

Gifted and Learning Disabled: A Neuropsychologist's Perspective

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From *Gifted Education Communicator*. 2005 36(3&4). Reprinted with permission.

A neuropsychologist is not the first professional a family consults. I still spend time correcting people when they ask if I am a "Nurse/Psychologist." Neuropsychologists work with neurologically-based behavior concerns such as problems with inattention, memory, planning, judgment, emotional regulation, and the like. Disorders of cognition and emotion are intertwined with neurobiology. Sometimes problems are acquired through an illness or injury; sometimes they are the expression of a genetic vulnerability. The gifted are not immune, although they may present a more complicated picture.

Mind and brain are inseparable in sickness and in health. The nervous system responds and adapts to the demands we place on it. Every skill we learn and every memory we form lasts because of changes in the brain; it is stored as a chemical and electrical trace. A whole child approach to the twice-exceptional child should include a child's social context (such as family, school, and friendships); it will also include mental health and neurobiological wellbeing.

Neuropsychologists tend to see a wider range of issues, and the profession is less perplexed by the idea the great ability and inability can sit side-by-side. It is routine, and very few neuropsychologists doubt the idea of twice exceptional. We see physicians, artists, judges, and professors who have suffered small strokes or brain injuries from low impact automobile accidents. We see brilliance and deficits in combination as our profession. A gifted child with an attention deficit, dyslexia or an auditory processing problem is another variant. Not only do we find it plausible that a child can be twice exceptional, we find it logical.

This is not a common perspective; despite thirty-plus years of documentation that gifted children can be learning disabled or otherwise neurologically compromised (Baum and Owen, 1988; Fox, Brody, and Tobin, 1983; Whitmore, 1980). One of the greatest difficulties in working with twice-exceptional children is helping school personnel move beyond the "One Label per Customer" model. Because of this mode of thinking, children tend to be defined by their gifts or their deficits, but not both. Once one label has been applied to a child, the quest for answers ends. The child identified as gifted receives little support even when learning disabilities are identified. The child identified as learning disabled is given remedial services, but rarely challenged or offered acceleration. In fact, teachers' usually lower standards for children identified as learning disabled, even when they are intellectually advanced (Richey & Ysseldyke, 1983).

Often the twice-exceptional child is identified as neither because an inferior mediocre performance in a bright child can seem "average." They tend to drift through classes underachieving, but blending in. Their difficulties remain unaddressed and their potential undeveloped. They receive nothing. However, because they get by, the resources go elsewhere. The cumulative effect is slower academic gains and falling further behind in expressing their potential.

Being gifted may allow you to compensate more gracefully, but it doesn't buffer us from the neurological vagaries of life. We tend to frame the question of the twice-exceptional backwards, which contributes to our collective myopia. Instead of asking why gifted children should have learning disabilities, we should be asking, "Why shouldn't they?" Giftedness provides no immunity against genetic vulnerabilities or injuries. We are all susceptible to tiny chromosomal variants and genetic repeats. Intellectual ability doesn't protect from cancer, diabetes or toxin exposure, nor does it cushion impact in a car accident. Gifted children are not immune from any disorder. Michael Pyryt (2005), suggests it would be reasonable to consider that gifted children would have at least the same incidence of these disorders as would children in general, unless we find good evidence to the contrary.

Anyone who has seen a brilliant colleague recover from a small stroke or concussion has seen deficits and brilliance co-exist. Newton suffered from mercury poisoning in 1677 and in 1692 as a consequence of his scientific experimentation. Colleagues and friends noted progressive cognitive decline and psychotic thinking after each episode – with only partial recovery (Klawans, 1990). Only Newton's research on optics predated his first exposure. Although impaired, he went on to reckon the movement of the planets, provide a foundation for physics and the understanding of gravity, and independently derive calculus. Newton himself observed that he lacked his "former consistency of mind."

We are only marginally comfortable with the idea that the psyche dwells within an internal organ. What we see is shaped by what we know, and we are blindest to the disabilities that do not fit our preconceptions. Most of us have a narrow perspective on the range of neurological "faults" in the wiring. For example, few of us know that learning disabilities and psychiatric disorders can be acquired. Learning about the twice-exceptional is often the unlearning of suppositions. A gifted mind is housed



in a delicate structure that has the consistency of Jell-O. The long cables connecting one neuron to another have the texture of wet spaghetti. A car accident at seven miles per hour can send this soft mass careening around in the skull. The soft spaghetti-like strands are pulled, twisted, and compressed – shearing and damaging many of them in the process. The gelatinous brain slides and pivots across the knifelike ridges that line basin of the skull, often bruising against the hard surface of the skull as it ricochets.

