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# Autistic Spectrum Disorders: Sorting It Out

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## Introduction

Great, you figured something out. Congratulations! Now, you *may* want to share that idea with another human mind. If so, your brain translates the idea into a sequence of words. The words are translated into vibrations that depart from your mouth, sail long distances through the air, and land on my eardrum. These vibrations are turned back into words, and then into meaningful sentences and ideas. My brain also picks up other non-verbal language, such as your facial expression and tone of voice. Meanwhile, I figure out any “hidden agenda” or “subtext” when you said those words. All these elements mix together to come up with an accurate understanding of what your “self” meant to communicate to my “self.”

It’s amazing that this process works at all. It is not really amazing that some people have trouble with some aspect of it. Those people whose primary difficulty is understanding the literal meaning of words are considered to have “traditional” speech and language disabilities. Those people who have difficulty in the non-verbal parts of communication (including their desire and ability to use language in a social context) may be considered to have an Autistic Spectrum Disorder (ASD).

## The Skills Involved in Communication

In order for us to effectively communicate, we need skill in multiple areas, including (A) verbal and (B) non-verbal arenas.

### (A) Verbal/Spoken Communication Skills (may or may not be affected in ASD)

- **Semantic language:** The ability to use and understand words, phrases and sentences; including abstract concepts and idioms. Aspects of semantic language include:
  - **Receptive verbal language:** The ability to *understand* spoken words and ideas.
    - **Central Auditory Processing (CAP):** A mixed group of abilities needed to process and derive meaning from sounds and words; including the abilities to distinguish between similar sounds, and to pick out the main voice from background. In short, “what we do with what we hear.”
  - **Expressive verbal language:** The ability to *express* our ideas with spoken words.
    - **Articulation:** The ability to speak each word clearly.

### (B) Non-Verbal/Non-Spoken Communication Skills (Problematic in ASD)

- **Urge to initiate shared social interaction and two-way communication: Theory of Mind.**

*The ability to socialize/relate/empathize requires a working “Theory of Mind.”* Theory of mind refers to the relatively unique ability of humans to understand: (1) that I have a mind, (2) that you have a mind; and most importantly, (3) that our minds may not know or be feeling the same things. Without a theory of mind, there is little point in communicating. After all, who would you be communicating to? There is limited ability to truly recognize that there is another human being in the room. It will be difficult to feel the need to communicate with anyone else. It may seem as if there is a plane of glass between the child and others. Eye contact will be poor.

With limited ability to “get inside your mind,” it will be frequently difficult for the child to demonstrate empathy for what you are feeling. For example, a child with theory of mind problems may assume that since he is happy, then you must be happy; or the child may not understand that someone else is deceptive when his own mind always attempts honesty.

Thus, the ability to recognize that you have a mind, the ability to relate to that mind, and the ability to empathize with that mind are all parts of the same skill. It is felt that theory of mind problems underlie many of the difficulties seen in the Autistic Spectrum Disorders.

Closely related to the “interest” in social communication (that arises from a working theory of mind) are the following skills. They are required to actually achieve the meaningful interaction. Certainly, if you don’t have these skills, your ability to appear interested in social interaction may become blunted.

