

## Guest Editors' Comments on *The Progress and Problems of an Incredibly Talented Sister and Brother*

Educational acceleration as a curriculum option has been a much debated and divisive issue among educators for some time. Opponents of acceleration have argued that it disrupts the organizational structures of the schools and that it is not equitable because it allows an individual, or a group of learners, to get ahead of others. Critics have also expressed concerns about the possible negative social and emotional effects of acceleration.

Nancy Delano Moore brings new light to some of these issues and dispels the notion of acceleration as a negative and inequitable educational practice. She presents a case study of a brother and sister with exceptional intellectual abilities in mathematical reasoning and describes the triumphs and disappointments of the parents, the children, and their teachers as they attempt to provide educational opportunities that are chal-

lenging and appropriate. Moore's case study suggests that students with exceptional abilities can benefit academically, socially, and even emotionally from some form of acceleration.

The children in the case study demonstrate exceptional mathematical abilities. According to Moore, "R" blossomed in nursery school, was accelerated to grade 1 from kindergarten, and then found much of the curriculum throughout her elementary school years unchallenging and discouraging. "R's" brother, "M," who was accelerated to the second grade on the advice and recommendation of his first grade teacher, also found much of the curriculum unchallenging and discouraging. The case studies of these children suggest that the most beneficial provisions for such intellectually advanced children is to provide opportunities to work at levels appropriate to their abilities and achieve-

ments. According to Moore, the children thrived intellectually, emotionally, and socially when they found themselves in situations matching their exceptional abilities—when they were accelerated in some form in combination with high level summer programs and competitions.

This case study reveals the fact that many teachers and administrators fail to appreciate acceleration as part of the complement of options to be used with gifted students and are resistant to implementing the acceleration practices that are available. However, the parents in this case study were fully aware and well versed with respect to the exceptional abilities and needs of their children and were strong advocates for their children's educational needs. It is important to note that it was only with the parents' active involvement that these children were able to receive a variety of acceleration practices.

## The Progress and Problems of an Incredibly Talented Sister and Brother

*Nancy Delano Moore*

**R, a Talented Young Lady**

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At the time of this article's original publication, **Nancy Delano Moore** was Parent Liaison for the Center for the Advancement of Academically Talented Youth (CTY), and a consultant with Commonwealth Parenting Systems in Richmond, Virginia. She directed CTY Young Students Classes in Richmond for more than a decade. She works now as a writer. Her books include two on writing for middle school students. The most recent, *Writing Lessons that Teach Key Strategies*, is published by Scholastic, Inc. She also has written a memoir, *Living Every Minute*, that relates the stories of her mother's remarkable life and long illness. She continues her interest in providing optimal educational matches for gifted children and remains grateful to Dr. Julian Stanley for his pioneering work in this field.

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*A sister and brother pair with immense mathematical reasoning ability is rare. This case study traces the early education of an exceptionally intellectually talented sister and brother who were identified by the Study of Mathematically Precocious Youth (SMPY at the Johns Hopkins University). According to Dr. Julian Stanley, R and M are one of only two such pairs SMPY has identified. In addition, the experiences of the parents with education, both their own and their children's, are examined.*

*This account is based on interviews with each member of the Z family. In addition, the assistance of Professor Julian Stanley at The Johns Hopkins University is gratefully acknowledged.*

**B**orn in April 1967, R talked in paragraphs at age 2. Telling the story of Peter and the Wolf one day, she stopped in midsentence to exclaim, "What the duck should have done was stay in the middle of the water so the wolf couldn't get him." Her first teacher, a 20-year-old newcomer to the United States from Sri Lanka, was not encumbered with the notion that children learn certain skills at certain ages or grade levels. In a Montessori preschool, she taught R all that R was ready to learn.

R blossomed. She was off to a good start, and her love of learning was greatly fostered. By the time R finished nursery school, she could multiply and divide at a third-grade level. At the age of 5 years, 2 months, she could define 9 out of 10 fifth-grade words.