As a neuropsychologist, I know that I am one blow away from being a janitor with three advanced degrees. We can protect our child's gifts by requiring sports helmets and teaching that seat belts are not optional. We can also acknowledge that high fevers, anoxia from asthma, mild head injuries, seizures, and the like may have surprisingly significant consequences. The brain can have precisely located skills as well as more complex systems. Recently, researchers found neurons in the visual area of the cortex that fire only to pictures of Jennifer Anniston (Quiroga, Reddy, Kreiman, Koch, & Fried, 2005). While the loss of a Jennifer Anniston neuron might not be a complete tragedy, the idea that some of our skills hang by such a fragile tether is justifiably unnerving.

It does not make it easier to identify learning disabilities and similar neurologically-based issues when they arrive in a variety of strange permutations. When someone says they have dyslexia, the correct response should be "which one?" There are nine identified subtypes of dyslexia, as well as five identified kinds of attention problems, each of which responds best to a different intervention. These subtypes have been identified in a normal population, on and for whom the tests were developed. Gifted children can be even more challenging to identify because their coping strategies can help or hinder identification.

We are blind to the disabilities we are unfamiliar with or those we think that we understand. Preconceptions shape what we observe. For example, we have no difficulty imagining a brilliant child with a speech impediment but we struggle to imagine a brilliant child with a reading impediment. Listening involves hearing and blending sounds into words; speaking involves making and blended sounds into words. Reading is correctly perceiving and sequencing visual marks that stand in for sounds that can be blended into words. Reading is the more complicated task.

Identifying the problem

Given all of this, the challenge is how to provide a practical, whole-person understanding. Most twice-exceptional children would respond well to minor accommodations and a better understanding of their relative strengths and weaknesses. Ironically, the assessment

process itself can sometimes hinder understanding a child because it is usually superficial. It is based on limited time, limited resources, and limited insurance reimbursement rather than the actual requirements needed to make the diagnosis.

Attention Deficit Disorder

Attention Deficit Disorders are the "poster children" for the problem of misidentification and misdiagnosis. Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD) are the most commonly diagnosed childhood disorders; it is rare that a child comes through my door who does not have someone championing the diagnosis. ADD is supposed to be a "diagnosis of exclusion," meaning physicians and psychologists are supposed to rule out every other disorder or problem that might disrupt attention before making the diagnosis. Yet most children are given the diagnosis after a 15-minute appointment with the pediatrician and a behavior rating scale. Inattention is easily disrupted by any number of other core problems. It is difficult to attend when a child is depressed, anxious, fatigued, under-challenged, learning disabled, hearing or vision impaired, preoccupied with problems at home, head injured, madly in love, hungry, ill, or otherwise compromised. There is only one mention of gifted in the entire Diagnostic and Statistical Manual (DSM-IV TR), the book used to codify and guide the diagnostic process. The listing is under the ADD section and specifically mentions assessing the fit between a child of high ability and an under-challenging classroom. Children who have attention problem in one setting or with one teacher have a problem of fit, not a Ritalin deficiency.

A diagnosis should help drive good treatment decisions and should be part of a whole-child perspective. Often, because of the "one label per customer" thinking, the inquiry often stops once a child is identified with a disorder. However, children are complex little people. Forty percent of children correctly identified as having ADD also have learning disabilities. Even more of them have problems with conduct, oppositional behavior and depression. A correct diagnosis is not a solution or a treatment; it is a start.

Understanding Behaviors

Parents bring children to be assessed, not disorders. Gifted children, being their own quirky selves, tend to present in any manner by the classic presentation of anything. They are complicated little people, usually being cared for by thoughtful, intelligent parents. These parents have usually spoken with teachers, friends, pediatricians, and relatives long before the come to

see me. Yet the complexity of the gifted children often flummoxes parents as well as professionals. Often the starting point for understanding a child's difficulties begins something like this:

"We were asked to come in for a parent teacher conference. Our son's teacher said his book report was awful. He did half the required number of pages. What he handed in was chaotic and disorganized, and he didn't seem to care about doing it. The school counselor suggested he might be ADD because he just doesn't seem to focus when he is asked to do in-class assignments. He doesn't do them, does them badly, or just makes up his own assignment and does that instead. Getting him to do homework is a struggle. Do you think he has ADD? Or is he in the wrong place in a GT program? Are we asking too much from him or does he need a kick in the rear?"

