

Autism Spectrum Disorders (ASDs),
a.k.a. Pervasive Developmental
Disorders (PDDs):
Connection to Nonverbal Learning
Disorders (NVLD)

Personal Experiences

Tim Page *The Week* November 30, 2007

- "From early childhood, my memory was so acute and my wit so bleak that I was described as a genius—by my parents, by our neighbors, and even, on occasion, by the same teachers who gave me failing marks. I wrapped myself in this mantle, of course. But the explanation made no sense. A genius at *what*? Were other 'geniuses' so oblivious that they couldn't easily tell right from left and idly wet their parents into adolescence? What accounted for my rages and frustrations, for the imperious contempt I showed to people who were in a position to do me harm? Although I delighted in younger children, whom I could instruct and gently dominate, and I was thrilled when I ran across an adult willing to discuss my pet subjects, I could establish no connection with my of my classmates. My pervasive childhood memory is an excruciating awareness of my own strangeness... By now, I am fairly used to myself."

Personal Experiences

Distance and Time Compression

- When I was in the third grade, our playground was about a ten acre blacktop area. When the bell rang we were to go to the steps of our bungalow classroom and line up until the teacher arrived. Kids would walk or run depending on how far away they were when the recess or lunch bell rang.
- One day I happened to be at the bungalow steps when the bell rang. The other kids were a couple of hundred feet away. The first kid to arrive was a friend of mine and was running. The other kids were all moving quickly, but he was about half-way ahead of them. I remember looking out across the playground as if it were the Serengeti and in the course of a few seconds having the depth dimension disappear. All the kids were in a two dimensional front like a herd and were running after me— to gang up on me.
- In what must have been milliseconds my mind raced between panic and disbelief in the "vision." I fought what my eyes were telling me, but the panic of being ganged up on overwhelmed me. To defend myself I hit my friend in the jaw as he came up to the steps. After hitting him, the sense of being overrun evaporated and I was baffled.

Concept of Time Compression

- Objects in the Rear View Mirror may Appear Closer than they are." Jim Steinman (1993)
- So many threats and fears, so many wasted years before my life became my own... And though the nightmares should be over... Some of the terrors are still intact."

Personal Experiences

The Need for Physical Struggle and Fair Play

- Although I desperately wanted to play with other kids, when I did it invariably led to a wrestling match and a fight—I seem to remember that the only way I could feel their friendship was in physical contact.
- Starting in kindergarten I was obsessed with fair play. I would memorize the rules of a game and felt it was my job to make sure every participant "played fair." If I perceived a slight of the rules, I would become insistent that it be corrected. As I was also very vocal and fearless in this pursuit, my teachers were often driven to despair.
- An offshoot of this was a sense that I needed to protect those who were being bullied. School life in the late fifties and sixties was full of sparing and other alpha type behavior. At the time I didn't see myself as a TV sheriff, but it was a religious mixture of being compelled to 'do the right thing' and help the underdog. I got into fights on a regular basis even through the ninth grade. I cannot tell you how to this day my ears turn red when I hear someone say, "I don't care who started it."

Personal Experiences

Grand Day Dreaming

- In the second and third grades I developed a pronounced ability to daydream about performing great projects. I would go to a planter and even with just a stick outline great road and dam building projects or battles. Of course, if given the chance I would involve an incredible amount of toys, mud, water and 'structures.' I would spend hours alone, but completely focused and seemingly happy at this is left to my own devices.
- Associated with this 'alone time' was a sense of anger. Without reason, I would become angry at the other kids. Never knew why. One time a kid even asked me if I wanted to play with him and the ball; I said no. I then started thinking two things: I missed an opportunity and the kids wouldn't let me play. I remember thinking at the time how untrue the later was, but couldn't help verbalizing it to my parents.

Personal Experiences

- “I remember the only thing at the funeral was Dad’s body was cold and loveless. It didn’t respond like it almost always did.”
- “My mom has bad timing. She might ask me to do what I’ve already started, you horrible creature, you wretched annoyance!”
- Comments from a teenager with an ASD.