When kindergarten began in the fall, R found that the standard routine interfered with her thinking. The goings-on in her head interested her much more than the classroom activities. R remembered a fireman coming to the room one day. "I had seen a fireman before. I did not want to see another fireman, and I did not want to hear about another fireman. So I spent the time pinching other kids in the classroom."

Uncertain what to do with his young student, the principal kept her in kindergarten while her social skills were observed and other abilities, including mathematics, were tested. During most of these days, she was taken from the classroom for individual testing. After the assessment, the principal approved R's acceleration from kindergarten to grade 1 at age 5. The next year an experienced second-grade teacher, only a year from

retirement, succeeded in challenging R as an individual and in making her part of the group. Working alone, R completed a fourth-grade math workbook.

The next year, in a new school system, R was a third grader doing third-grade work. She was soon unhappy and her parents initiated the first of many meetings. They wanted the school system to provide R with appropriate educational opportunities.

In the next several weeks R was observed by a specialist in gifted education and she was given the WISC R. After frequent parental requests for information, a report expressed R's scores on the intelligence test in terms of standard deviations above the mean. A baffled mother asked for an IQ. "Oh no, we don't believe in IQs. She's gifted and we have programs for gifted kids." R's program was a new math workbook; unfortunately after all this to-do and 3 months, it was the same one she had finished the year before.

The workbook gave way to independent study with mathematics kits. Each kit had 20 sections with seven cards each having 30 problems. R, still working alone at her math, found that finishing one meant doing another and was discouraged. In fact, the kits had been designed to give additional practice problems to youngsters having difficulty in math.

For R, fourth, fifth, and sixth grades had little challenge. In spite of independent study in math, when she finished elementary school after sixth grade, she was not as many years advanced as when she began school. She was working at a seventh-grade level in the sixth grade. One wonders if the educational process had slowed her down.

Nevertheless, she set a precedent in her school system and began Algebra I in seventh grade. After a few weeks R, then age 11, told her parents she needed to move through the material more rapidly. Her parents asked that R be allowed to work at her own pace. The teacher agreed to the arrangement, saying later she felt certain it would fail and then the parents would not ask again.

But R accomplished her self-directed learning superbly. By March she finished Algebra I with an A average. She began geometry, working along in the back of her classroom. By the school year's end she finished half of the text.

In January of her seventh-grade year (1978-79), R took the College Board's Scholastic Aptitude Test (SAT) as part of The Johns Hopkins University Study of Mathematically Precocious Youth (SMPY) Talent Search. She scored 730M and 690V at age 11. (R's total score of 1,420 was second highest of the 3,673 Talent Search participants that year; the highest scoring participant (whose score was 1,450) was in the Talent Search for the second time. Only 1% of college-bound female high school seniors score 1,350 on M and V; most of them are 17 or 18 years old and have taken many mathematics courses.) These high scores certified her exceptional academic prowess for herself, her parents, the school, and SMPY. Nevertheless, that summer she stayed home, took a typing class, and completed geometry.

In the eighth grade, R studied Algebra II and trigonometry in a middle school of grades 6, 7, and 8. Her former Algebra I teacher took a personal interest in facilitating R's education and arranged with a teacher at the high school to send tests and quizzes to R at the middle school. R completed the assignments and returned them to the high school teacher. She continued to earn As in all her work. She took SATs again and scored 750M and 710V in the eighth grade at age 12.

During the late spring of R's eighth-grade year, Dr. Julian Stanley, Director of SMPY at Johns Hopkins, arranged a get-

together in Baltimore for the youngsters who had scored 700 or more on SAT-M before age 13. R and her parents attended. R remembered it as "really fun" and said that she was much more outgoing in that group. Her parents commented, "We saw R as a different person during those 3 hours. This meeting with her peers changed her. She was loquacious and happy."

The summer after grade 8, R's parents sent her to music camp for 6 weeks. In addition to the activities there, she carried her school books and completed independent study of Math Analysis and Latin I. She was a diligent youngster that summer in a cabin with her age peers. She requested a move to the next age group—where she was in school—but was told by the camp director that she needed to learn to get along with everybody.