- **Pragmatic language:** The practical ability to use language in a social setting, such as knowing what is appropriate to say, where and when to say it; and the give and take nature of conversation. Effective pragmatics requires a working theory of mind: the ability to figure out what the other person does or does not already know—or might or might not be interested in hearing about. Examples of pragmatic language/theory of mind problems would be:
  - A new student moves into the school district and enters the classroom for the first time. The teacher asks him where he comes from. The Autistic Spectrum child responds: “From the hallway.”
  - As an Asperger’s child walks into the office, the doctor notices that her pink shirt matches the color of her jacket. He jokes, “If you change into a green shirt, does the color of the jacket change, too?” The child responds: “My wardrobe includes a turquoise shirt, not a green one.” This child’s spoken language is precise, but she misses (1) the actual meaning of the question; and more importantly, (2) misses that the whole purpose of this conversation was just a little fun chit-chat to initiate an interaction.
- **The skill to know what is—and what is not—important**
  - Ability to see the big picture rather than fixate on details.
  - Ability to maintain a full range of interests.
- **Symbolic play skills**
  - Give a child a yellow box on wheels, with thin long black strips on it. The ability to understand that this object actually represents a school bus is a type of communication—just like the ability to recognize that the letters “C-A-T” stand for a furry animal. Both involve the use of symbols rather than the actual object to communicate.
  - By 18 months, most toddlers start to use objects as symbols for something else. For example, a cup is for drinking, but it also makes quite a handy telephone. By 3 years of age, most children are quite good at “let’s pretend” activities, such as “You be the cowboy!” The toy school bus is not fascinating because the cold metal box can move, but because little toy figures chat while getting on it as they go to school. Stuffed animals are not just warm rags of cloth to drag around, but living creatures that have feelings and needs.
  - So, by 18-36 months of age, typical children make continuous progress in the skill of appreciating the representational meaning of a toy, rather than focusing on its straight forward visual attributes. Failure to develop representational/symbolic/pretend play is a strong marker of the Autistic Spectrum Disorders. After all, if you cannot understand that a physical toy bus represents a real truck, how could you understand that the even more purely representational sound “bus” represents a real truck.

- **Non-verbal (non-spoken) transmission of language.** The simple sounds are not the only thing my body sends through space when it attempts to communicate with you. It also transmits:
  - Facial expressions
  - Body language
  - Tone and prosody of voice
  
- **Associated skills sometimes also involved with language problems:**
  - Motor (muscle) coordination, including both gross and fine motor.
  - Spatial orientation.
  - Overall cognition.

## **Secondary Problems Resulting from Failure to Understand**

If the child does not understand what is going on around her—especially if pragmatic/socialization cues are difficult—secondary problems usually occur in the Autistic Spectrum Disorders. The child will frequently appear:

- **Anxious**, since she doesn't know where the next blunder will come from.
  
- **Insistent on sameness and showing ritualistic behavior.** Change means that previously hard-learned strategies will not help in this situation. These kids are barely hanging on. One new wrinkle can throw them over the edge. For example, Jill may know how to unpack her lunch from her backpack each day; but, what happens if the lunch is missing. Now what do she do?
  
- **Inattentive**, since it's hard to pay attention to something you don't understand.
  
- **Rude**, since she doesn't understand rules of conversation such as waiting your turn.
  
- **Interested in objects rather than people.** After all, objects are more predictable.
  
- **“Hanging back”** from peers, for all of the above reasons, and from simply not knowing how to make conversation and relate.
  
- **“Out of it” and “odd” looking.**

## Categories of Communication Disorders

When a child has difficulties in these areas out of proportion to his/her general cognitive abilities, he/she can be considered to have a communication disorder.

Difficulties in the above skills can group together in varying combinations and severities, allowing for the naming of several communication disorder syndromes. As we shall see, these disorders overlap greatly. They may also co-exist as “co-morbid” conditions, may lead to each other, and some may even be duplicates of the same condition but approached by different specialties. Additionally, as children develop, their symptoms and most appropriate diagnostic classification might change. The human brain is not so simple that its disorders fit into neat, static categories. Nonetheless, we still attempt to find certain patterns. Unless we know about the range of syndromes, we will fail to look for important symptoms that need to be addressed. These disorders are (over) simplified in Table 1 below.

Disorders of the communication skills are grouped into two major types of “disorders.”

**(A) Typical language-based learning disorders** are due to problems in the purely spoken/written language communication skills. These include Expressive, Receptive, Processing, and Articulation Language Disorders. Most routine speech and language evaluations examine these areas. Note that routine psychological testing (such as the WISC- “IQ”) examines areas of cognition (thinking), rather than language per se.

**(B) Autistic Spectrum Disorders (ASD)** are those that include non-spoken communication problems—in particular, problems with socialization/empathy. In other words, the Autistic Spectrum Disorders all share trouble with theory of mind, socialization, the pragmatics of language, and representational play.

They may occur with or without additional verbal speech problems.

In turn, the Autistic Spectrum Disorders are written about in two groupings. These are summarized in the two charts below, and then are discussed in more detail.

