play-school it is expected that she should be immature, and that is exactly how she is behaving there. She didn't at first, but her behavior and speech have regressed over the last few months. When she's with the other kids of her age, she adopts their vocabulary and their speech patterns. When she's at home with me she speaks normally. She is being taught that it's okay to stand out physically but that intellectually you have to conform."

The Awareness of Difference
Emma is not yet three! When do intellectually gifted young children first become aware of their difference? This, of course, depends on the individual, and is influenced by a range of factors including personality, level of giftedness and the family's response to the child's difference. Many gifted children, however, become aware of their difference at surprisingly early ages. The precocity of speech, movement and reading which characterize the intellectually gifted are strikingly visible, and are often commented on in the child's presence or within her hearing. However, while comments on early speech or mobility are generally positive or at least neutral (no one assumes that an early walker or early talker has been hothoused by a doting parent) community reaction to early reading can be very different.

Recently I was diverted, in the local supermarket, by a small boy aged about three whose mother was wheeling him in the grocery cart, and who was entertaining himself by reading aloud the text on the cereal packages. He was already a fluent and articulate reader and had no difficulty with phrases such as "excellent Swiss formula" and "tasty combination of nuts, raisins and wheatgerm" but he stumbled over the word "nutritious" and asked his mother to pronounce it. She did so, and also explained the meaning. The conversation was conducted quietly, with no pretentiousness or attention seeking. However, another shopper passing with her cart admonished the mother sharply with, "Why are you pushing him! Let him be a child!" The mother blushed scarlet, and the little boy faltered and looked up at her. "What did that lady mean?" he asked in a small voice. He did not understand, but he knew that the woman's tone was disapproving and he knew that she was not referring to his being pushed in the

shopping cart! This is an early and potent example of how a disparaging comment, aimed at the parent of a gifted child, can be internalized by the child himself.

Teachers tend to assume that a child who enters school already reading must have been taught to read by her parents, and many teachers resent this. Virtually every child in Gross's study (Gross, 1992a, 1992b, 1993, 1994) has entered school with the reading skills of children aged seven, eight or older, but where the children's teachers have commented, to the parents, on this unusual reading advancement, the majority of comments have centered not on the quality of the child's reading but on the presumed involvement of the parent. Comments such as, "It's not fair to hothouse her like that", "Let him be a child; he'll have to grow up soon enough", and "There's no point in pushing her like that; the others will catch up anyway" are common. It is disturbing to note the frequency with which these critical comments have been made by teachers **in the presence of the child.**

Another factor in the gifted child's early recognition of her difference is that she is likely to engage in social comparisons significantly earlier than her age-peers (Robinson, 1993a). As children move through the pre-school and primary years, the self-centeredness of early childhood gradually gives place to an awareness of the opinions, abilities and attitudes of others. The child moves from a self-referenced perspective from which she views her achievements against the level of her own previous performance ("I couldn't do that yesterday, but look at me today!") to a norm - referenced perspective from which she compares her achievements with those of other children ("Hey, I finished a while ago but the other kids are still working."). This shift in perspective is more closely linked to mental age than to chronological age. Thus, a highly gifted child of four or five may have already reached a stage of norm-referenced behavior which her age-peers of average ability may not reach till the age of seven or eight.

From her own, norm-referenced, perspective, from her observations on the (seemingly) late development of reading, number or vocabulary in the other children she meets at pre-school or kindergarten, from her awareness of the many ways in which her likes and dislikes differ from those of other children, and from adults' or older children's comments about her own abilities or behavior, the gifted child is likely to become aware, at an early age, that she is different, in many ways, from the children around her.

However, contrary to popular belief, this awareness of difference rarely leads to conceit or feelings of superiority. Rather, highly gifted children may feel acutely uncomfortable and act swiftly to conform to the social or behavioral norms of their age-group. Emma, as related earlier, has learned to mimic the speech and behavior of her age-peers. Silverman (1989a, p. 17) tells of 5-year-old Caitlin who, on entering preschool, began to copy the girl in the next desk by drawing with her left hand (she was right-handed), asked the teacher for help zipping her jacket, although she had mastered this skill fully a year before, and frequently lapsed into "baby talk". When her mother, losing patience, snapped "Caitlin, act your age!" Caitlin replied, "But Mommy, I am acting my age. I'm acting just like all the other girls in my class."