Asperger’s Syndrome (AS) as an ASD/PDD

- ASDs/PDDs are characterized by severe and pervasive impairments in several areas of development.
- ASDs/PDDs are considered “spectrum” disorders because they are thought to fall on a continuum with regard to symptom severity, functional abilities, and degree of impact upon adaptive behavior and cognition.
- AS is typically considered the highest functioning variant and generally suggests a better prognosis than more severe disorders on the autism spectrum.

PDD/ASD

According to the International Classification of Mental and Behavioral Disorders- 10th Edition: Clinical Description and Diagnostic Guidelines (ICD-10), “This group of disorders [PDDs] is characterized by qualitative abnormalities in reciprocal social interactions and in patterns of communication, and by restricted, stereotyped, repetitive repertoire of interests and activities. These qualitative abnormalities are a pervasive feature of the individual’s functioning in all situations, although they may vary in degree. In most cases, development is abnormal from infancy and, with only a few exceptions, the conditions become manifest during the first five years of life. It is usual, but not invariable, for there to be some degree of general cognitive impairment, but the disorders are defined in terms of behavior that is deviant in relation to mental age (whether the individual is retarded or not). There is some disagreement on the subdivision of this overall group of pervasive developmental disorders (p. 252).”

ASD/PDD

Greenspan & Wieder (2006) Engaging Autism

- Disorder involving fundamental problems in relating, communicating, & thinking. Assessment needs to consider ability to establish closeness, exchange of emotional gestures in a continuous, reciprocal manner, and use of emerging words or symbols with emotional intent. “The degree to which these three core processes or abilities are not functioning in an age-expected manner may indicate, at least initially, the degree of autism affecting the child.”
- Repetitive behaviors are secondary.
- Incidence as high as 1 in 166.
- Cumulative-risk, multiple-pathway model: many factors interact to result in the expression of the disorder. “Genetics or prenatal factors, for example, may make a child vulnerable to subsequent challenges including physical stress, infectious illness, and exposure to toxic substances.” Many potential developmental pathways, many variations of the problem, varying degrees of severity are possible with this model.

ASD/PDD

As implied by the use of the term “spectrum disorder,” Autism Spectrum Disorders (ASDs) fall on a continuum of severity levels. There are individuals with this disorder who show symptoms consistent with “classic” autism, characterized by an almost complete lack of awareness of other people, mental retardation, impaired adaptive behavior skills, extreme perseveration of certain stereotyped movements or rituals, and little or no language skills. Although the same basic core areas of difficulty are characteristic of higher functioning ASD children, they show better intellectual functioning with specific neurocognitive weaknesses; show the ability to attach to primary caretakers and enjoy some social relationships, albeit with limited emotional reciprocity; have some functional communication skills but typically always show weaknesses in pragmatics (i.e., practical language or social communication); exhibit better adaptive behavior skills but limited social skills; and demonstrate circumscribed and stereotyped interests and behaviors to a much less intense and frequent extent.

ASD/PDD

As Dr. Greenspan writes, “... children differ in their basic mastery of the foundations for relating, communicating, and thinking. Some children with autistic spectrum disorders can form relationships and be engaged in purposeful social interaction to a limited degree, while others are very self-absorbed and aimless. Some children can focus and attend, engage with others, exchange motor and affect gestures in a purposeful manner, but have difficulties participating in a continuous flow of affect gesturing as a part of social problem-solving. These children also then have difficulties with the meaningful use of ideas and language and in connecting ideas together for logical and reflective thinking. Other children evidence partial mastery of the basics, as well as shared social problem-solving and the creative and logical use of ideas, but are very limited in their capacity to apply these abilities to a broad range of interactions. Therefore, while some children may share common features that lead to a diagnosis of an autistic spectrum disorder, their individual patterns are quite varied... Children with ASD typically have challenges at two levels. At one level, they have compromises in the basic foundations of relating, communicating, and thinking, such as a difficulty with exchanging emotional and social signals as a part of a relationship. At a second level, they frequently evidence symptoms such as repetitive behavior, self-stimulation, and self-absorption.”

