

Genius May Be an Abnormality: Educating Students with Asperger's Syndrome, or High Functioning Autism

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I am becoming increasingly concerned that intellectually gifted children are being denied opportunities because they are being labeled either Asperger's or high functioning autism. Within the last year I have talked to several parents, and I was disturbed by what they said. One mother called me and was very upset that her six-year-old son had Asperger's. She then went on to tell me that his IQ was 150. I replied that before people knew about Asperger's Syndrome, their child would have received a very positive label of intellectually gifted.

In another case the parents of an Asperger teenager called and told me that they were so concerned about their son's poor social skills that they would not allow him to take computer programming. I told her that depriving him of a challenging career in computers would make his life miserable. He will get social interaction by shared interests with other computer people. In a third case, a super smart child was not allowed in the talented and gifted program in his school because he had an autism label. Educators need to become aware that intellectually satisfying work makes life meaningful.

It is essential that talented children labeled either high functioning autism or Asperger's be trained in fields such as computer programming, where they can do intellectually satisfying work. [Click here](#) to read my paper entitled 'Choosing the Right Job for People with Autism or Asperger's Syndrome.' For many people with Asperger's, and for me, my life is my work. Life would not be worth living if I did not have intellectually satisfying work. I did not fully realize this until a flood destroyed our university library. I was attending the American Society of Animal Science meetings when the flood occurred. I first learned about it when I read about it on the front page of *USA Today*, a national newspaper. I grieved for the "dead" books, the same way most people grieve for a dead relative. The destruction of books upset me because "thoughts died." Even though most of the books are still in other libraries, there are many people at the university who will never read them. To me, Shakespeare lives if we keep performing his plays. He dies, when we stop performing them. I am my work. If the livestock industry continues to use equipment I have designed, then my "thoughts live" and my life has meaning. If my efforts to improve the treatment of cattle and pigs make real improvements in the world, then life is meaningful.

I have been reading, with great satisfaction, the many articles in magazines about Linux free software. People in the business world are not able to comprehend why the computer

people give their work away. I am unable to think about this without becoming emotional. It is no mystery to me why they download their intellectual ideas into the vast, evolving and continually improving computer operating system. It is because their thoughts will live forever as part of the "genetic code" of the computer program. They are putting themselves into the program and their "intellectual DNA" will live forever in cyber-space. As the program evolves and changes, the code they wrote will probably remain hidden deep within it. It is almost like a living thing that is continually evolving and improving. For both me and for the programmers that contribute to Linux, we do it because it makes our lives more meaningful.

Continuum of Traits

There is a continuum of personality and intellectual traits from normal to abnormal. At what point does a brilliant computer programmer or engineer get labeled with Asperger's. There is no black and white dividing line. Simon Baron-Cohen, an autism researcher at the University of Cambridge, found that there were 2 ½ times as many engineers in the family history of people with autism. I certainly fit this pattern. My grandfather was an engineer who was co-inventor of the automatic pilot for an airplane. I have second and third cousins who are engineers and mathematicians.

At a recent lecture, Dr. Baron-Cohen described three brilliant cases of Asperger's Syndrome. There was a brilliant physics student, a computer scientist, and a mathematics professor. It is also likely that Bill Gates has many Asperger's traits. An article in *Time Magazine* compared me to Mr. Gates. For example, we both rock. I have seen video tapes of Bill Gates rocking on television. Articles in business magazines describe his incredible memory as a young child.

There is evidence that high functioning autism and Asperger's Syndrome have a strong genetic basis. G. R. DeLong and J. T. Dyer found that two thirds of families with a high functioning autistic had either a first or second degree relative with Asperger's Syndrome. Sukhelev Naragan and his co-workers wrote, in the *Journal of Autism and Developmental Disorders*, that educational achievement of the parents of an autistic child with good language skills were often greater than those of similar parents with normal children. Dr. Robert Plomin at Pennsylvania State University states that autism is highly heritable.

In my book, *Thinking in Pictures*, I devote an entire chapter to the link between intellectual giftedness and creativity to abnormality. Einstein himself had many autistic traits. He did not learn to speak until he was three, and he had a lack of concern about his appearance. His uncut hair did not match the men's hairstyles of his time.

Genius is an Abnormality?

It is likely that genius in any field is an abnormality. Children and adults who excel in one area, such as math, are often very poor in other areas. The abilities are very uneven. Einstein was a poor speller and did poorly in foreign language. The brilliant physicist, Richard Feynman, did poorly in some subjects.

A review of the literature indicates that being truly outstanding in any field may be associated with some type of abnormality. Kay Redfield Jamison, from Johns Hopkins School of Medicine, has reviewed many studies that show the link with manic depressive illness and creativity. N.C. Andreason at the University of Iowa found that 80 percent of creative writers had mood disorders sometime during their life. A study of mathematical giftedness, conducted at Iowa State University by Camilla Persson, found that mathematical giftedness was correlated with being near-sighted and having an increased incidence of allergies. I recently attended a lecture by Robert Fisher at Barrow Neurological Institute in Phoenix, Arizona. He stated that many great people had epilepsy, people such as Julius Ceasar, Napoleon, Socrates, Pythagoras, Handel, Tchaikovsky, and Alfred Nobel. An article in the December 2001 issue of *Wired* magazine discussed the link between autism and Asperger's, and engineer and computer programming. The incidence of autism and Asperger's has increased in the children of technology company employees. A little bit of autism genes may provide an intellectual advantage and too much of the genetic may cause a severe case of autism.