As described above, the majority of gifted children enter school with the reading accuracy and comprehension of children several years their senior. However, if the teacher does not recognize this precocity and respond to it appropriately, the gifted young child may stop reading, or deliberately decrease the quality and quantity of her reading after only a few weeks at school.

Hadley, with an IQ of 178, who had been reading since the age of 18 months, entered school at age 5-1/2 with the reading capacities of a 10-year-old but promptly began to mimic his classmates by selecting picture books, or books with only a few words of text, from the classroom bookshelves. During his first months at school, Ian, with an IQ of 200, particularly disliked having to read aloud, and would mumble and stumble over words to the extent that his teacher remained quite unaware that only a few months previously he had been assisting his pre-school teacher by reading aloud to the class. Silverman (1989a) describes a 5-year-old girl who had been reading since she was 3, but who, in kindergarten, pretended to be a non-reader so that she would be like and therefore liked by the other children.

Issues in the Identification of Young Highly Gifted Children
Benbow and Stanley (1997) analyzing the forces in American society which have led, over the last few years, to a decline in school achievement among students of high intellectual potential, identify, as one of the contributing factors, the reluctance of teachers to use standardized testing to assess the aptitude and achievement levels of gifted and talented students. Indeed, in both the United States and Australia, the use of IQ and achievement testing is often viewed as elitist and the majority of teachers prefer to rely entirely, or largely, on their own professional judgment (Gross, 1993).

However, the highly gifted child who is anxious to fit in, or who fears that she will anger her teacher by displaying intellectual precocity, may mimic the academic and social behavior of her age-peers so skillfully that the teacher who is relying only on behavioral indicators of possible giftedness may have little chance of detecting her remarkable abilities.

Teacher Nomination
A study conducted by Gordon and Thomas (1967), with several classes of five-and six-year-olds, gives an interesting picture of the skill with which many gifted young children learn to adapt to and mirror the behaviors of the group in which they are placed. The researchers asked the children's teachers to describe each child's behavior when faced with a new activity or social situation, and to classify the child under one of four descriptors.

Plungers: Children who plunged into new activities or situations quickly and positively.
Go-alongers: Children who went along with the group in a generally positive manner but who rarely took the initiative or adopted a leadership role.
Sideliners: Children who preferred to wait for a bit until a new activity was established and then gradually became involved.
Nonparticipators: Children who remained negative to new situations for weeks or months, or even indefinitely.

Gordon and Thomas also asked the teachers to make a professional judgment of the general level of intelligence of

each child. The teachers overwhelmingly asserted that the plungers were of well above average intelligence, yet, when the psychologists actually tested the intelligence of the children, the gifted children appeared not among the plungers but among the sideliners and go-alongers. The gifted young people in these classes were already functioning from a norm-referenced perspective and had learned to stand back a little and check out the behaviors and conventions that were accepted by their classmates, before they committed themselves to an activity. Ironically their teachers, like any educators before and since, had confused motivation and self-confidence with high ability.

Teacher nomination, used alone, is probably the least effective method of identifying gifted children in the early years of school, and the method most prone to class and cultural bias. Jacobs (1971) found that kindergarten teachers who had received no training on the characteristics of gifted children tended to over-estimate the ability of children who were verbally articulate and cooperative in class, and who sought teacher approval. Seventeen years later, Betts and Neihart (1988) estimated that as many as 90% of children nominated as gifted by untrained teachers are likely to be high achieving conformists - teacher pleasers "who often become bored in school but learn to use the system to get by with as little effort as possible" (p. 249). Children identified by teacher nomination alone are, furthermore, likely to come from middle class families within the dominant culture (Ciha et al, 1974; Gross, 1993).