- **(1) The Pervasive Developmental Disorders (PDD), defined in DSM-IV** by the American Psychiatry Academy. These are a series of five diagnoses--of which autism is the most commonly discussed. “Pervasive” means that the problem cuts across multiple types of communication. These five disorders are:

<b>Autistic Disorder</b>	Severely disordered verbal <i>and</i> non-verbal language; unusual behaviors.
<b>Asperger's Syndrome</b>	Relatively good verbal language, with "milder" non-verbal language problems; restricted range of interests and relatedness.
<b>PDD-NOS</b>	Non-verbal language problems not meeting strict criteria for other PDD disorders.
<b>Rett's Disorder*</b>	Rare neurodegenerative disorder of girls.
<b>Childhood Disintegrative Disorder*</b>	Neurologists are scratching their head on this one, and assume psychiatrists mean neurodegenerative disorders.

\*In common practice, the diseases of Rett's Disorder, and Childhood Disintegrative Disorder are considered medical disorders and are not usually considered part of the "Autistic Spectrum Disorders."

- **(2) Other Autistic Spectrum Disorders**

Meanwhile, the rest of the world has extended the spectrum beyond those conditions discussed in DSM-IV to include other "Autistic Spectrum Disorders." These are:

<b>Semantic Pragmatic Communication Disorder</b>	Delay and trouble with the use of language (both semantic and pragmatic), but socialization relatively spared.
<b>Non-Verbal Learning Disabilities</b>	Trouble integrating information in 3 areas: non-verbal difficulties causing the child to miss the major gestalt in language; spatial perception problems; and motoric coordination problems.
<b>High Functioning Autism</b>	For some authors, synonymous with Asperger's; for others, implies milder autism without retardation.
<b>Hyperlexia</b>	Most notable for incredible rote reading skills starting at an early age.
<b>Some aspects of ADHD</b>	Impulse and control difficulties in ADHD may lead to trouble showing their empathy.

## (1) DSM-IV Pervasive Developmental Disorders (PDD): the 5 “official” types.

We start our review of each Autistic Spectrum syndrome by presenting the diagnostic criteria for each of the DSM-IV PDD disorders, as defined out by the American Psychiatry Association:

### 1. Autistic Disorder ([click here for more details about autism](#))

(A) total of six (or more) items from (1), (2), and (3), with at least two from (1), and one each from (2) and (3):

1. qualitative impairment in **social interaction**, as manifested by at least two of the following:
  - (a) 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
  - (b) failure to develop peer relationships appropriate to developmental level
  - (c) 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)
  - (d) lack of social or emotional reciprocity
2. qualitative impairments in **communication** as manifested by at least one of the following:
  - (a) delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gestures or mime)
  - (b) in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
  - (c) stereotyped and repetitive use of language or idiosyncratic language
  - (d) lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level
3. **restricted repetitive and stereotyped patterns** of behavior, interests, and activities, as manifested by at least one of the following:

(a) encompassing preoccupation with one or more stereotyped patterns of interest that is abnormal either in intensity or focus

(b) apparently inflexible adherence to specific, nonfunctional routines or rituals

(c) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)

(d) persistent preoccupation with parts of objects

(B) Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years: (1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.

(C) The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder.

## 2. Asperger's Syndrome

Symptoms of Asperger's include: impaired ability to utilize social cues such as body language, irony, or other "subtext" of communication; restricted eye contact and socialization; limited range of encyclopedic interests; perseverative, odd behaviors; didactic, verbose, monotone, droning voice; "concrete" thinking; over-sensitivity to certain stimuli; and unusual movements.

Official DSM-IV criteria are similar to that for Autistic Disorder except do not include the "communication" problem areas: in other words, autistic people who talk well. [Many experts would argue that although verbal speech is preserved in Asperger's, other communication problems certainly exist.]

(A) 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. lack of social or emotional reciprocity.

(B) **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, non-functional 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

(C) The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning.

(D) There is no clinically significant general delay in language (e.g., single words used by age 2 years, communicative phrases used by age 3 years)

(E) There is no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior (other than in social interaction), and curiosity about the environment in childhood.

