

THE EFFECT OF SENSORY AND PERCEPTUAL DIFFICULTIES ON LEARNING STYLES

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Individuals on the autism spectrum have remarkably varied problems with sensory overresponsivity and information processing. While these problems originate in the brain and are biological in nature, they manifest in behaviors that compromise the ability of individuals to learn and function in the world around them. In my analysis of reports from many people with autism, it appears that the manner in which their brains process incoming information can be grouped into three basic categories: (1) sensory overresponsivity, (2) perceptual problems, and (3) difficulties in organizing information.

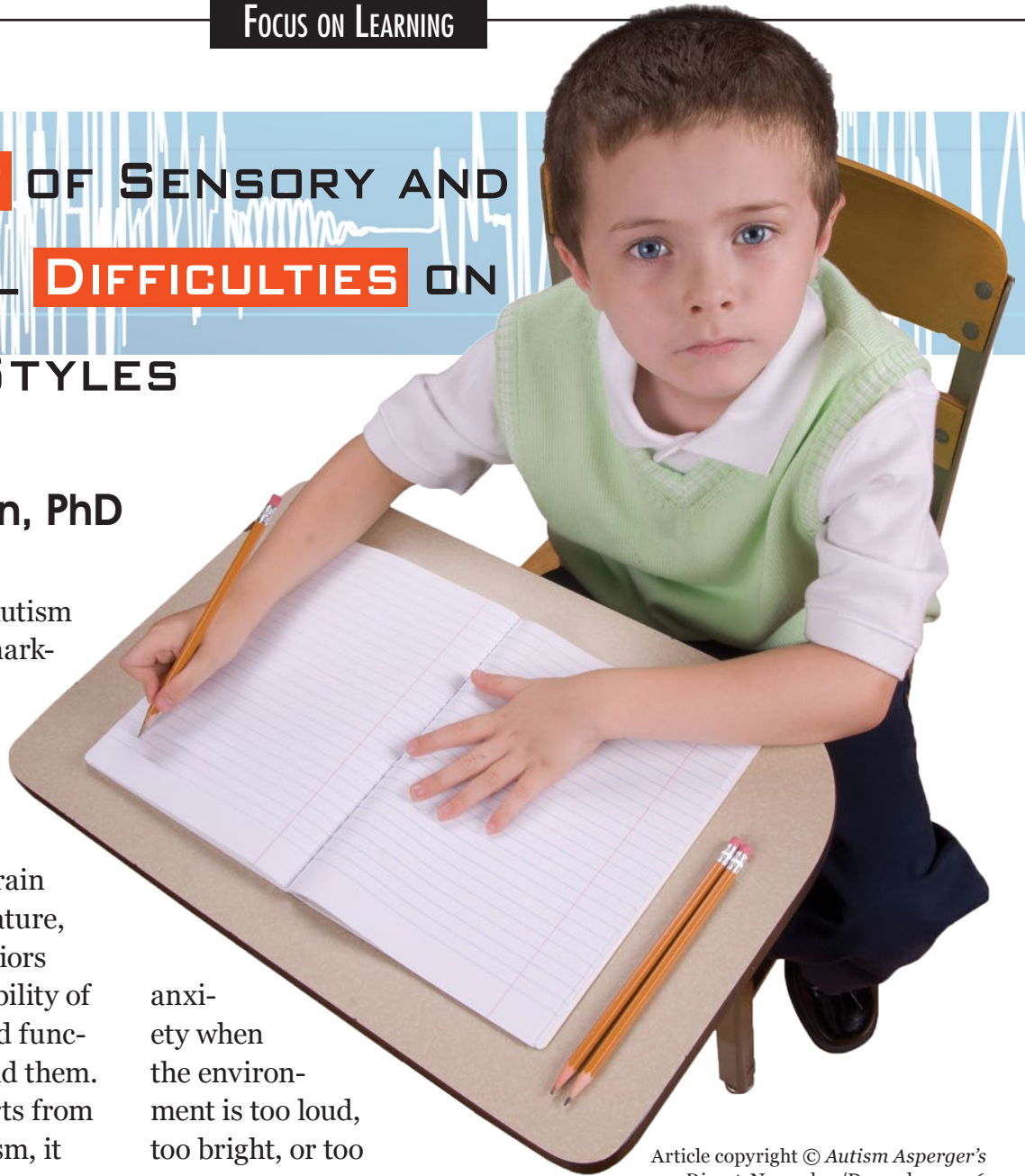
Sensory Overresponsivity

From child to child, sensory overresponsivity is variable. It can range from mild (slight

anxiety when the environment is too loud, too bright, or too chaotic) to severe, with an individual going into a screaming tantrum every time he is in a large supermarket. One child may not tolerate fluorescent lights; another, like me, fears sudden loud noise because it hurts her ears. Children may gag when they encounter certain smells, such as perfumes. The taste and/or texture of foods can be repulsive to them. A light touch can be merely

annoying or actually painful. One child may enjoy water play and splashing, and another may run screaming from it. Some individuals on the spectrum are attracted to objects that move rapidly, and others avoid them. When the senses are disordered, the attention and concentration that learning requires become difficult and, in some cases, impossible.

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Children who spend their days in fear of people and places who, through past experience, have been overwhelming to their senses have little chance to relax enough to take notice of the learning opportunities presented to them.