Extensive inservice or training in gifted education can significantly increase teacher effectiveness (Gear 1978) and teacher nomination forms and trait lists can be of some assistance in helping the teacher to structure her observation of the children in her class, and alerting her to some of the behavioral characteristics of the gifted. However, many of the trait lists published both in gifted education texts and as commercial materials focus on the positive characteristics of the motivated achiever and ignore the negative behaviors often displayed by gifted children who are demotivated and underachieving.

Parent nomination

Research has consistently shown that parents are significantly more successful than teachers in identifying giftedness in the early childhood years (Jacobs, 1971; Ciha, et al, 1974) particularly, as Robinson (1993b) has pointed out, in domains such as the development of speech and movement, and the emergence of reading or literacy, where there are distinctive milestones and where strong normative expectations are held by the community.

Although some parents of gifted children do remain surprisingly unaware that their children are developmentally advanced, in most cases the onset of awareness that the child is different occurs in the early childhood years. Robinson and Robinson (1992) reported that almost half of 550 young children aged 2-5, who were volunteered by their parents for a longitudinal study of high ability children, and who were subsequently tested, had IQs of 132 or higher. This is statistically remarkable; only 2.3% of the population scores at this level.

In general, parents of the highly gifted recognize their children's developmental precocity in the very early years (Silverman and Kearney, 1989; Gross, 1992a, 1993). More than 90% of the parents in Gross's study realized by their child's second birthday that the child was not only developmentally advanced, but remarkably so. Like the parents of highly gifted preschool children studied by Louis and Lewis (1992), Gross's parents cited an unusual facilitative and retentive memory and an unusual capacity for abstract reasoning as factors which signalled to them that their child might be gifted. However, they also reported that they had been alerted by the level of questioning, intense curiosity, desire to learn, and unusually advanced sense of humor displayed by the child, as well as the precocity of speech and movement and, in some cases, the spontaneous emergence of reading (Gross, 1993).

It is hardly surprising that parents are so much more successful than teachers in identifying giftedness in the early years. It is during the early years of life that cognitive development proceeds most swiftly, and that the changes in the child's interactions with her environment are most visible, and most dramatic. By the time the teacher enters the scene, developmental changes have become more gradual. Furthermore, the parent sees a much wider range of cognitive and affective behaviors than does the teacher who operates in a setting that imposes greater uniformity of conduct upon the children in her charge. At home, the gifted young child has no need to moderate her behavior for peer or teacher acceptance. As has been discussed, highly gifted children may learn to camouflage their abilities within the first few weeks of school.

However, despite the efficiency and effectiveness of parent nomination, parents of the gifted who try to discuss their children's high abilities with the school are often disbelieved (Ciba et al., 1974; Roedell, 1989; Gross, 1993). Recall Adam who at seven months gave a running commentary on the grocery items in the supermarket. When his mother approached his kindergarten teacher to let her know that Adam was a competent and enthusiastic reader and had been so since the age of 3, she was treated with polite disbelief.

"She smiled at us as if what we had said was a social pleasantry rather than a piece of information that might help her with his education, and we soon found out that this was, indeed, the attitude taken by the kindergarten staff. Matters were complicated by the fact that Adam had already passed through the stage of having to read aloud, and now, preferred to read silently, so when the teachers did notice him poring over a book, they assumed he was simply looking at the pictures" (Gross, 1993, p. 220)

More than 90% of the highly gifted children in Gross's study were reading before the age of 5. However, because of the overt hostility shown by many Australians towards intellectually precocious children, only 30% of the parents of these early readers felt confident enough to tell the school, on enrolment, that their child was already reading. The majority were afraid that they would be disbelieved and viewed as pushy mothers or ambitious fathers.

The reliability of parent nomination can be greatly enhanced by the use of trait lists which have been designed by researchers trained in both gifted education and psychological measurement. A particularly effective parent checklist is Sayler's Things My Young Child Has Done (Harrison, 1998), which asks parents to respond to questions on the cognitive and affective development of their young child, including the development of speech, movement and reading. Parents can take the completed checklist to their first conference with the school or pre-school

principal, or the child's prospective teacher. The developmental guidelines of language and motor ability in both average ability children and intellectually gifted children, presented by Hall and Skinner (1980), can assist both parents and early childhood educators to assess the degree of developmental precocity displayed by a young gifted child.