Although it is a deviation back to my roots as a family therapist, parents tend to come in with a difference in opinion. Usually the father is the one who thinks he needs to buck up and the mother thinks he would do better with more support. Both parents are usually bright, dedicated parents who have read several advice books and talked to several professionals before walking through my door. When they walk in, they bring conflicting advice and opinions, and often several possible diagnoses (formal and informal.) Inevitably someone thinks he has ADD. But the range of problems that could explain this child's difficulties would fill a shopping list.

Emotional Health

As with the issue of misdiagnosis, there are no precise statistics on the number of children who are gifted and carry a psychological diagnosis, even though some advocates for gifted children (e.g., Boodoo, Bradley, Frontera, Pitts & Wright, 1989; Coleman & Gallagher, 1992; Tallent-Runnels & Sigler, 1995) have estimated that between 4.5% (Davis & Rimm, 1994) and 20% (Minner, 1990) of gifted students may suffer mental health problems. Depression and anxiety can dramatically undermine cognitive performance on standardized IQ tests; they also disrupt motivation, focus, and creativity. In children, depression can present as irritability, which often alienating those who care most.

Language

Children can have a wide range of disorders, including problems in understanding and using expressive language or problems with written expression (the articulate child who becomes plodding and tongue-tied when asked to write the same ideas). Some wrestle with

reading, struggling to grasp the relationship between sounds and symbols or tracking and sequencing the information in the line of text. Twenty-five to fifty percent of these children have a dyslexic parent (DSM-IV TR). A parent may watch his daughter struggle with the same problems that he did in school, which often evokes painful memories and resentment that can color interactions with teachers and administrators. Most children with dyslexia also have broader language problems, which may not be identified once the label "dyslexia" has been applied.

Other children have "prosody" problems: they seem to have the words but not the music of a conversation. Tone of voice and nuances of body language are lost on them. Imagine being the teenager who misses all the cues that it is time to go. His friend looks at his watch and says, "It's been great talking to you." He stands up and walks towards the door. All of this is opaque, until the friend finally becomes exasperated and says, "You really need to go!" This child lives in a world where others seem clumsy, abrupt and perplexing. Often this kind of problem is associated with Autistic Spectrum Disorders or Non-Verbal Learning Disabilities, but it is not unique to them. Prosody problems can stand alone.

Auditory Processing

Central Auditory Processing Deficits (CAPD) have become a popular concern in the gifted community, but few people understand the definition or how it is distinct from a hearing loss. CAPD is a listening problem that is not measured by the hearing test at school. Most of us remember trooping onto the school bus with the little black headphones. We raised our hands when we heard the tone. The test did not include trying to pick out one conversation against ambient noise or competing conversations, or following along despite a neighbor's heavy accent. Children with CAPD can seem like they have attention problems because they eventually fatigue and tune out. As a useful analogy, remember the last time you attended the long, loud company party. Eventually, you may have found yourself nodding politely and making appropriate "hmm" and "um" noises, while glazing over. Children with auditory processing problems have the exact same difficulties as part of their daily life; they spend their days trying to screen out conversations at normal volumes that most of us can simply ignore without effort. These children are, experientially, trying to going to school at a cocktail party. It results in all of the same fatigue, disinterest and avoidance that happens to adults in that setting, but eight-year-olds handle the problem with the usual grace and social skill of eight-year-olds.



Learning and Memory

Children with learning or memory problems may have superb auditory recall and poor recall of visual information (or visa versa). It is helpful to know which channels of communication are strengths and to use these when the goal is learning content. Basic questions that an assessment can illuminate include:

- 1 Does repetition help?
- 2 Is recall accurate or distorted?
- 3 Is recognition memory intact?
- 4 Does this child group information meaningfully or try to learn it in random fashion?
- 5 Is short-term or long-term recall compromised?
- 6 Do cues help or do they make no difference?