The following summer, after grade 9, Dr. Stanley recommended the program at The Ohio State University as a good experience for R. It would also supplement the lack of math in her high school. Her parents urged her, now 14 years old, to attend the 8-week summer of 1981 program at Ohio State and R agreed.

Ohio State has one of the highest level pure math programs in the country under the direction of Professor Arnold Ross. Even though only one person younger than R had attended before, her equally balanced abilities in the math and verbal areas as well as her successful completion of calculus (5 on the Advanced Placement Program Calculus AB exam in grade 9) made her a good candidate.

The experience at Ohio State may be the biggest difference in R's life. Certainly it was the most suitable educational environment she had ever known. For 8 weeks, she lived and worked with teenagers who were her intellectual equals. Here, in this setting, she was no longer the smartest. She worked hard and had "so much fun," too. She had many interests like studying Shakespeare and music in common with the other students. The opportunity to be away from home, to learn and socialize as well as have excellent role models, made a happy time for the petite, brown-haired teenager. Since then, she has returned to Ohio State for 8 weeks each summer. In recent years, she has acted as a junior assistant, grading papers and teaching other youngsters.

R spent 3 years in her large high school. Conscientious and hardworking in her honors and advanced placement classes, she also undertook independent study in English, Latin, and math. Extracurricular activities such as math contests, forensics, Battle of the Brains team, Latin competitions called Certamen, and youth orchestra showed her brilliance coupled with a modest demeanor which won her much respect. She exerted quiet leadership among her friends. When she found an activity such as youth orchestra challenging and enjoyable, she persuaded fellow violinists to join her.

When she graduated at 16 to go to Harvard, she was a National Merit Scholar and had the highest GPA in her school's history. The summer after graduation she was honored by the American Academy of Achievement, which recognizes intellectually promising youths. At that time, she was included in a group of students with IQs of 180 and above. Her Latin teacher wrote on a recommendation to Harvard, "R is the epitome of the ideal student, child, and friend. She is truly one in a million."

R experienced subtle and not so subtle effects of being "different" while growing up. Many times, especially when she met with ostracism, her parents agreed with her that some people do not appreciate intellectual talent. She comments on age-peer pressure in high school, "I always tried to make

myself seem normal; I never talked about math with anyone." At home she found support and nurture, "In our family, we are not different from each other. My father is the biggest influence in my life because he directed me to books which challenged me. All in all, the best thing my parents have done is encourage me to do whatever I feel like with the learning." Her mother had the last word, "We remind the children that great intellectual ability does not make a superior or better person."

Dr. Julian Stanley, Director of the Study for Mathematically Precocious Youth (SMPY) at The Johns Hopkins University, says of R, "Her very high, equally balanced verbal and math scores (730M and 690V at age 11, 750M and 710V at age 12) make her one of the top half dozen intellectually talented students we have identified in our talent searches." What makes her even more uncommon is that she is female. From 1971 until 1978 no girls had scored greater than 700 on the SAT-M before age 13. To date, SMPY has identified only 37 girls with scores greater than 700 out of the more than 50,000 high-ability girls tested in its whole history.

## M, a Remarkable Brother

R is an exceptional young person. Making her precocity and academic talent more noteworthy is the extraordinary mathematical ability of her younger brother M, born April 1971. Indeed, M's mathematical prowess exceeds R's. Such a brother-sister pair with immense mathematical reasoning ability is rare. Dr. Stanley, founder (in 1972) and director of the most comprehensive nationwide search for youth who reason extremely well mathematically, commented that SMPY had identified several brother groups, but only one brother-sister combination with talent comparable to R and M had been found.

When M entered preschool at age 3 $\frac{1}{2}$ , he showed a distinct preference for mathematical activities. Indeed, he seemed not to want to learn his letters at all. The same Montessori teacher who earlier taught R wanted to enhance his verbal skills. She gave him books. When his mother sat with him to read the first one, M exclaimed, "Oh, look, there's a one." Turning the pages as fast as he could, he continued, "and a two, and a three, and a four, and a five" and so on. He wanted only to read the page numbers. Later he learned his letters quickly; in September he seemed to know none; by mid-October, he was reading fluently.