ASD/PDD Treatment/Greenspan

DIR Model- Developmental, Individual Difference, Relationship Based Model or "Floortime" approach

- "The goal of treatment within the DIR/Floortime model is to build foundations for healthy development rather than to work only on surface behavior and symptoms. With this approach, children learn to master critical abilities missed or derailed along their developmental path—namely the ability to relate to others with warmth and pleasure, communicate purposefully and meaningfully (first with gestures and then often with words), and, to varying degrees, think logically and creatively."
- According to Dr. Greenspan, each child, even though s/he may share a common diagnosis with other children, has his/her own unique pattern of development and functioning. A comprehensive approach to assessment and intervention must work with each child's and family's individual differences. These include differences in capacities to attend, relate, communicate, and think, and to process experience and information and plan and sequence actions. Dr. Greenspan's work implies that modifiability in functioning may be more possible for certain children.

AS- ICD-10

As explained in the ICD-10, "... [AS] is characterized by the same kind of qualitative abnormalities of reciprocal social interaction that typify autism, together with a restricted, stereotyped, repetitive repertoire of interests and activities. The disorder differs from autism primarily in that there is no general delay or retardation in language or in cognitive development. Most individuals are of normal general intelligence, but it is common for them to be markedly clumsy; the condition occurs predominantly in boys (in a ratio of about eight boys to one girl). It seems likely that at least some cases represent mild varieties of autism, but it is uncertain whether or not that is so for all. There is a strong tendency for the abnormalities to persist into adolescence and adult life, and it seems that they represent individual characteristics that are not greatly affected by environmental influences (p. 258)."

AS- DSM-IV

- "Qualitative impairment in social interaction, as manifested by at least two of the following: (1) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction; (2) failure to develop peer relationships appropriate to developmental level; (3) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people); (4) a lack of social or emotional reciprocity.
- "Restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following: (1) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus; (2) apparently inflexible adherence to specific, nonfunctional routines or rituals; (3) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements); (4) persistent preoccupation with parts of objects."
- In order to meet the DSM-IV diagnostic criteria for Asperger's Disorder (AD), the disturbance must cause "clinically significant impairment in social, occupational, or other important areas of functioning." Meeting the criteria requires that there be "no clinically significant general delay in language" as well as "no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior (other than social interaction), and curiosity about the environment in childhood."

AS-NVLD

It should be noted that most experts in the field of PDDs would consider NVLDs to be related disorders or disorders that actually fall on the PDD spectrum. Oftentimes, NVLD individuals also meet the diagnostic criteria for AS. NVLD individuals typically demonstrate verbal strengths with relative weaknesses in visual/nonverbal abilities. Additionally, they typically have deficits in sensory-motor skills, social-emotional functioning, and adaptability, as well as in mathematics and written language. NVLD individuals often work/write slowly and tend to have difficulty completing written work in a timely manner. They often show a fairly narrow range of interests and preferred activities. The difficulties associated with NVLDs usually become more manifest as the child grows older and the demands for written work, independence, and socialization increase. NVLDs have also been termed Right Hemisphere Learning Disorders because many of the involved impairments are typically considered to be right hemisphere functions.

Right vs. Left Brain

Jill Bolte Taylor (2006) My Stroke of Insight

"On the morning of December 10, 1996, Jill Bolte Taylor, a 37-year-old Harvard-trained brain scientist, experienced a massive stroke when a blood vessel exploded in the left side of her brain. A neuroanatomist by profession, she observed her own mind completely deteriorate to the point that she could not walk, talk, read, write, or recall any of her life, all within the space of four brief hours. As the damaged left side of her brain—the rational, grounded, detail-and-time-oriented side, swung in and out of function, Taylor alternated between two distinct and opposite realities: the euphoric nirvana of the intuitive and kinesthetic right brain, in which she felt a sense of complete well-being and peace, and the logical, sequential left brain, which recognized Jill was having a stroke and enabled her to seek help before she was completely lost."

AS-NVLD (cont.)

