By Stephen M. Shore

PERCEPTION

Do you see what I see? Do you hear what I hear? Do you perceive the world as I sense it?

That fluorescent light in the ceiling… or is it a strobe light? What about the scraping sound that a classroom of students makes as they write their in-class essays? These are just two of the possible differences in sensing and perception that many people with autism have to deal with on a daily basis.

The *Diagnostic and Statistician's Manual of Mental Disorders (DSM IV-TR)* (American Psychological Association, 2000) and most other sources look at communication and social interaction, as well as repetitive motions and restricted interests, as the main areas of impairment in people with autism (2000). The DSM IV-TR and many other references miss or downplay the important aspect of sensory integration dysfunction in people with autism. Understanding the paradigm that people perceive the world differently is vital for working successfully with people on the autism spectrum.

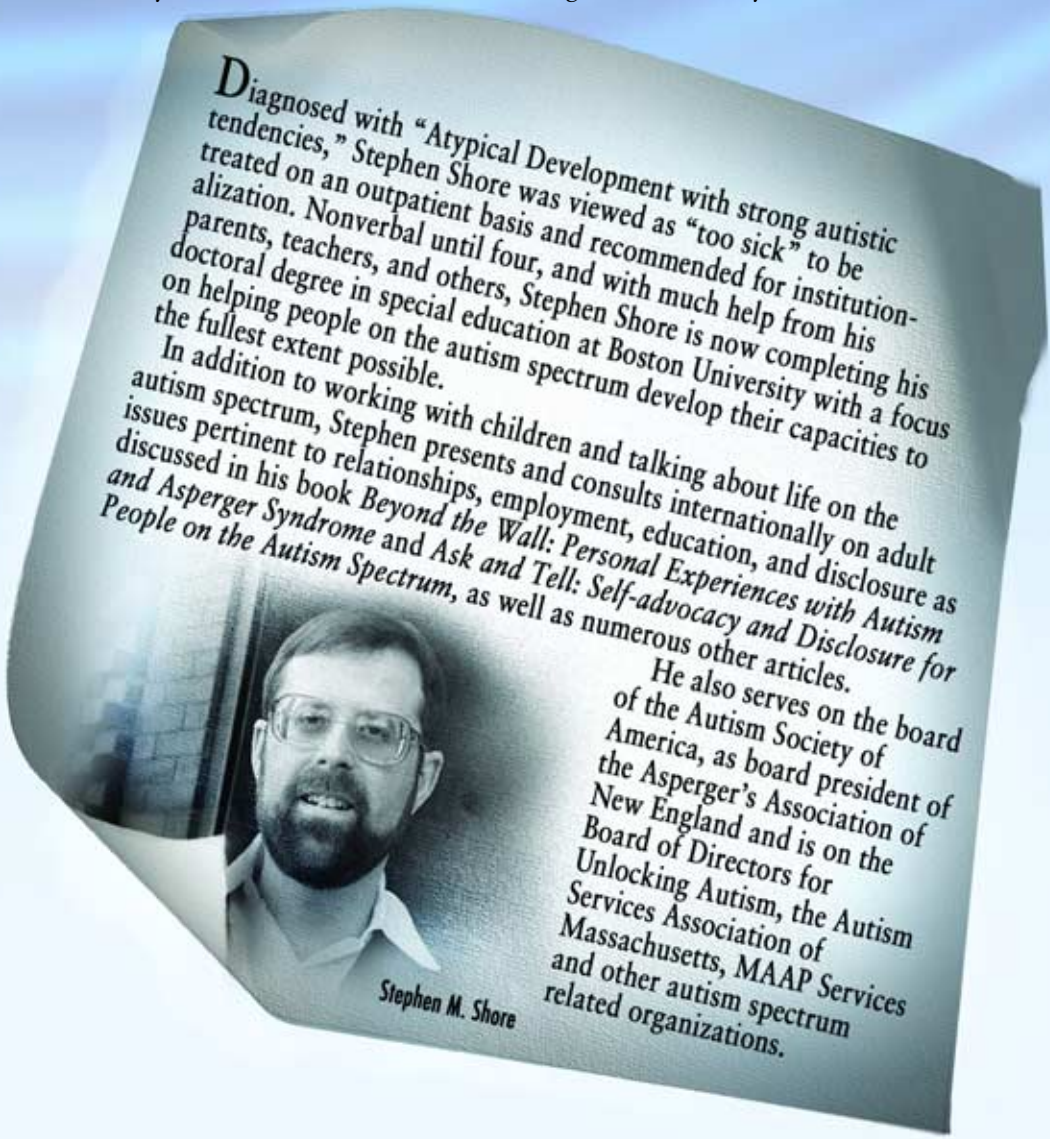
Sensory Integration and Sensory Integration Dysfunction