In first grade, M read well and was already adding, subtracting, multiplying, and dividing. In a large school for the first time, and because he was socially and emotionally immature as well as physically small, his parents thought first grade was the right place for him. On the fourth day of the school year, his teacher called to say, "We have nothing to teach him in first grade."

M was moved to second grade. Shortly after, he was tested for the gifted program. With scores just below the cutoff point, he was not invited to participate. Several months later, his teachers told his mother that M was well placed in an average math group; after all, he was already a year ahead. Mrs. Z protested that he was an above average student and noted his skills and performance. His teachers said that he could not move because he was not ready. To "get him ready," Mrs. Z taught him at home.

In the fourth grade, M was in the top math group and was given the fifth grade text, the skills of which he had already mastered. He also was able to multiply seven digit

numbers by seven digit numbers in his head. Sent to the board and given such a problem one day, he wrote just the answer. Incredulous, the teacher required M to show all his calculations.

Mrs. Z wrote of that time, "Math was not being presented as something fun and intriguing but as tedious and boring. Children who were capable of doing mental calculations were not allowed to do them and lost their capability. A year later, M no longer multiplied seven digits by seven digits mentally and didn't even attempt to do one digit by two digits mentally." Discouraged and not particularly self-motivated, M pursued his interests in sports, playing on baseball and soccer teams. He began working with a computer at home. In the hours after school, he read and watched television.

After fifth grade, the situation at school became increasingly difficult. M seemed trapped in a vicious circle. The school did not acknowledge, or on their own initiative provide for, his exceptional mathematical talent. Once ignored, M felt he needed to prove he knew the math and that made him seem arrogant. Teachers would then chastise him for his behavior. The circle took its toll on student, teachers, and parents.

In seventh grade, M took Algebra I. It was obvious to teachers, parents, and peers that he was apt and highly gifted in math. Dr. Stanley wrote in *The Gifted and the Creative* (Stanley, George, & Solano, 1977) of students like M and the predicament they face with such placement:

The first year of algebra usually causes serious problems for youths who are among the ablest few percent of their classmates in mathematical reasoning ability ... being incarcerated in it for a whole year gives the apt student no really appropriate way to behave. There is, however, no suitable way to while away the class hours when one already knows much of the material and can learn the rest almost instantaneously as it is first presented. (pp. 84-85)

As Dr. Stanley observed, Michael was a mathematical-ly gifted youth who had problems in Algebra I. A teacher with pedantic methods aggravated the situation. She insisted that all his Algebra I be done "her way." M was spending a great deal of time on what were, for him, very easy assignments. Moreover, the teacher would not give any credit for the problem if he made a careless error. For M, working such easy problems was routine and boring. It was hard to avoid careless mistakes.

In the seventh grade, M took SATs in the Center for the Advancement of Academically Talented Youth Talent Search and scored 490V and 750M at age 11. Desperate for an appropriate summer experience for him, his parents sent him to a 3-week summer program sponsored by CTY. He studied mathematics. He found the intelligence that isolated him at home no longer was a factor in his relationships with others. He told an NBC news reporter, "In my regular school I have to act more dumb than I am."

In the eighth grade, M studied Algebra II-trig, sitting in an Algebra I class. The school provided no full-time math instructor for these studies. His mother helped him and a teacher at another school mailed him tests. An itinerant math teacher visited the school once a week to provide M and another youth math enrichment. In January of his eighth-grade year M took the SAT again and scored 500V and 800M. Only 27% of college-bound male high-school seniors score 500-800V, and only 1% score 760-800M.

## The Parents

R and M's parents are well-educated. The father, Mr. Z has a B.A., M.D. and Ph.D. degrees, and Mrs. Z has B.S. and M.D. degrees. "Our whole ethnic tradition values education above almost everything else. We are people of the book."