There is clearly a great deal of overlap between AS and NVLD. Making a diagnosis of AS involves examining a child from a psychiatric or behavioral perspective, whereas assigning a diagnosis of NVLD involves evaluating the child from a neuropsychological testing standpoint. Studies conducted by the Yale Child Study Group suggest that up to 80% of children who meet the criteria for AS also have NVLD. It is likely that children with more severe forms of NVLD also have AS.

AS-NVLD (cont.)

Children from both groups are socially awkward and over-focus on attention to detail/parts, while missing main themes or underlying constructs. However, by convention, the two groups differ in the range of severity. Customarily, AS diagnoses are reserved for children with more severe social impairments and behavioral rigidity. There are degrees of severity in AS children but not to the extent that is considered acceptable in diagnosing NVLD. NVLD students can range from those who show fairly severe autistic-like symptoms to those who exhibit somewhat subtle social difficulties but a prominent set of the characteristic neurocognitive and academic deficits. Unlike NVLDs, making a diagnosis of AS does not necessitate the presence of visual-spatial weaknesses or learning disabilities affecting writing and math; such deficits, however, are often observed in both groups.

AS/NVLD (cont.)

- Co-morbid disorders
- Developmental histories- reduced exploratory or imaginative play, possibly motor problems, interactional difficulties.
- Academic problems- often associated with handwriting; memorization without meaning; & adjustment to unfamiliar, novel demands.
- Social & emotional problems- eccentric, stiff, egocentric, immature; also issues with expression and comprehension and regulation of affect.

AS/NVLD (cont.)

- Affect recognition, theory of mind skills (**NEPSY-2** Social Perception assessment)
- These children are often viewed as social misfits because they miss subtle social cues and nuances conveying communication. Under ordinary circumstances, the ability to "read" social situations and people, and to adjust one's communicative behavior accordingly, is a task that is performed effortlessly, and usually below the level of consciousness. The ability to understand another person's perspective, and to infer mental states, is governed in large measure by indirect, socially mediated cues that most people pick up on through experience. These children often need more direct and concrete explanations of how to behave. They typically experience lifelong struggles with situations requiring adaptation, generalization, insight, and interpersonal skills.
- Pragmatic language difficulties.

Mirror Neurons

- A neuron that fires both when a being acts and when the being observes the same action performed by another animal (observed in primates and thought to exist in humans, mainly in the pre-motor cortex and the inferior parietal cortex). Original discovery in Parma, Italy (1980's and 1990's). Rizzolatti, Fadiga, Fogassi, & Gallese.
- It is now thought that perhaps mirror neurons and their networks enable humans and primates to send out motor commands to muscles but also help in the determination of intentions of other individuals by mentally simulating their actions. Linkage to theory of mind skills and empathy development. November of 2006, *Scientific American*.

AS/NVLD Sense of Self and Self-Narrative

Learning Disorders and Disorders of the Self in Children and Adolescents

- Joseph Palombo, Institute for Clinical Social Work; W.W. Norton & Company (2001)
- Development of the sense of self- associated with the child's experience of the self. Prone to injury and vulnerable to fragmentation. Feelings of being unappreciated and misunderstood. Potential for anxiety versus grandiosity.
- Emergence of the self-narrative- associated with child's integration of the meaning of those experiences. NVLD- different world view from those in the community; when the communication gets derailed, there is a sense of puzzlement. AS- coherent narrative is lacking; cannot give meaningful history; show limitations in communicative competence (involves the use of social rules of language to convey or interpret intentions that are contextually appropriate as well as the ability to self-monitor one's communications); problems selecting what is relevant; and missing affect.

AS/PDD

Research and clinical literature has suggested that ASD/PDD individuals have difficulty adapting to change, are especially sensitive to environmental stressors, have a desire for interpersonal contact but fail to understand how to make and keep friends, and show emotional vulnerability in the form of low self-esteem, extreme self-criticality, poor ability to cope with stressful situations, and a tendency to internalize emotional pain, in the form of anxiety and depression. For most AS individuals, stressful situations create greater amounts of confusion and distortion by virtue of increasing amounts of psychological complexity and valence. Hence, the more interpersonally stressful and complex the situation, the more difficulties these individuals have in terms of making accurate interpretations and behaving accordingly.

