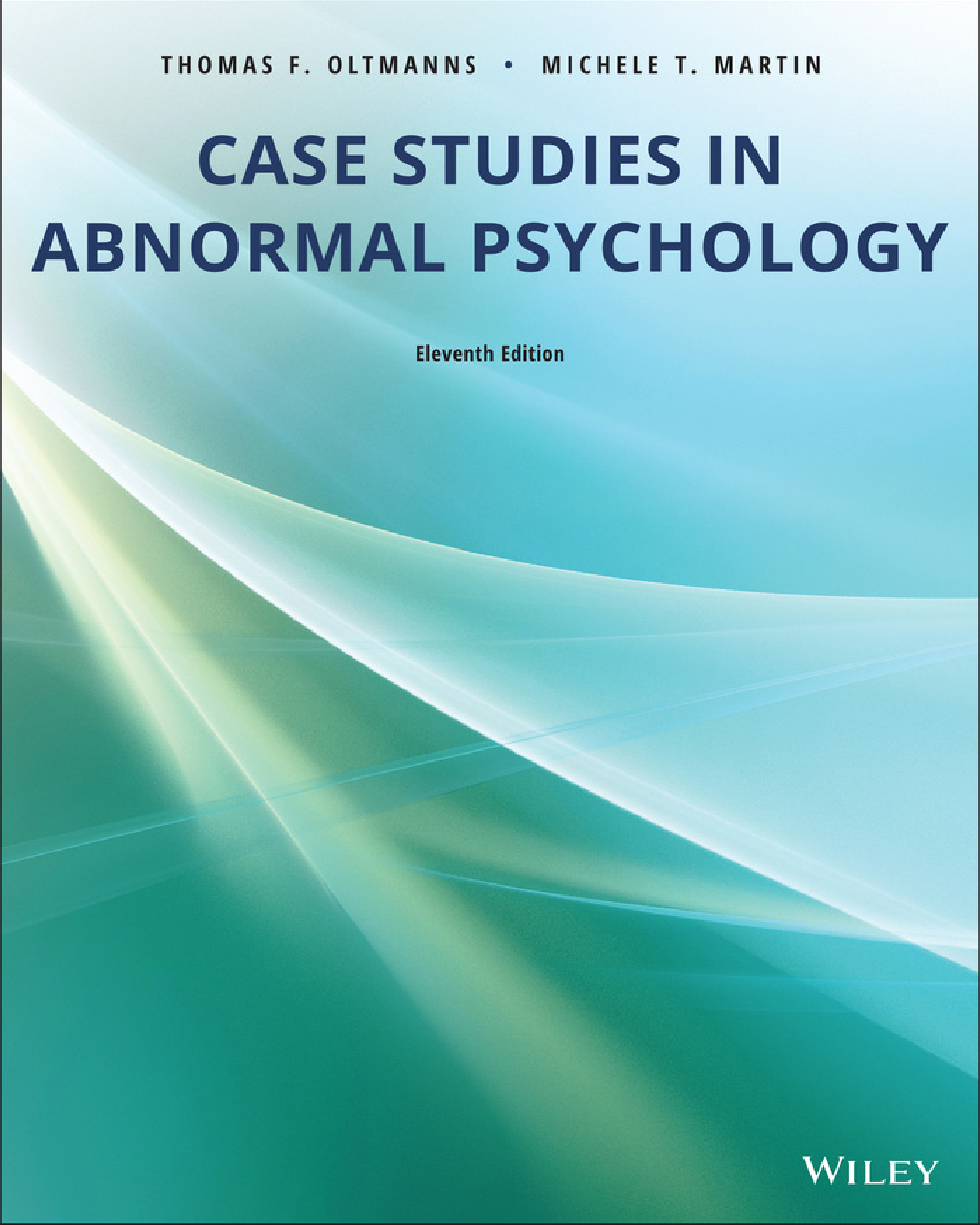
THOMAS F. OLTMANNS • MICHELE T. MARTIN

CASE STUDIES IN ABNORMAL PSYCHOLOGY

Eleventh Edition



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CASE STUDIES IN ABNORMAL PSYCHOLOGY

ELEVENTH
EDITION

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WILEY

"To Presley, Riley, and Kinley"

—TFO

"To Matt, Caroline, Grace, and Thomas"

—MTM

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PREFACE

Most textbooks on abnormal psychology include short descriptions of actual clinical cases. However, those presentations are necessarily brief and too fragmented for students to gain a clear understanding of the unique complexities of a person's troubled life. They cannot describe the client's developmental history, the manner in which a therapist might conceptualize the problem, the formulation and implementation of a treatment plan, or the trajectory of a disorder over a period of many years. In contrast to such brief descriptions, a detailed case study can provide a foundation on which to organize important information about a disorder. This enhances the student's ability to understand and recall abstract theoretical and research issues.

The purpose of *Case Studies in Abnormal Psychology*, 11e is, therefore, threefold: (a) to provide detailed descriptions of a range of clinical problems, (b) to illustrate some of the ways in which these problems can be viewed and treated, and (c) to discuss some of the evidence that is available concerning the prevalence and causes of the disorders in question. The book is appropriate for both undergraduate and graduate courses in abnormal psychology. It may also be useful in courses in psychiatric social work or nursing and could be helpful to students enrolled in various practicum courses that teach how best to conceptualize mental-health problems and plan treatment. It may be used on its own or as a supplement to a standard textbook in abnormal psychology.