Types of Thinking

There appear to be two basic types of thinking in intellectually gifted people who have Asperger's or high functioning autism. The highly social, verbal thinkers who are in the educational system need to understand that their thought processes are different. The two types are totally visual thinkers like me; and the music, math and memory thinkers which are described in Thomas Sowell's book, *Late Talking Children*. I have interviewed several of these people, and their thoughts work in patterns in which there are no pictures. Sowell reports that in the family histories of late talking, music math and memory children, 74 percent of the families will have an engineer or a relative in a highly technical field such as physics, accounting, or mathematics. Most of these children also had a relative that played a musical instrument.

Every thought I have is represented by a picture. When I think about a dog, I see a series of pictures of specific dogs, such as my student's dog or the dog next door. There is no generalized verbal 'dog' concept in my mind. I form my dog concept by looking for common features that all dogs have, and no cats have. For example, all of the different breeds of dogs have the same kind of nose. My thought process goes from specific pictures to general concepts, where as most people think from general to specific. I have no vague, abstract, language-based concepts in my head, only specific pictures.

When I do design work, I can run three-dimensional, full motion "video" images of the cattle handling equipment in my head. I can "test run" the equipment on the "virtual reality" computer that is in my imagination. Visual thinkers who are expert computer programmers have told me that they can see the entire program "tree," and then they write the code on each branch.

It is almost as if I have two consciences. Pictures are my real thoughts, and language acts as a narrator. I narrate from the "videos" and "slides" I see in my imagination. For example, my language narrator might say, "I can design that." I then see a video of the

equipment I am designing in my imagination. When the correct answer pops into my head, it is a video of the successful piece of equipment working. At this point, my language narrator says, "I figured out how to do it." In my mind there is no subconscious. Images are constantly passing through the computer screen of my imagination. I can see thought processes that others have covered up with language. I do not require language for either consciousness or for thinking.

When I learned drafting for doing my design work, it took time to train my visual mind to make the connection between the symbolic lines on a layout drawing and an actual building. To learn this I had to take the set of blueprints and walk around in the building, looking at the square concrete support columns, seeing how the little squares on the drawing related to the actual columns. After I had "programmed" my brain to read drawings, the ability to draw blueprints appeared almost by magic. It took time to get information in, but after I was "programmed," the skill appeared rather suddenly. Researchers who have studied chess players state that the really good chess players have to spend time inputting chess patterns into their brains. I can really relate to this. When I design equipment I take bits of pictures and pieces of equipment I have seen in the past and re-assemble them into new designs. It is like taking things out of the memory of a CAD computer drafting system, except I can re-assemble the pieces into three-dimensional, moving videos. Constance Mibrath and Bryan Siegal at the University of California found that talented, autistic artists assemble the whole from the parts. It is "bottom up thinking," instead of "top down thinking."

Teachers and Mentors

Children and teenagers with autism or Asperger's need teachers who can help them develop their talents. I cannot emphasize enough the importance of developing a talent into an employable skill. The visual thinkers like me can become experts in fields such as computer graphics, drafting, computer programming, automotive repair, commercial art, industrial equipment design, or working with animals. The music, math, and memory type children can excel in mathematics, accounting, engineering, physics, music, translating engineering and legal documents, and other technical skills. Unless the student's mathematical skills are truly brilliant, I would recommend taking courses in library science, accounting, engineering, or computers. Learning a technical skill will make the person highly employable. There are few jobs for mediocre mathematicians or physicists.

Since social skills are weak, the person can make up for them by making themselves so good at something that people will hire them. Teachers need to council individuals to go into fields where they can easily gain employment. Majoring in history is not a good choice because obtaining a job will be difficult. History could be the person's hobby instead of the main area of study in school.

Many high functioning autistic and Asperger teenagers get bored with school and misbehave. They need mentors who can teach them a field that will be beneficial to their future. I had a wonderful high school science teacher who taught me to use the scientific

research library. Computers are a great field because being weird or a "computer geek" is okay. A good programmer is recognized for his/her skills. I know several very successful autistic computer programmers. A bored high school student could enroll in programming or computer-aided drafting courses in a local community college.

To make up for social deficits, autistic individuals need to make themselves so good that they are recognized for brilliant work. People respect talent. They need mentors who are computer programmers, artists, draftsmen, etc., to teach them career skills. I often get asked, "How does one find mentors?" You never know where a mentor teacher may be found. He may be standing in the checkout line in a supermarket. I found one of my first meat industry mentors when I met the wife of his insurance agent at a party. She struck up a conversation with me because she saw my hand embroidered western shirt. I had spent hours embroidering a steer head on the shirt. Post a notice on the bulletin board at the local college in the computer science department. If you see a person with a computer company name badge, approach him and show him work that the person with autism has done.

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