Smutny (1995) recommends that parents of gifted young children should construct a portfolio of their child's work, activities and interests which can serve as a record of his or her intellectual development. "A portfolio may include library book awards, preschool projects of merit, projects from home that are unusual, special awards from scouting or community service and video or audio-tapes of performances or projects (although photographs are better as they can be viewed at the time the portfolio is reviewed)" (Smutny, 1995, p. 15). The parent can take the portfolio to tile child's future teacher before school starts, or as soon as possible after the school year begins, so that the teacher is not left to discover for herself that the young child is exceptional, and before the child has the opportunity to discover for herself that she is different, and respond by "going underground".

The portfolio technique can be particularly useful where a highly gifted child is already reading at an unusually advanced level, writing short stories or poetry, or creating exceptional artwork. Harrison (I 998) and Winner (1996) have both documented truly remarkable examples of the art work of highly gifted young children which demonstrate these children's astonishing visual memory and passion for detail. Teachers presented with such direct and unequivocal examples of precocity are less likely to suspect that the child's achievements are the result of parental hothousing.

Ability and Achievement Testing
The most effective method of identifying highly gifted children in the middle years of school is through standardized tests of ability and achievement (Kaufman and Harrison, 1986), particularly when the tests have a high enough ceiling to discriminate between children at different levels of giftedness (Hansen, 1992) or when off-level testing is used to identify children who possess truly remarkable abilities in specific subject areas (Assouline and Lupkowski-Shoplik, 1997). Many researchers, however, express a justified concern that the reliability of psychometric testing is lower in the early years of childhood than in the middle years (Robinson and Robinson, 1992) and question whether a high IQ score obtained by a young child is predictive of academic success in later childhood (Jackson and Klein, 1997).

Unfortunately, some early childhood educators take this concern too far, and adamantly refuse to have a young child psychometrically assessed, even when it is obvious that the child is very highly gifted and will require early intervention and an individualized educational program. These teachers, building principals, or even school counselors point out that the reliability of IQ tests increases significantly when a child is around 7 or 8 years of age. On this basis, they will recommend that testing be postponed until the child is in second or third grade (Gross, 1993).

In this, as in other issues in the education of the highly gifted, we can learn from our colleagues in other areas of special education. One reliability of audiometric testing is higher in middle childhood than when a child is 4 or 5 (Moores, 1987), but if an early childhood teacher suspects that a young child is hearing impaired she will not counsel that assessment be delayed until an age when the test will have greater reliability. Rather, the child is audio metrically assessed as soon as her impairment is suspected, and an intervention is designed and put in place. The child is retested a few years later when the test is more reliable, and her program can be modified according to what are now seen to be her needs. Meanwhile, her early needs have been diagnosed and met!

An often overlooked factor in the reduced reliability of IQ testing of very young highly gifted children is what might be called the fatigue effect. The brighter a child is, the longer she takes to reach her ceiling on the test. It can take an hour or more to fully assess a highly gifted 4 or 5-year-old, and few very young children, no matter how gifted they are, can maintain full concentration for such lengthy periods. Both Robinson and Robinson (1992) and Gross (1993) found that the scores of young highly gifted children are likely to rise over successive testings, whereas normally a decrease would be expected in this high-scoring population through regression towards the mean. Ability or achievement testing of highly gifted children under the age of 5 or 6 is likely to result in an under-estimation of the child's true performance, rather than an over-estimation.

Issues in the psychometric assessment of young, gifted highly children have been addressed, in recent years, by Robinson and Robinson (1992), Silverman and Kearney, (1992), Gross (1992a), Robinson (1993b) and Jackson and Klein (1997) among others. The issues are too many and too complex to be fully addressed here. It is important, however, that early childhood educators do recognize the advisability of including off-level testing, and IQ assessment using well-designed, individual tests with high ceilings, in the range of procedures through which highly gifted young children can be identified.