Attention

The average gifted child enters the classroom knowing 2/3 of the material that will be taught in the coming year. Few seven year olds use their free time constructively when they are bored. This is easily misunderstood as a behavior or attention problem, when it is a problem of poor academic fit.

Inattention is a problem if it interferes with a child's ability to interact with his peers, learn, and demonstrate what he knows. Inattention can include problems with: simple focus, sustaining over time, sustaining attention under distraction, shifting attention between tasks, or allocating attention wisely. Often children are paying attention—they just are not pay attention to what you want them to. Jeremy is attentively drilling a hole in the top of his desk with a pencil. Elaine is mentally refining her imaginary world, and is currently tinkering with its political structure. Children with a correct diagnosis of an Attention Deficit Disorder tend to have higher rates of specific co-occurring conditions, such as learning disabilities, oppositional behavior, and even a pattern of disregard for the rights of others.

Executive Functioning

Executive functioning or complex attention includes: planning, judgment, delaying gratification, self-monitoring, and impulse control. All children tend to lack wisdom, but some seem to have remarkably bad judgment. They become a problem for others because they careen along following each whim without holding the larger perspective in mind. They are often unaware of the mayhem they leave behind them, although the adults around them are not. The problem with bad judgment is that you have bad judgment. However, this so-called "bad judgment" is often driven by a compromised neurological system. Most children with ADD will also have problems with executive functioning, although it is often not addressed as a specific problem. It is also a

particularly common consequence of car accidents, particularly those in which the child or teenager is unbelted. These accidents can be relatively minor while causing significant harm.

Sensory and Motor

Can the fingers do what the mind can imagine? Bright minds are often housed in the bodies of six-year-olds. What they can conceive of has to be executed by chubby little six-year-old fingers, with limited success and much frustration. For children with fine motor delays or poor dexterity, the frustration is even more pronounced. Imagine being asked to write for a day with your non-dominant hand. Your memos and reports would probably start getting shorter along with your patience. When the going is slow and laborious to write, book reports do not get done. A colleague told me about one of his gifted clients who spent five-minutes looking at a picture of a baby bird standing next to a broken eggshell. He had been asked to write a sentence. When asked about the delay, he explained that he was trying to figure out how to shorten the sentence. He came up with, "It hatched." If there was a way to shorten or avoid a drawing, craft project, diorama or written assignment, he could come up with it, brilliantly.

Children with head injuries or neurological issues may have more esoteric problems. For example, children with "apraxia" may be unable to mimic using a hammer or a toothbrush although they could use each object correctly. The connection between the motor pattern and the idea has been severed. The brain is remarkable in the specific and narrow forms of difficulty injuries can produce.

Social Concerns

While most gifted children are well adjusted, academically misplaced or isolated gifted children are at greater risk for depression, anxiety and other mental health concerns. Students scoring in highest IQ ranges may experience greater adjustment difficulties (Terman, 1959), possibly because their extreme abilities contribute to their isolation and worsen the fit with their environment. For instance, classmates may label them as the "geek" or they might find themselves unable to interact with their peers. Similarly, the twice-exceptional child is more likely to be misplaced and isolated from peers. This separateness is one of the reasons that the gifted are prone to feeling dissatisfied with their accomplishments and ultimately abandon their abilities (Buescher, 1985).

Gifted students often misunderstand what their giftedness means. This misconception can lead to feelings of sadness, depression, and to the exhibition of self-defeat-



ing behaviors (Kaplan, 1983). Perfectionism in gifted students may cause them to feel that none of their efforts are adequate (Delisle, 1990). If you can never perform to your standard, then what is the point in trying? Again, back to the six-year-old attempting to translate to paper the image in their mind. The perfectionist six-year-old rates himself a "failure" again and again in his effort to draw what he see so clearly. Soon frustration sets in, leading to depression, which in turn feeds the lack of trying. The less well-adjusted gifted students avoid growth opportunities including risking failure, setting standards for their work, and setting or meeting goals (Jenkins-Friedman & Murphy, 1988).