Perceptual Problems

Problems in this category often determine the style of learning that will be most effective. A child with poor auditory perception may hear sounds that resemble a bad mobile phone connection, where a voice fades in and out or entire parts of a communication may be missing. The child is more likely to learn best with information presented visually. A child with visual perception problems may learn best through the auditory channel.

Children who look out of the corner of their eye while reading often have visual processing problems. Suspect a visual processing problem in children who flick their fingers in front of their eyes or those who dislike fluorescent lights and/or escalators. To some of these individuals, the world looks like it is being viewed

through a kaleidoscope—flat, without depth perception, and broken into pieces. For others, it is like looking through a small tube, where you can see only the small circle of vision directly in front of you, with no peripheral vision. Some nonverbal individuals

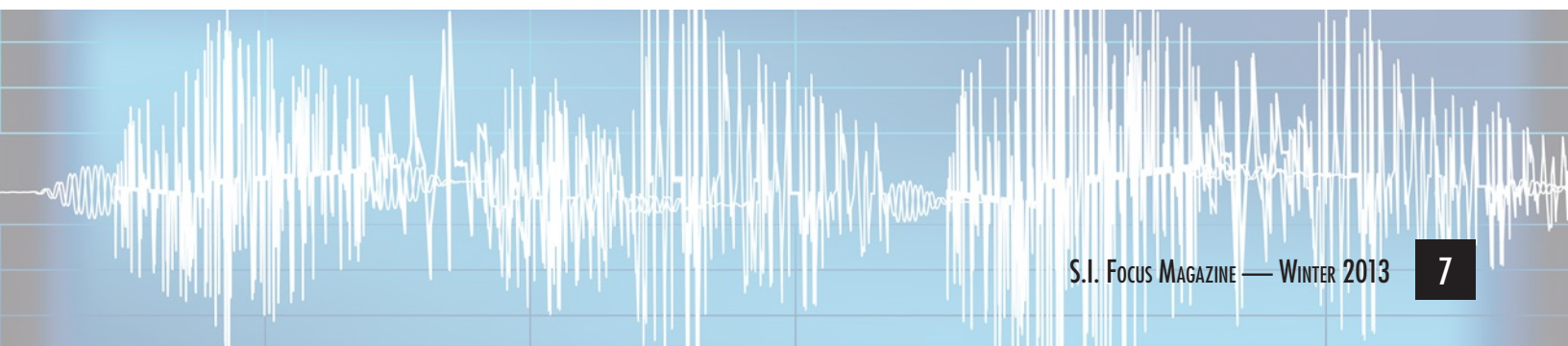
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have both visual and auditory processing problems. They may learn best through their senses of touch and smell. For instance, to learn to dress, they may need to be “walked through” putting on socks or pouring cereal by using a hand-over-hand approach. They may learn letters and

numbers best when they can touch them and trace the shapes with their hands or fingers. Representative objects rather than visual charts can be useful in helping these individuals know when it is time to transition to a new activity.

Organizing Information

Because of atypical connections in the brain, an individual may receive information but be unable to organize it or make sense of it. Donna Williams, a well-known Australian woman with autism, says that speech sounds like “blah-blah-blah” to her, and the meaning disappears. She hears the words clearly but does not understand them. Problems with organizing information can affect children’s ability to form categories that are the foundation for later concept formation. Difficulties people on the spectrum have with multitasking would also fall into this category. Again, these difficulties are highly variable and range from mild to severe, depending on which brain circuits connect and which ones do not. One classic test of



flexible thinking is the Wisconsin Card Sorting Test. In this test, a person has to sort cards with different patterns, one at a time, into categories such as “yellow” or “circles.” A person on the spectrum can be slower to figure out new categories as they are introduced.

Sensory overload can cause either vision or hearing to shut down completely. During these times, no information will get through to the brain, and learning will not occur. Also, sensory and information processing problems are worse when a child is tired. It is therefore best to teach difficult material when a child is alert and wide awake. Since my overresponsivity to noise was fairly mild as a child, I responded well to a gently intrusive teaching method, where the teacher held my chin to make me pay attention. Donna Williams told me this method absolutely would not have worked with her. The tactile input, coupled with the teacher speaking, would have overloaded her, and she would not have been able to process both types of input simultaneously. Donna is a monochan-

nel learner. She has to either look at something or listen to something, but she cannot look and listen at the same time. For her, information processing on more than one sensory channel is not possible.

An effective teacher for children and adults on the spectrum is one that is a good detective, who looks for the source of learning difficulties. Often, the source can be found in one of these categories mentioned previously—or a combination of them. A sensory-based challenge, even one that is considered mild, will dramatically compromise a child’s ability to learn with “traditional” teaching methods. Teachers who truly want to help students with sensory and perception difficulties will figure out the child’s unique learning style



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and adapt his or her teaching methods accordingly. Some children do best with written instructions and assignments; others will do best through oral methods or oral testing. The best teachers have a flexible approach and teach with a style through which these children can learn. ♦

Temple Grandin, PhD, is an internationally respected specialist in the design of livestock handling systems. She is also the most famous person with autism in the world today. She was recently named one of Time magazine’s 100 most influential people and is the subject of the award-winning 2010 HBO biopic. Temple has authored several books on autism and is a worldwide speaker on autism topics. Her website is www.templegrandin.com.