Appropriate Placement of Highly Gifted Young Children
Numerous studies show that when gifted children are permitted early enrollment in kindergarten or first grade on the basis of intellectual, academic and social readiness, they perform as well as or better than their older classmates. (For reviews of these studies see Daurio, 1979; Robinson and Weimer, 1991). However, for the highly gifted, early entrance may not be sufficient by itself, and the school should also consider some form of ability or achievement grouping (Gross, 1992a). In addition, thoughtfully designed enrichment centering on the young child's areas of special talent is an essential element in any gifted education program (Harrison, 1998).

Space does not permit a full discussion of these three interventions, each of which has a wealth of research literature to support its use. (See, for example, Rogers, 1991.) Let us close, however, with an illustration of the academic and social benefits which can arisen for one highly gifted young child, from a thoughtfully designed synthesis of acceleration, ability grouping and enrichment.

Peter Saxton, aged 9, and a subject in Gross's study of children of IQ 160+, has experienced both acceleration and grouping. He is currently a 5th grade member of a special full time class of gifted children from 3rd through 6th grade. Peter's teacher is aware of the emotional maturity and sensitivity of the children in his class, and has responded by designing a curriculum that caters for their affective, as well as cognitive needs.

When Peter was 7, and in 3rd grade, his class undertook a special project on people with disabilities, called *Treasures in Jars of Clay*. One of the questions to which the children had to respond in writing was: "To care for others we need to have a right perspective". What does this mean?

Peter chose to answer this by discussing how he had recently felt when his 94-year-old great-grandmother, Nan Nan, became ill with cancer and moved into his home to be looked after. At first it seemed to Peter that he was part of a strange and puzzling role reversal and he resented it. Later, as he relates, he grew into understanding.

"When she first came home I was angry and frustrated because nobody seemed to have time to think about me. Nan Nan was not able to read, or even talk to me, which she had done all her life. Now I am able to understand that although Mummy and Nanni do not have as much time as before, it is not that they do not love me. It is just that Nan Nan needs a lot of help as she cannot walk. To put her on the commode chair, we have a special lifter. I now spend time talking and watching television with her - we have swapped around. This I think is having the right perspective."

It is unlikely that Peter's teacher would have felt able to design a project which demanded such a degree of analysis and insight if his class had been a mixed ability group of third graders, and it is extremely unlikely that this highly gifted 7-year-old, who was desperately unhappy and isolated in his first two years of school, would have been able to develop the degree of trust in his classmates that enabled him to share his feelings so sensitively, if he had remained in the inclusion classroom. Third graders of average ability would focus on the commode chair, and would view as amusing, rather than touching, the picture of the little boy changing places with his great-grandmother.

The combination of acceleration and grouping has placed Peter with children who are somewhat closer to his own levels of academic and emotional development. He no longer needs to moderate his vocabulary, conceal his gentleness and sensitivity, and pretend to share interests he does not truly have, to be accepted by his classmates.

Conclusion

Highly gifted children - our small poppies - are at risk in our schools. The majority of teachers have had no access to training or inservice that would make them aware of the curricular and programming implications of levels or degrees of giftedness. Interventions which work well with moderately gifted students are assumed to be effective with the highly gifted. Checklists designed to identify what Borland 1986, p. 167) perceptively calls "polite, task-committed strivers" are used, with little effect, to identify highly gifted children who, angry and demotivated, may have decided by the end of their first year in school that they have earned nothing that they did not teach themselves before school entry, or who, painfully aware of their difference from their peers, have committed themselves to becoming masters of camouflage. IQ and off-level achievement testing, the most effective procedures for identifying children with extreme intellectual or academic ability, are rejected as elitist or are too often postponed till the middle years of childhood, by which time the highly gifted child may well have gone underground.

It is time both the American and Australian communities reviewed and analyzed, with honesty and rigor, their attitudes to childhood precocity. Both nations abhor racial, social and religious bias. We teach our children that every member of our society has the Right to "life, liberty and the pursuit of happiness" regardless of race, color or creed. Yet we do hold a pervasive, insidious bias when it comes to talent development. All gifts are equal, we seem to say, but some gifts are more equal than others.