(F) Criteria are not met for another specific Pervasive Developmental Disorder or Schizophrenia.

### **3. PDD-NOS (PDD-Not Otherwise Specified)**

This category should be used when there is a severe and pervasive impairment in the development of reciprocal social interaction or verbal and nonverbal communication skills, or when stereotyped behavior, interests, and activities are present, but the criteria are not met for a specific Pervasive Developmental Disorder, Schizophrenia, Schizotypal Personality Disorder, or Avoidant Personality Disorder. For example, this category includes **atypical autism** --- presentations that do not meet the criteria for Autistic Disorder because of late age of onset, atypical symptomatology, or subthreshold symptomatology, or all of these.

## **4. Rett's Disorder**

The current DSM-IV criteria are given below. Thanks to the development of a new genetic blood test, though, we are finding Rett's Disorder in children with much milder symptoms.

(A) All of the following:

1. apparently normal prenatal and perinatal development
2. apparently normal psychomotor development through the first 5 months after birth
3. normal head circumference at birth

(B) Onset of all of the following after the period of normal development:

1. deceleration of head growth between ages 5 and 48 months
2. loss of previously acquired purposeful hand skills between ages 5 and 30 months with the subsequent development of stereotyped hand movements (e.g., hand-wringing or hand washing)
3. loss of social engagement early in the course (although often social interaction develops later)
4. appearance of poorly coordinated gait or trunk movements
5. severely impaired expressive and receptive language development with severe psychomotor retardation

## **5. Childhood Disintegrative Disorder (CDD)**

(A) Apparently normal development for at least the first 2 years after birth as manifested by the presence of age-appropriate verbal and nonverbal communication, social relationships, play, and adaptive behavior.

(B) Clinically significant loss of previously acquired skills (before age 10 years) in at least two of the following areas:

1. expressive or receptive language
2. social skills or adaptive behavior

3. bowel or bladder control
4. play
5. motor skills

(C) Abnormalities of functioning in at least two of the following areas:

1. qualitative impairment in social interaction (e.g., impairment in nonverbal behaviors, failure to develop peer relationships, lack of social or emotional reciprocity)
2. qualitative impairments in communication (e.g., delay or lack of spoken language, inability to initiate or sustain a conversation, stereotyped and repetitive use of language, lack of varied make-believe play)
3. restricted, repetitive, and stereotyped patterns of behavior, interests, and activities, including motor stereotypies and mannerisms

(D) The disturbance is not better accounted for by another specific Pervasive Developmental Disorder or by Schizophrenia.

## **(2) Expanded Autistic Spectrum Disorders**

Next, we turn our attention to those Autistic Spectrum Disorders that are not included in DSM-IV:

### **High Functioning Autism**

For some authors, this term is synonymous with Asperger's syndrome. For others, it implies milder autism without retardation, or PDD-NOS.

### **Non-Verbal Learning Disabilities (NVLDs): trouble with the gestalt/integration of non-verbal information**

NVLDs are a cluster of symptoms presumably related to poor ability to integrate information by the non-dominant hemisphere (typically the right hemisphere). Although rote verbal language is spared, non-verbal areas may be debilitating. These children have trouble with the ability to integrate it all together, i.e., to see the big gestalt picture rather than the details. In short, they can't "see the forest for the trees."

Although verbal communication is highly prized in school (good talkers, readers, and writers), up to 2/3 of communication actually occurs non-verbally. Thus, in the long run, the maladaptive learning of NVLD may be more destructive than typical LD. Estimates are that 0.1 to 1% of population has a NVLD, compared to 10% of population has a LD, although these numbers may be an artifact of who and how we test.