ASD/PDD

Some ASD/PDD individuals appear to be almost completely socially oblivious and often have a habit of talking excessively, not realizing the negative reaction from others. Other ASD/PDD individuals, however, appear to show more self-consciousness in social situations; they can be overly sensitive to social difficulties and often show extreme stress in response to being faced with complex social demands. Whether the ASD/PDD child shows disruptive/oppositional behaviors or manifests anxiety symptoms, social withdrawal, or compulsive behaviors, these difficulties are likely to reflect reactions to social demands that produce internal feelings of being overwhelmed, helpless, vulnerable, and/or out of control.

ASD/PDD

Given the neurocognitive and social-emotional difficulties with which ASD/PDD children present, it is understandable that they often experience anxiety and discouragement related to school. Their levels of internal distress are influenced by difficulties with tolerating change/frustration and modulation of emotional responses; as such, they are often quite vulnerable to stress. The ability to evaluate stress levels and to develop coping skills increases with age and cognitive development. As compared to neuro-typical peers, many children with ASDs/PDDs do not show expected gains in social-emotional coping skills and stress management. Their stress level is likely to increase when they are exposed to novel, unfamiliar, or unpredictable situations; when expectations for performance/behavior are not explicit and concrete; when they are fearful of failure (socially or academically) or experiencing something unpleasant; and when they are progressing from one activity to another.

ASD/Anxiety

Rollo May (1950) The Meaning of Anxiety

“Competitive individualize militates against the experience of community, and that lack of community is a centrally important factor in contemporaneous anxiety.”

ASD/PDD Assessment

- Neuropsych testing, with adaptive behavior assessment
- ADOS & ADI-R
- The **Autism Diagnostic Observation Schedule (ADOS)** is a semi-structured, standardized assessment of communication, social interaction, and play or imaginative use of materials for individuals who have been referred because of possible Autism or other PDDs/ASDs. The **ADOS** consists of standard activities that allow the examiner to observe behaviors that have been identified as important for the diagnosis of PDDs/ASDs at different developmental levels and chronological ages.
- The **Autism Diagnostic Interview-Revised (ADI-R)** is an extended interview designed to elicit a full range of information needed to produce a diagnosis of Autism and to assist in the assessment of related disorders on the Autism Spectrum.
- The information contained in the previous two paragraphs was paraphrased from the *Western Psychological Services (WPS)* manuals on the **ADOS** and the **ADI-R**. The diagnostic algorithms generated by the two tests are sets of rules that allow classification of patterns of behavior according to whether or not they meet the current diagnostic criteria for Autistic Disorder (AD) or for the broader ASD/PDD.

Treatment

- ASD/PDD children often benefit from individual psychotherapy, and their parents often need assistance with the development and implementation of behavior management strategies. In the therapeutic context and at home, ASD/PDD children should be encouraged to identify and verbalize feelings, as well as to find ways of preparing for events that precipitate problematic behaviors. They often have low self-esteem and may harbor fears of social humiliation, but there is often a need to be liked and accepted. Finding appropriate means of meeting such adaptive needs, however, is often problematic.
- A key task for many ASD/PDD children and their parents involves working around sensitivities to help the child gain the basic experiences needed for emotional development and for successful negotiation of internal confusion and troubling sensations. ASD/PDD children often need more parental empathy, encouragement, and flexibility than most children do.
- In addition to therapy and parent training, many ASD/PDD children benefit from psychopharmacological treatment. Such interventions are often geared toward ameliorating the specific psychiatric symptomatology seen in a given AS child. These symptoms often vary from one AS child to another and therefore require an individually tailored treatment approach.