We recognize that for a child with unusual sporting or athletic ability who longs to fulfil her potential, "the pursuit of happiness" implicitly involves her right to strive to develop her talent to the fullest possible extent. Our bias becomes apparent, how- ever, when the child's precocity is sited in the cognitive domain. Intellectually gifted young children are much less acceptable to the general and educational community than are their physically gifted age-peers, and their efforts to develop their talents are too often greeted with apathy, lack of understanding, or open hostility. It is time that we acknowledged and addressed this bias so that all our small poppies may lift their heads to the sky.

Assouline, S.G. and Lupkowski-Shoplik, A. (1997). Talent searches: A model for the discovery and development of academic talent. In N. Colangelo and G.A. Davis (Eds.) Handbook of gifted education (2nd edition) (pp. 170-179). Needham Heights, MA: Allyn and Bacon.

References

Barbe, W.B. (1964). One in a thousand: A comparative study of highly and moderately gifted elementary school children. Columbus, Ohio: F.J. Heer.

Benbow, C.P. and Stanley, J.C. (1997). Inequity in equity: How equity can lead to inequity for high-potential students. 2(2), 249-292.

Betts, G.T. and Neihart, M. (1988). Profiles of the gifted and talented. Gifted Child Quarterly, 32(2), 248-253.

Borland, J.H. (1986). IQ tests: Throwing out the bathwater, saving the baby. Roeper Review, 8(3), 163-167.

Carrington, N. (1993). Australian adolescent attitudes towards academic brilliance, Australasian Journal of Gifted Education, 2(2), 10-15.

Ciha, T.E., Harris. T.E., Hiffman, C. and Potter, M.W. (1974). Parents as identifiers of giftedness, ignored but accurate. Gifted Child Quarterly, 18. 191-195.

Daurio. S.P. (1979). Educational enrichment versus acceleration: A review of the literature. In W.C. George, S. J. Cohn and J.C. Stanley (Eds.) Educating the gifted: Acceleration and enrichment (16-63). Baltimore: Johns Hopkins University Press.

Gear. G.H. (1978). Effects of training in teachers' accuracy in the identification of gifted children. Gifted Child Quarterly 22(1), 90-97.

Gordon. E.M. and Thomas, A. (1967). Children's behavioral style and the teacher's appraisal of their intelligence. Journal of School Psychology, 5, 292-300.

Gross, M.U.M. (I 989). The pursuit of excellence or the search for intimacy? The forced-choice dilemma of gifted youth. Roeper Review, 11(4). 189-194.

Gross, M.U.M. (1992a). The early development of three profoundly gifted young boys of IQ 200. In P.S. Klein and A. J. Tannenbaum (Eds.) To be young and gifted (94-138). Norwood, New Jersey: Ablex.

Gross, M.U.M. (1992b). The use of radical acceleration in cases of extreme intellectual precocity. Gifted Child Quarterly. 36(2), 90-98.

Gross, M.U.M. (1993) Exceptionally gifted children. London: Routledge.

Gross, M.U.M. (1994). Radical acceleration: Responding to academic and social needs of extremely gifted adolescents. Journal of Secondary Gifted Education. 5(4), 27-34.

Hall, E.G. and Skinner, N. (1980). Somewhere to turn: Strategies for parents of gifted and talented children. New York: Teachers College Press.

Hansen, J.B. (1992). Discovering highly gifted students. Understanding Our Gifted, 4(4), 1, 11-13.

Harrison, C. (1998). Giftedness in early childhood (2nd edition). Sydney: Gifted Education Research, Resource and Information Centre, University of New South Wales.

Hollingworth, L.S. (1926). Gifted children: Their nature and nurture. New York: Macmillan.

Hollingworth, L.S. (1942). Children above IQ 180. New York: World Books.

Jackson, N.E. (1992). Precocious reading of English: Origins, structure and predictive significance. In P.S. Klein and A.J. Tannenbaum (eds), To be young and gifted (171-203). Norwood, New Jersey: Ablex.