Difficulty integrating non-verbal information occurs in three main areas:

- (1) Motoric integration problems:
  - Gross motor: clumsy, unbalanced walking leading to clinging behaviors, bumping in to things, fear of climbing, hesitant to explore physically, difficulty bike-riding, uncoordinated at sports.
  - Fine motor: using scissors, shoe tying (which she'll talk herself through), poor handwriting using awkward and tight grip, finger agnosia.
- (2) Visual-Spatial-Orientation integration problems, with inability to form visual images:
  - Resultant focus on detail rather than the important gestalt.
  - Labels everything verbally, since that is the only—albeit not always accurate—way she can process the visual/spatial information. For example, she may find her way home by counting houses and labeling landmarks verbally.
  - Unaware where she is in space, so unaware of where to place answers on the homework sheet, or how to navigate the school.
  - These elaborate “naming” strategies break down with changes in routine, leading to an inability to cope with change.
- (3) Social/communication problems:
  - Trouble integrating non-verbal communication with verbal communication to achieve full social interaction.
  - The children do clearly appear to want social acceptance (vs. Asperger's, where the children do not usually appear interested socially).
  - However, typically labeled as “annoying” because of their dependence on others, their constant speech, and their misinterpretation of social cues.
  - Very literal interpretation of others; concrete thinking; seeing the world in black and white; trouble understanding dishonesty; trouble seeing hidden meanings, prompting others to say “You know what I meant!”—when they didn't.
  - Don't read the social cues of give and take conversation, thus appearing self-centered, weird, or impolite.

NVLD symptoms change through the lifespan:

- Symptoms as toddlers:
  - Uncoordinated (gross motor and fine motor).
  - Trouble with social interactions, non-verbal clues (such as a peer's facial expression of “Enough is enough!”), and adjustments to change. They may appear “confused.”

- Warning signal: You always have to tell the child, “I shouldn’t have to tell you that.” Obviously, with these kids, you *do* have to tell them. That’s how you know there is a problem.
- Trouble with spatial orientation.
- As a young child:
  - Often exceptional rote speech, memory, and reading skill, which the children use to compensate for lack of intuitive social interaction. The child tries to “remember” how to interact, rather than the skill coming automatically in each different situation.
  - These exceptional reading and “adult” pedantic speech patterns may be interpreted as preciousness.
  - Clumsy monologues replace typical to-and-fro conversations.
- Older children:
  - Academic problems in the later elementary years with organization, inferential reading, and written output.
  - Math facts better than concepts.
  - Typically PIQ<VIQ.
  - Sustains focus on details, does not attend to big picture.
  - A life of social blunders, without ever figuring out why.
  - May have secondary depression or anxiety.

NVLD is determined by neuropsychological testing, whereas Asperger’s is determined by detailed history and observation. There is great overlap in these two conditions—perhaps due to co-morbidity; or perhaps, as some authors feel, they are essentially the same condition but labeled by different specialties. However, Asperger’s is most primarily notable for *not appearing* interested in forming human bonds. [The degree to which Asperger’s kids actually are painfully aware of their trouble making bonds is debated in the literature. Nevertheless, they typically *appear* uninterested.] NVLD kids, though, do typically appear interested in human bonds—even though they may be clueless how to actually achieve them successfully. Additionally, children with Asperger’s more typically have diminished “symbolic play” than in NVLD. For example, the toy school bus is a box that rolls, rather than something that little plastic figures climb into.

So, how about this for a gross oversimplification? NVLD kids recognize that you exist while they miss the subtext of what you are saying. Asperger’s kids appear behind a plane of glass as they miss the subtext of what you are saying.

References: Sue Thompson’s article NVLD at <http://www.nldontheweb.org/thompson-1.htm>

David Dinklage, in the Spring 2001 issue of the [AANE \(Asperger's Association of New England\)](http://www.nldontheweb.org/Dinklage_1.htm). Article can be found at [http://www.nldontheweb.org/Dinklage\\_1.htm](http://www.nldontheweb.org/Dinklage_1.htm).

# Semantic-Pragmatic Communication Disorder

From “Semantic and Pragmatic Difficulties” by Caroline Bowen at

[http://members.tripod.com/Caroline\\_Bowen/spld.htm](http://members.tripod.com/Caroline_Bowen/spld.htm).

See also an excellent site on SPLD at <http://www.geocities.com/DeniseV2/>

and [www.hyperlexia.org/sp1.html](http://www.hyperlexia.org/sp1.html) on SPLD by Margo Sharp.