ASD/PDD Educational Recommendations

- The following set of recommendations may be useful to teachers of AS children; many of these suggestions are often useful to parents.
- All students are likely to need assistance breaking down large projects into smaller, more concrete tasks. It is often helpful for teachers to structure the student's efforts to ensure that s/he is thinking through each step. Encourage the student to consider only one step at a time so that the chance of him/her becoming overwhelmed, ineffective, and/or unresponsive are reduced. Children with organizational problems have difficulty knowing where to begin or how to structure the process. It might be helpful to approach an organizational task by asking about the goal and plan of approach, and to provide appropriate guided support as needed. Assignments should be adapted as needed with consideration for deficits in:
 - It is not important to assign a student an assignment for the student with AS. We must remember that s/he is likely to struggle in situations requiring a definition, generalization, interpersonal skills, and insight and that s/he may be likely to set up unrealistic personal goals.
 - Adherence to routines and resistance to change may reflect that the AS student is not familiar with the environment. An essential source of information is to facilitate feelings of security by maintaining a set of basic routines, then adjusting the routines slightly in a step-wise fashion.
 - When required to use complex, understand that the AS student may not know what is going to happen next and/or may not have processed the relevant information in the situation at hand. Also, shifting attention to new stimuli or demands may be difficult for him/her, and s/he may want more of a check about when s/he does things or the amount of direction s/he receives. Therefore, by allowing the AS student additional processing time accompanied by touch cues or gestures, teaching him/her to indicate when s/he is done and appropriately providing him/her with clear, concise instructions including the nature and order of events, and s/he may only give messages, modeling, and encouragement for active participation in presentation of a new demand.
 - One of the most effective strategies for an individual who has difficulty adjusting to change is to make the use of the "two-minute warning." Caretakers can alert the AS student that one activity is about to end and that another will begin. Allowing a few minutes of rest or preferred activities between the end of one activity and the beginning of the next can also facilitate transitions.
 - Keep in mind that an increase in unusual or difficult behavior probably indicates an increase in stress, which is often associated with feelings of losing control or being helpless. In many instances, the stress may only be reduced through a physical change in environment. Thus, safe places for decreasing and engaging in coping activities should be available and easily accessible.
 - Verbal mediation can be a useful tool for helping AS individuals direct their focus to their own behavior or work. S/he might benefit from being through a task, since this approach can increase attention to the task and accidentally increase error recognition. Models, cue, and encourage the use of phrases, such as "What next?" and "What doesn't work" as self-monitoring tools.
 - Keep in mind that AS students can interpret material literally or incompletely. Thus, be willing to repeat directions, check his/her comprehension of them, or write them down. Give him/her ample time to express his/her ideas in writing but frequently monitor his/her progress and prompt him/her when needed. Assist him/her by asking specific questions that may guide him/her to offer an appropriate response.
 - Keep in mind that social interactions in other social contexts may not be sufficient to change behavior. In many cases, directions and new information may need to be simultaneous or given over a long period of time for AS children, provided from both copies of modified teaching materials and/or teacher outlines from lecture-oriented classes. When copying is required, provide a close-up model rather than presenting accurate copying from the blackboard. In order to promote correct completion of math problems, encourage the use of graph paper designed to assist with proper lining up of the written work involved in computations.
 - Visual teaching materials, such as charts, graphs, and maps, should be accompanied by detailed oral instructions.
 - When the AS student has engaged in some task, it will be important to help him/her answer the reason for the behavior and to help him/her develop a more acceptable replacement behavior. When s/he is able, offer a brief verbal explanation. Try asking him/her questions that may help him/her structure his/her answers/thinking, such as "What did you do last time?" "How did that create a problem?" "What did you do last time, and how would that have changed things?" When s/he has a question to make, s/he is encouraged to ask him/her the teacher questions.
 - When evaluating the quality of work, choose and implement the best alternative, and assess the decision based upon the actual outcome. Keep in mind that the application of self-observation and appropriate verbal skills will be difficult for AS students. Parents and school personnel will need to help him/her develop a knowledge of what to say, how to say it, and when to say it.
 - Keep in mind that learning will be more effectively accomplished through intellectual rather than experiential means, even in the social context. Participation in structured group-oriented activities should be encouraged.