Jackson, N.E. and Klein, E.J. (1997). Gifted performance in young children. In N. Colangelo and G.A. Davis (Eds). Handbook of gifted education (2nd edition), (pp. 460-474). Needham Heights, MA: Allyn and Bacon.

Jacobs, J.C. (1971). Effectiveness of teacher and parent identification of gifted children as a function of school level. Psychology in the Schools, 8, 140-142.

Jersild, A.T. (1960). Child psychology. Hemel-Hempstead: Prentice-Hall.

Kaufman, A.S. and Harrison, P.L. (1986). Intelligence tests and gifted assessments: What are the positives? Roeper Review, 8(3), 154-159.

Louis, B. and Lewis, M. (1992). Parental beliefs about giftedness in young children and their relation to actual ability level. Gifted Child Quarterly, 36(1), 27-31.

Moores, D.F. (1987). Educating the deaf: Psychology, principles, and practices (3rd editions). Boston: Houghton Mifflin.

Robinson, N.M. (1987). The early development of precocity. Gifted Child Quarterly, 31(4), 161-164.

Robinson, N.M. (1993a). Parenting the very young gifted child. Storrs, Connecticut: National Research Center on the Gifted and Talented.

Robinson, N.M. (1993b). Identifying and nurturing gifted, very young children. In K.A. Heller, F.J. Monks and A.H. Passow (eds.) International Handbook of Research and Development of Giftedness and Talent (507-524). Oxford: Pergamon.

Robinson, N.M. and Robinson, H. (1992). The use of standardized tests with young gifted children. In P.N. Klein and A.J. Tannenbaum (eds). To be young and gifted (141-170). New Jersey: Ablex.

Robinson, N.M. and Wiemer, L.J. (1991). Selection of candidates for early admission to kindergarten and first grade. In W.T. Southern and E. Jones (Eds). The academic acceleration of gifted children (29-50). New York: Teachers College Press.

Roedell, W.C. (1989). Early development of gifted children. In J. VanTassel-Baska and P. Olszewski-Kubilius (eds). Patterns of influence on gifted learners (13-28). New York: Teachers College Press.

Roedell, W.C., Jackson, N.E. and Robinson, H.B. (1980). Gifted young children. New York: Teachers College Press.

Rogers, K.B. (1991). The relationship of grouping practices to the education of the gifted and talented learner. Connecticut: National Research Center on the Gifted and Talented.

Silverman, L.K. (1989a). Reclaiming lost giftedness in girls. Understanding our Gifted. November, 5, 17-18.

Silverman, L.K. (1989b). The highly gifted. In J.F. Feldhusen, J. VanTassel-Baska and K.R. Seeler (eds). Excellence in educating the gifted (71-83). Denver: Love.

Silverman, L.K. and Kearney, K. (1989). Parents of the extraordinarily gifted. Advanced Development, 1, 1-10.

Silverman, L.K. and Kearney, K. (1992). Don't throw away the old Binet. Understanding Our Gifted, 4(4), 8-10.

Smutny, J.F. (1995). Early gifts, early school recognition. Understanding Our Gifted. 7(3), 1, 13-16.

Staines, J.W. and Mitchell, M.J. (1982). You and your toddler: The second year. Melbourne, Australia: Oxford University Press.

Tannenbaum, A.J. (1962). Adolescent attitudes towards academic brilliance. New York: Bureau of Publications, Teachers College, Columbia University.

Terman, L.M. (1926). Genetic studies of genius (Vol. 1): Mental and physical traits of a thousand gifted children. Stanford, CA: Stanford University Press.

VanTassel-Baska, J. (1983). Profiles of precocity: The 1982 Midwest Talent Search finalists. Gifted Child Quarterly, 27(3), 139-144.

Winner, E. (1996). Gifted children: Myths and realities. New York: Basic Books.

Witty, P. (1940). A genetic study of 50 gifted children. In G.M. Whipple (ed.) Intelligence: Its nature and nurture (401-409). 39th Yearbook of the National Society for the Study of Education.