What is sensory integration? Sensory integration is "the neurological process of organizing the information we get from our bodies and from the world around us for use in daily life"(Kranowitz, 1998, p. 42). "Sensory integration dysfunction is the inability to process information received through the senses" (p. 8). In plain English this means that just about everyone on the autism spectrum that I have met has a large variance from what might be considered as typical in how they sense and perceive the world. Some of the senses may be turned up "too high," others are "too low," and a substantial amount of data received through the senses may be distorted.

Diagnosed with "Atypical Development with strong autistic tendencies," Stephen Shore was viewed as "too sick" to be treated on an outpatient basis and recommended for institutionalization. Nonverbal until four, and with much help from his parents, teachers, and others, Stephen Shore is now completing his doctoral degree in special education at Boston University with a focus on helping people on the autism spectrum develop their capacities to the fullest extent possible.

In addition to working with children and talking about life on the autism spectrum, Stephen presents and consults internationally on adult issues pertinent to relationships, employment, education, and disclosure as discussed in his book *Beyond the Wall: Personal Experiences with Autism and Asperger Syndrome* and *Ask and Tell: Self-advocacy and Disclosure for People on the Autism Spectrum*, as well as numerous other articles.

He also serves on the board of the Autism Society of America, as board president of the Asperger's Association of New England and is on the Board of Directors for Unlocking Autism, the Autism Services Association of Massachusetts, MAAP Services and other autism spectrum related organizations.



Sensory Variations

The Outer Senses

Most people are aware of the five senses of sight, hearing, taste, smell, and touch. A theory mentioned in Temple Grandin's book (1995) is that people on the autism spectrum are born with too many, yet immature, nerve endings. This theory gives an explanation as to why most people with autism experience problems with sensory integration. Some or all of the five senses may be hyper sensitive whereas others may be hypo–sensitive. The data received from these senses may also be distorted. Anything that overloads one or more the senses is a sensory violation to me. Some common examples of problems experienced in these five senses are in the chart above.

THE OUTER SENSES

SENSE	POSSIBLE SENSITIVITY	WHAT IT FEELS LIKE	COMMON REACTION
SIGHT	fluorescent lights	the 60 Hz of lights is visible– like sitting in a room with a strobe light	child may try to escape or have a tantrum
SOUND	birds tweeting	the birds' beaks are scraping the eardrum	child may cover ears
TASTE	strong tasting food	acid or some other extremely strong taste	child may spit out food
SMELL	perfume	taking a deep breath from a Clorox bottle	sneezing, burning eyes, etc. child may try to escape
TOUCH	light touch	touching an open wound or getting an electric shock–may be over-altering	sensory defensiveness, brushing away, excessively jumping, seeking deep pressure

The Inner Senses

The vestibular and proprioceptive senses are often referred to as the hidden or inner senses. The vestibular sense "helps with movement, posture, vision, balance, and coordination of both sides of the body" (Myles, Cook, Miller, Rinner & Robbins, 2000, p. 28). Proprioception informs a person as to where his body parts are in space and the appropriate amount of force needed to perform an activity such as picking up a glass of milk. Hyper and hypo sensitivities as well as distortions with these two inner senses cause challenges for those on the autism spectrum. Some common examples of problems experienced in these two senses are in the chart at the bottom of page 19.

The Sensory Star

The "Star"depicts some of the challenges facing a person on the autism spectrum who has sensory integration dysfunction. For example, I was in a room with a friend who has Asperger Syndrome. Suddenly, I noticed her eyes vibrating back and forth – at the same frequency of the fluorescent lights in the ceiling.

For all intents and purposes given her perception, she was in a room with a strobe light. She, like many people on the autism spectrum, perceives the cycling of the fluorescent lights. Most non-spec-

trum people perceive only light flickering when the bulb is very old and needs to be replaced.