“Semantics” refers to the ability to use and understand words, phrases and sentences, including abstract concepts and idioms. “Pragmatics” refers to the practical ability to use language in a social setting, such as knowing what is appropriate to say, where and when to say it, the give and take nature of a conversation, and the ability to know what the other person does or does not already know. (See above for further discussion.)

Thus, semantic-pragmatic communication disorder kids have the root problem in:

- Difficulty understanding the literal meaning of words and sentences. (semantics)
- Difficulty with abstract words, words about emotions, idioms, and words about status such as “expert.” (semantics)
- Difficulty extracting the central idea. (pragmatics)
- Trouble with the appropriate rules of conversation (monologues, talking “at” you). (pragmatics)

This inability to understand verbal language and the purpose of language leads to the typical secondary problems we have discussed before:

- An almost obsessive need for sameness and routine, since new situations are hard to understand.
- Too much stimulus is overwhelming, leading to avoidance.
- Things are more predictable than people, perhaps one reason why these children may be more drawn to objects than interpersonal relationships.
- Trouble attending to correct task
- Impulsive “butting in” on conversations.
- Take everything literally, leading to confusion, anxiety, and social rejection.

Life of a child with SPLD through the years:

- Often, very easy infants.
- Delayed development of speech with few words even by two years old.
- Trouble with creative or symbolic play.
- Simple speech improves with therapy, but in school child is “odd.”
- Good wrote skills in math and computers, perhaps, but poor writing and socialization skills.

- Parrot back more than they understand, leading to an aura of intellectual maturity out of synch with their social skills.
- Trouble understanding what others are really thinking or feeling, i.e. trouble with theory of mind.
- Many have fine motor problems; some have gross motor difficulties as well.
- They may have trouble knowing what is socially acceptable, but are not usually conduct disorder teens.
- May be “eccentric” adults.

## **Differentiation of SPLD from other Autistic Spectrum Disorders**

SPLD kids tend to have somewhat better socialization skills than Aspergers.

SPLD kids tend to have more early delays in speech than Aspergers.

The appropriate label may change over time as the child matures.

## **Hyperlexia**

The following description comes largely from: Phyllis Kupperman, et al. “Hyperlexia” at the American Hyperlexia Association website at <http://www.hyperlexia.org/hyperlexia.html>.

Hyperlexia is a condition almost always in boys where Autistic Spectrum symptoms are accompanied by a striking capacity for rote reading. By 18-24 months of age, these kids have taught themselves the ability to name letters and numbers. By three years old, they may read printed words, exceeding even their ability to talk. By five years old, all have a fascination with the printed word. Some of the children seemed to have a mild regression at 18—24 months (less severe than as in Autism).

In addition to this unusual reading skill, there are the other typical common Autistic Spectrum Disorder symptoms we have seen, such as:

- Language problems
  - Good rote or echoed language.
  - Trouble translating words into larger gestalt ideas.
  - Repetitive, idiosyncratic speech.
  - Pragmatic language problems.
  - Unusual prosody (rhythm) of speech.
- Socialization problems
  - See “Secondary Problems from Failure to Understand.”
  - Stereotyped, ritualistic behaviors.
  - Anxiety.
  - Trouble making friends.

## ?ADHD

ADHDers typically have trouble with “Executive Functions,” with subsequent difficulties in their relationship with others. Usually, though, they have adequate capacity for empathy—but may have trouble inhibiting their behavior long enough to show it. Conversely, many children with Autistic Spectrum may appear to have a short attention span, but just aren’t able to stay focused on situations they don’t understand.

It is probably best to consider ADHD as sometimes sharing the following symptoms with—but not part of—the Autistic Disorders Spectrum:

- *Poor reading of social clues* (“Johnny, you’re such a social klutz. Can’t you see that the other children think that’s weird.”)
- *Poor ability to utilize “self-talk”* to work through a problem (“Johnny, what were you thinking?! Did you ever think this through?”)
- *Poor sense of self awareness* (Johnny’s true answer to the above question is probably “I don’t have a clue. I guess I wasn’t actually thinking.”)
- *Do better with predictable routine.*
- *Poor generalization of rules* (“Johnny, I told you to shake hands with your teachers. Why didn’t you shake hands with the *principal*?”)

