

## Extraordinary People

### Temple Grandin, *Thinking in Pictures*



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Dr. Temple Grandin, professor of animal sciences at Colorado State University, has designed one-third of the livestock-handling facilities in the United States. She has published dozens of scientific papers and gives lectures throughout the world. Some of her lectures describe her new equipment and procedures for safer and more humane animal handling. Others describe her life with autism.

Grandin showed the classic symptoms of autism (now called autism spectrum disorder) during childhood. As a baby, she had no desire to be held by her mother, though she was calm if left alone. As a young child, she seldom made eye contact with others and seemed to lack interest in people. She frequently threw wild tantrums. If left alone, she rocked back and forth or spun around repeatedly. She could sit for hours on the beach, watching sand dribble through her fingers, in a trancelike state. At age 2, she still had not begun talking and was labeled “brain-damaged” because doctors at that time did not know about autism spectrum disorder.

Fortunately, Grandin’s mother was determined to find good teachers, learn ways to calm her daughter, and encourage her to speak and engage with others.

Source: Grandin, T., *Thinking in pictures and my other reports from my life with autism*. New York: Vintage Books, 1995, 132.

Grandin did learn to speak by the time she entered elementary school, although most of her social interaction deficits remained. When she was 12, Grandin scored 137 on an IQ test (which falls in the very superior range) but still was thrown out of a regular school because she didn’t fit in. She persisted, however, and eventually went to college, where she earned a degree in psychology, and then to graduate school, where she earned a PhD in animal sciences.

Grandin has been able to thrive in her career and personal life. Still, she finds it very difficult to understand emotions and social relationships. She does not “read” other people well and often finds herself offending others or being stared at because of her social awkwardness:

I have always felt like someone who watches from the outside. I could not participate in the social interactions of high school life. ... My peers spent hours standing around talking about jewelry or some other topic with no real substance. What did they get out of this? I just did not fit in. I never fit in with the crowd, but I had a few friends who were interested in the same things, such as skiing and riding horses. Friendship always revolved around what I did rather than who I was. (Grandin, 1995, p. 132)

Still, Grandin does not regret that she has autism. She says,

If I could snap my fingers and be a nonautistic person, I would not. Autism is part of what I am. (p. 60)

All the disorders in this book are related to dysfunction in the brain to one degree or another. The disorders we discuss in this chapter are classified in the *DSM-5* specifically as neurological disorders. We consider a group of disorders that typically arise first in childhood, known as the **neurodevelopmental disorders**: attention-deficit/hyperactivity disorder; autism spectrum disorder; intellectual disability; and learning, communication, and motor disorders. Then we consider disorders that typically arise in older age. These are known as the **neurocognitive disorders**: various major and mild neurocognitive disorders, and delirium.

## ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

“Pay attention! Slow down! You’re so hyper today!” Most parents say this at least occasionally. A major focus of socialization is helping children learn to pay attention, control their impulses, and organize their behaviors so that they can accomplish long-term goals. Some children have tremendous trouble learning these skills, however, and may be diagnosed with **attention-deficit/hyperactivity disorder**, or **ADHD** (see the *DSM-5* criteria in Table 1). Eddie in the following case study is a young boy with ADHD.

## CASE STUDY

Richard, age 3½, appeared to be self-contained and aloof from others. He did not greet his mother in the mornings or his father when he returned from work, though if left with a baby-sitter, he tended to scream much of the time. He had no interest in other children and ignored his younger brother. His babbling had no conversational intonation. It was not until age 3 that he could understand simple practical instructions. His speech consisted of echoing some words and phrases he had heard in the past, with the original speaker's accent and intonation; he could use one or two such phrases to indicate his simple needs. For example, if he said, "Do you want a drink?" he meant he was thirsty. He did not communicate by facial expression or use gesture or mime, except for pulling someone along with him and placing his or her hand on an object he wanted. He was fascinated by bright lights and spinning objects and would stare at them while laughing, flapping his hands, and dancing on tiptoe. He was intensely attached to a miniature car, which he held in his hand, day and night, but he never played imaginatively with this or any other toy. From age 2 he had collected kitchen utensils and arranged them in repetitive patterns all over the floors of the house. These pursuits, together with occasional periods of aimless running around, constituted his whole repertoire of spontaneous activities.

The major management problem was Richard's intense resistance to any attempt to change or extend his interests. Removing his toy car, even retrieving, for example, an egg whisk or a spoon for its legitimate use in cooking, or trying to make him look at a picture book precipitated temper tantrums that could last an hour or more, with screaming, kicking, and the biting of himself or others. These tantrums could be cut short by restoring the status quo.

His parents had wondered if Richard might be deaf, but his love of music, his accurate echoing, and his sensitivity to some very soft sounds, such as those made by unwrapping chocolate in the next room, convinced them that this was not the cause of his abnormal behavior. Psychological testing gave Richard a mental age of 3 years in non-language-dependent skills (such as assembling objects) but only 18 months in language comprehension. (Source: *DSM Casebook: A Learning Companion to the Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition. American Psychiatric Association, 2013.)

The deficits in social interactions and communications of **autism** may first show up in infants' and toddlers' interactions with their parents, which are usually characterized by reciprocal adoration. Compared to normally developing children, infants with autism spectrum disorder may not smile and coo in response to their caregivers or initiate play with their caregivers. They may not want to cuddle with their parents, even when they are frightened. They may hardly ever make eye contact relative to cultural norms or show joint attention (i.e., failure to follow a caregiver's pointing or eye gaze). Other early symptoms often include delayed language development. When they are a bit older, children with autism spectrum disorder may not be interested in playing with other children, preferring solitary play. They also do not seem to react to other people's emotions. In the chapter opener, Temple Grandin describes how she had to work hard to overcome her lack of understanding of social interactions.

Approximately 50 percent of children with autism spectrum disorder do not develop useful speech. Those who do develop language may not use it as other children do. In the case study about Richard, he showed several of the communication problems characteristic of children with autism spectrum disorder. Rather than generating his own words, he simply echoed what he had just heard, a behavior called **echolalia**. He reversed pronouns, using *you* when he meant *I*. When he did try to generate his own words or sentences, his language was one-sided and lacked social reciprocity and he did not modulate his voice for expressiveness, instead sounding almost like a monotone voice-generating machine.

The second group of deficits concerns the activities and interests of children with autism spectrum disorder. Rather than engaging in symbolic play with toys, they are preoccupied with one feature of a toy or an object. Richard was preoccupied with his miniature car, carrying it everywhere without playing with it, and Temple Grandin was interested only in watching sand dribble through her fingers. They may engage in bizarre, repetitive behaviors with toys. Rather than using two dolls to play "house," a child with autism spectrum disorder might take the arm off one doll and simply pass it back and forth between her two hands. Routines and rituals often are extremely important to children with autism spectrum disorder. When any aspect of their daily routine is changed—for example, if their mother stops at the bank on the way to school—they may become excessively frightened and highly distressed. Some children perform stereotyped and repetitive behaviors using some part of their body, such as incessantly flapping their hands or banging their head against a wall. These behaviors sometimes are referred to as *self-stimulatory behaviors*, under the