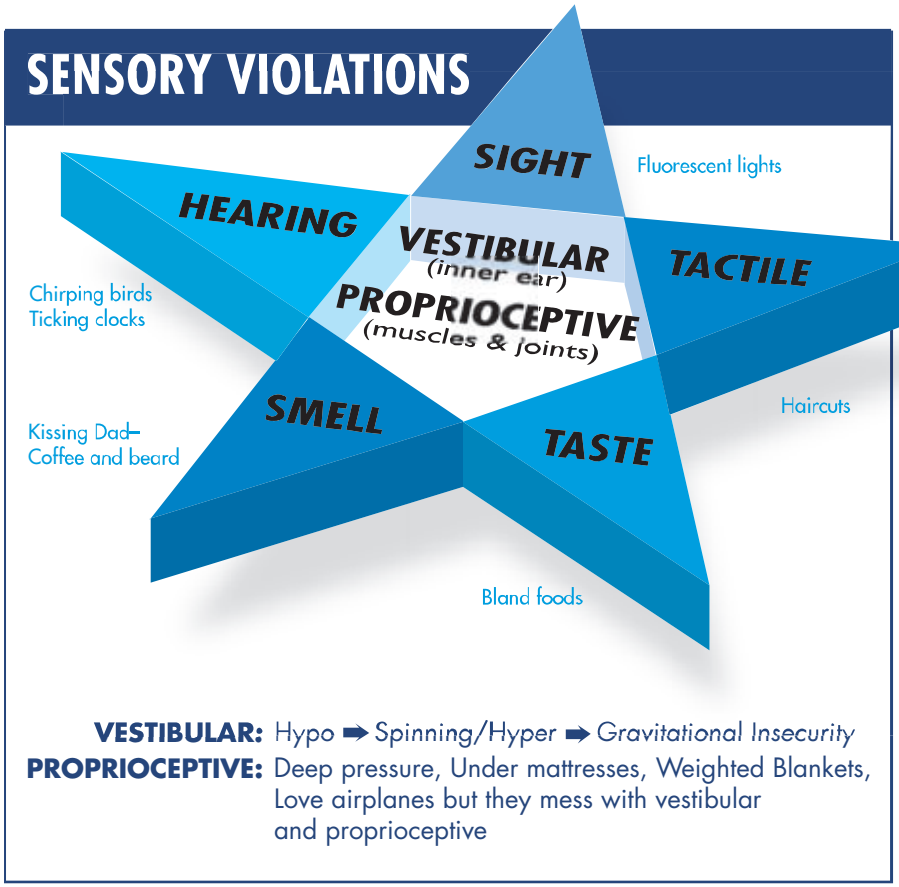
Moments later she asks, "Can we get out of here?" and we quickly leave. Fortunately she has the communication skills needed to call attention to her predicament and thus modify her surroundings by leaving the room.

What about the 8-year old child in grade school? He too feels as if he is sitting next to a strobe light. How can this child be expected to quietly listen to the instructor and fill out a work sheet when he is continually assaulted with what would be a strobe light to most other people?

Suppose he were to get up to turn off the lights. His teacher, seeing him out of his seat (once again), tells him to sit down. This goes on a few more times and the child is finally sent to the principal's office for punishment.

Let's consider the 4-year old nonverbal child. She, too, is in a room, effectively with a strobe light, which is overwhelming her visual sense. Unfortunately, she lacks the cognitive and communicative tools to tell the teacher that the lights are bothering her. It is likely that she has not realized the cause and effect between the light switch and turning off the lights. What do you get? A good old-fashioned tantrum.

I have only considered one of the many possibilities where a behavior such as getting out of one's seat is caused by an overload of the senses. It is important to realize that when faced with a challenging behavior one must at least consider the possibility that the person's actions are based on a sensory overload condition.



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THE INNER SENSES

SENSE	POSSIBLE SENSITIVITY	WHAT IT FEELS LIKE	COMMON REACTION
VESTIBULAR	"low tolerance for activities involving movement" (Myles, et al, 2000, p.29)	dizziness or a lightheaded feeling– how most people would feel after spinning around at a high speed for a while	avoidance of any movement involving sharp changes in direction or the feet leaving the ground–clumsy at team oriented sports
	seeking vestibular stimulation	losing oneself in a space–loss of coordination	attracted to roller coasters and similar amusement park rides
PROPRIOCEPTIVE	clumsy movment – acts like a bull in a china shop	movement is tiring– having a body made of molasses	child often appears fatigued– difficulty in modulating muscular force in everyday activities