Mr. Z, the only child of a physician in academic medicine, was educated at a public high school associated with a large Midwestern university. By grade 10 he had finished the math his school offered. His mother made many visits to school administrators insisting he be given permission to take a college-level math course in the eleventh grade.

His senior year he took no math and felt this was "terrible." He entered Harvard in the early 60s after his "good, but limited" education. Even though he was widely read, he felt unprepared for his freshman year. All along he has wanted R and M's education to prepare them well for anything.

Mrs. Z grew up the middle child and only daughter of a Hebrew teacher. She loved to read, but her mother feared she was reading too much. She remembers walking home from the library with books stacked so high in her arms she could not see the sidewalk. Meeting her at the door, her mother wondered aloud if she should take away her daughter's library card, "You should be outside playing with friends more and reading less."

In a special class during high school, Mrs. Z and a few other students were given a math text, assigned a room and teacher/mentor, and worked through the material at their own pace. There she learned two things applicable to her children: one could learn independently and one could learn more than a year of material in a year of study.

Mrs. Z gave up her medical career while the children were young. Parenting and educating R and M have been fulltime work for her. She devoted much energy and time to seeing that the children's intellectual and emotional needs were met. "You have to keep your eyes and ears open all the time," she said. Through the years, she maintained detailed files, keeping the children's papers, saving correspondence, and accumulating notes on opportunities and experiences affecting them.

In addition, R and M have been frequent participants in math contests. Many times it was Mrs. Z who discovered the contest and informed the school. She has been accused of collecting prizes for them, of always wanting them to win. She explains her motive, "Competition is a matter of practice—any test is practice—and there are not that many hard things of which a kid like this can take advantage. Besides, they like it."

The advocacy for M and R has included M's placement in advanced math in second grade. Mr. Z is confident that had they not intervened in the second grade and pushed the school to place M with the advanced math group, M would be in an average math class today getting Bs. M would have learned to be average.

Pushing the schools has been misunderstood to be pushing the children. The Zs report that although never articulated, they were made to feel like "pushy parents." The Zs insist they have been pushing the school system, not their children. Dr. Stanley agrees that the very gifted are moving on their own. "The best performers," he says, "are self-motivat-

ed." For youngsters with this kind of ability, only extraordinary opportunities will do. The school system has often seen problems rather than possibilities with the proposals made by the Zs. At conferences school personnel explain why an idea will not work. Precedent and social acceptance are mentioned as problems. R had to take a fourth year of English in high school despite a TSWE of 60 + and 690V at age 11 and her extraordinary background in reading. Not to do so would mean others might request the same exception. M's moving further ahead in math in grade 7 would be bad for his "social acceptance" according to a teacher.

M's personality and development seem to have affected the school's response. A brusque youngster at times, he is socially inept and emotionally immature. Mr. Z sums it up, "The difference to the schools may be in a sweet little girl whose friends were surprised to know she was number one in their class and a somewhat immature hellion." In all fairness to M, a prepubescent, quiet, small, brilliant 12-year-old, the problem seems larger than a different personality.

Additionally, the schools seem to have learned tactics to deal with parental advocacy, and the Zs feel this was another reason their situation with M was difficult. Certainly the relationship between parents and school is strained. "Now the school has reasons ready when we go request a change. They seem able to obstruct," Mrs. Z said. There still is no policy for educating the student with an IQ over 150. Teachers, counselors, principals, and administrators meet these situations often uninformed and defensive. From time to time the suggestion to the Zs has been that R and M are too gifted—the gifted program cannot reach them.

## Conclusion

While a brother-sister combination as able as M and R is extremely rare, many intellectually talented youth throughout the nation are languishing in schools geared for equality. Parents and educators need to know when one of these students belongs to them. Then we must be bold and encourage these youth with extraordinary educational opportunities. R said there was one thing she would change about her education. "I would have my parents push harder to meet my needs in school." The academically talented cannot be adequately educated or emotionally nurtured in the lock-step, prescribed age-in-grade schooling prevalent today. There are risks to be taken for them.

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