Intervening: Why we fail

Understanding the problem is a basic step toward designing an intervention, yet we often fail at the second step. An Independent Educational Plan (IEP) tends to be a document of flaws, problems, and failures. A child sits in a room surrounded by his parents, teachers, guidance counselor and principal reviewing all of the things he is doing badly. Goals are often cryptic, although precise ("Will demonstrate on-task behavior 80% of the time.") Few of us would be enthused participants in such a process, particularly when it rarely includes any mentions of strengths, abilities, charm, talent, quirks, and good points. It is a group discussion about Jeremy's failings in elaborate, painful and specific detail.

Most teachers automatically reduce their expectations of kids labeled learning disabled, which can compound the initial deficit with a setting that fails to ask them to perform to their own capabilities. But what Salmaan requires for achievement is motivation (Nickerson, 1999). He needs to be employed in a long, effortful apprenticeship where he is allowed to practice, develop, experiment, learn and practice some more (Simonton, 1994). Yet, this practice should be encouraged not with the mindset of perfection, but with a willingness to risk doing badly in the service of learning. Effective support focuses on effort, learning processes, and strategies. In the end, it matters most that we find out what we can do, that we find those who share our passions and affinities, and that we learn to put the development of character and talent above our fear of looking foolish. That is a lesson we can learn in childhood, and relearn in adulthood.

Bibliography

American Psychiatric Association (2000). *Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR* (Text Revision). American Psychiatric Association.

Baum, S. & Owen, S. (1988). High Ability/Learning Disabled Students: How are they different? *Gifted Child Quarterly*, 32, 321-326

Buescher, T. M. (1985). A framework for understanding the social and emotional development of gifted and talented adolescents. *Roeper Review*, 8(1), 10-15.

Boodoo, G. M., Bradley, C. L., Frontera, R. L., Pitts, J. R., & Wright, L. P. (1989). A survey of procedures used for identifying gifted learning disabled children. *Gifted Child Quarterly*, 33(3), 110-114.

Coleman, MR & Gallagher, J. (1992). *Report on State policies related to the identification of gifted students*. Chapel Hill: University of North Carolina

Davis, G.A., & Rimm, S.B. (1994). *Education of the gifted and talented (3rd ed.)* Boston: Allyn and Bacon

Fox, LH, Brody, L. & Tobin, D. (Eds.) (1983). *Learning disabled gifted children: Identification and programming*. Baltimore, MD: Allyn & Bacon

Jenkins-Friedman, R. & Murphy, D.L. (1988.) The Mary Poppins Effect: Relationships between gifted students' self concept and adjustment. *Roeper Review*, 11 (1).

Klawans, H. L. (1990). *Newton's Madness: Further Tales of Clinical Neurology*. New York: Harper Collins.

Minner, S. (1990). Teacher evaluations of case options of LD gifted children. *Gifted Child Quarterly*, 34, 37-40.

Nickerson, R. S. (1999). Enhancing Creativity. In Robert J. Sternberg (Ed.), *Handbook of Creativity* (392-430), New York, Cambridge University.

Pryt, M. (2005). Personal communication. October 3, 2005.

Quiroga, R.Q., Reddy, L., Kreiman, G., Koch, C., & Fried, I. (2005). Invariant visual representation by single-neurons in the human brain. *Nature*, 435:1102

Richey, L.S. & Ysseldyke, J.E. (1983). Teachers' expectations for the younger siblings of learning disabled students. *Journal of Learning Disabilities*. 1983 Dec;16(10):610-5

Ruban, L.M. & Reis, S.M. (2005). Identification and Assessment of Gifted Students With Learning. *Theory Into Practice*, 44(2), 115-124.

Simonton, D.K. (1994). *Greatness: Who Makes History and Why*. New York: Guilford Press.

Terman, L. M. (1959). *The gifted child grows up: Twenty-five years' follow-up of a superior group*. Stanford, CA: Stanford University Press.

Tallent-Runnels, M. K., & Sigler, E. A. (1995). The status of the gifted students with learning disabilities for gifted programs. *Roeper Review*, 17, 246-248.

Webb, J.T., Amend, E.R., Webb, N.E., Goerss, J., Beljan, P., & Olenchak, F.R. (2005). *Misdiagnosis and dual diagnoses of gifted children and adults: ADHD, Bipolar, OCD, Asperger's, Depression, and Other Disorders*. Scottsdale, AZ: Great Potential Press.

Whitmore, J. F. (1980). *Giftedness, conflict and underachievement*. Boston: Allyn and Bacon.