## Conclusion (Finally!)

The classification of the Autistic Spectrum Disorders is in a state of flux. The problems can overlap, cause each other, occur simultaneously in different combinations and severities, change over time, and don’t even have one “official” group attempting the classification of the whole spectrum. (Hence, this paper.)

However, unless we know all of the possible syndromes, we will continue to squeeze everyone into the same category or two. Most importantly, unless we know the full range of the Autistic Spectrum Disorders, we will not identify all of the individual symptoms which require treatment.

With trepidation, I offer the following gross oversimplifications. I am reminded of my professor’s comment on the first day of medical school: “One third of what I am going to tell you this year is wrong. Unfortunately, I don’t know which third.”

- Autistic Spectrum disorders are marked by their difficulty in communication/socialization in areas other than the literal meaning of words.

- Once a child has trouble with getting the big picture of communication and socialization, there will often be secondary symptoms such as: anxiety, holding back from peers, a rigid adherence to sameness, a relative preference for things (which are predictable) rather than people, and an appearance of “oddness.”
- Asperger’s and Autism share primarily the difficulty of recognizing the existence of others—trouble with theory of mind. Asperger’s can talk; autism usually has limited speech.
- Asperger’s children *appear* less interested in forming bonds and have more trouble with “theory of mind” than NVLD and Semantic-Pragmatic Disorder.
- NVLDs are marked by integration problems of pragmatic language gestalt; spatial orientation; and motoric coordination.
- Hyperlexia is marked by fascination with the printed word starting at an early age.
- “High Functioning Autism” is used by different authors to mean either Autistic Disorder with relatively spared speech and cognition; Asperger’s Syndrome; or PDD-NOS.

Good luck with the children!

## Support Groups and Web Sites

- Autism Society of America.
  - Mail: 7910 Woodmont Ave., Suite 650, Bethesda, MD 20814.
  - Phone: (800) 3-AUTISM
  - [Web Site \(click here\)](#). This site is well done! Useful! Check it out.
- Asperger's Information Sites and/or Support Groups
  - [OASIS \(Online Asperger Syndrome Information and Support\)](#) is a wonderful site dedicated to Asperger's syndrome.
  - [Aspen Syndrome Coalition of the U.S.](#) has excellent materials on Asperger's and related conditions.
  - <http://www.tonyattwood.com/> includes numerous excellent articles and an Asperger's rating scale by the leader in the field of Asperger's syndrome.

## Selected Books on Asperger's

- Click to order: [Asperger's Syndrome: A Guide for Parents](#). By Tony Attwood.
  - [Click to order: Asperger Syndrome \(The OASIS Guide\)](#); Patricia Bashe and Barbara Kirby; Crown Publishers.
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**Table 1. Oversimplified view of the major Autistic Spectrum Disorders.**

0: Not a significant problem area.

++++: Typically, a significant problem area

Gray shading indicates core Autistic Spectrum Disorders and symptoms.

Problem Areas	Traditional Learning/ Language Disabilities	Hyperlexia	Semantic – Pragmatic Commun. Disorder (SPCD)	Non - Verbal Learning Disabilities (NLVD)	Asperger’s Syndrome	Autistic Disorder
Semantic problems(literal verbal/written language).	++++	0	+++	0	0	++++
Early verbal language delays	+++	0 or ++	+++	0	0	++++
Pragmatic language. (“What’s the real purpose of this conversation?”)	0	+++	+++	+++	++++	++++
<b>Theory of mind; Relatedness; Empathy.</b>	0	+	+	+	++++	++++
Eye contact problems.	0	+	+	+	++++	++++
Restricted/ stereotyped range of interests.	0	++	++	++	+++	++++
<i>Appears</i> uninteresting in making friends	0	+	+	+	++++	++++
Pretend or symbolic play problems.	0	+	+	+	++++	++++
Spatial problems.	0 (+++ in perceptual learning disabilities)		+	++++	+	Varies
Fascination w/ written words.	0	++++	0	0	0	0
Gross and fine motor problems.	0	Varies		++++	+	+