In selecting cases for inclusion in the book, we sampled from a variety of problems, ranging from psychotic disorders (e.g., schizophrenia and bipolar disorder) to personality disorders (e.g., paranoid and borderline) to various disorders of childhood and aging (e.g., attention-deficit/hyperactivity disorder). We focused deliberately on cases that illustrate particular problems that are of interest to students of abnormal psychology. We do not mean to imply, however, that all the cases fit neatly into specific diagnostic molds. In addition to describing "classic" behavioral symptoms (e.g., hallucinations, compulsive rituals, or specific fears), we emphasized the social context in which these disorders appear as well as life problems that are significant in determining the person's overall adjustment, even though they may not be relevant from a diagnostic standpoint. Several of the cases include a consideration of marital adjustment and parent–child relationships.

Our coverage extends to examples of eating disorders, dissociative identity disorder, gender dysphoria, autism spectrum disorder, and posttraumatic stress disorder (following rape). Each of these disorders represents an area that has received considerable attention in the contemporary literature, and each has been the focus of theoretical controversy.

Our cognitive-behavioral perspective is clearly evident in most of these case discussions. Nevertheless, we also present and discuss alternative conceptual positions. The cases can, therefore, be used to show students how a given problem can be reasonably viewed and treated from several different perspectives. Although most of the interventions described illustrate a cognitive-behavioral approach to treatment, we have also described biological treatments (e.g., medication, electroconvulsive therapy, and psychosurgery) when they are relevant to the case. In some cases, the outcome was not positive. We have tried to present an honest view of the limitations, as well as the potential benefits, of various treatment programs. Note also that some of the cases were about people who were not in treatment. We believe that it is important to point out that many people who have psychological disorders do not see therapists.

Each case study concludes with a discussion of current knowledge about causal factors. Some of these discussions are necessarily briefer than others. More research has been done on schizophrenia, for example, than on gender dysphoria or paranoid personality disorder. We had two goals in mind for these discussions. First, we have tried to use the case material to illustrate the application of research to individual clients' problems. Second, we alert readers to important gaps in our knowledge of abnormal psychology, our abiding belief being that realizing what we do not know is as important as appreciating what we do know. All these discussions have been revised in the tenth edition to include new ideas and empirical evidence that are changing the way that particular disorders are viewed and treated.

We have included discussions of issues associated with gender, culture, and ethnicity in all the previous editions of this book. Attention to these issues, particularly those involving gender, have been strengthened in this eleventh edition. For example, the case on parasomnia (nightmare disorder) discusses important issues related to race and gender. Our description of posttraumatic stress disorder following rape trauma includes many issues that are particularly important for women (e.g., helpful and harmful ways in which other people react to the victim; decisions by the victim, her therapist, and her professor about when to report the rapist; and so on). Our discussion of the causes of major depression includes consideration of possible explanations for gender differences in this disorder. The chapters on dissociative identity disorder and borderline personality disorder both discuss the impact of prior sexual abuse on subsequent development of psychopathology. Both cases of eating disorder involve extended consideration of cultural attitudes that affect women's feelings and beliefs about themselves. These are only a few of the instances in which we have attempted to address gender issues in relation to the etiology and treatment of mental disorders. We are grateful to Christina Noel White (Washington University in St. Louis) and Patricia Lee Llewellyn (University of Virginia) for many helpful comments on these issues.

All the cases in this book are based on actual clinical experience, primarily our own, but, in some instances, that of our colleagues and students. Various demographic characteristics (names, locations, and occupations) and some concrete clinical details have been changed to protect the anonymity of clients and their families. In some instances, the cases are composites of clinical problems with which we have dealt. Our intent is not to put forth claims of efficacy and utility for any particular conceptualization or intervention but instead to illustrate the ways clinicians think about their work and implement abstract principles to help a client cope with life problems. The names used in the case studies are fictitious; any resemblance to actual persons is purely coincidental.

As in the first ten editions of this book, we have not identified the authors of specific case studies. This procedure has been adopted and maintained to preserve the clients' anonymity. We are grateful to Amy Bertelson, Serrita Jane, Ron Thompson, Kevin Leach, and Kimble Richardson, who provided extensive consultation on six of these cases. We also thank Elana Farace and Sarah Liebman for drafting two others.

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THOMAS F. OLTMANNS,
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Autism Spectrum Disorder

1

Sam Williams was the second child of John and Carol Williams. The couple had been married for 5 years when Sam was born; John was a lawyer and Carol a homemaker. Sam weighed 7 pounds, 11 ounces at birth, which had followed an uncomplicated, full-term pregnancy. Delivered by Caesarean section, he came home after 6 days in the hospital.

His parents reported that Sam's early development seemed quite normal. He was not colicky, and he slept and ate well. During his first 2 years, there were no childhood illnesses except some mild colds. By Sam's second birthday, however, his parents began to have concerns. He had been somewhat slower than his older sister in achieving some developmental milestones (such as sitting up alone and crawling). Furthermore, his motor development seemed uneven. He would crawl normally for a few days and then not crawl at all for a while. Although he made babbling sounds, he had not developed any speech and did not even seem to understand anything his parents said to him. Simple requests such as "Come" or "Do you want a cookie?" elicited no response.

Initially, his parents thought that Sam might be deaf, or wondered if he was being stubborn. Many times they tried to force him to obey a command or say "Mama" or "Dada," but Sam would often respond by having a tantrum, yelling, screaming, and throwing himself to the floor. Their pediatrician told them that Sam might have an intellectual disability.

As he neared his third birthday, Sam's parents noticed him engaging in more and more strange and puzzling behavior. Most obvious were his repetitive hand movements. Many times each day, he would suddenly flap his hands rapidly for several minutes (activities like this are called self-stimulatory behaviors). Other times he rolled his eyes around in their sockets. He still did not speak, but he made smacking sounds and sometimes he would burst out laughing for no apparent reason. He was walking now and often walked on his toes. Sam had not been toilet trained, although his parents had tried.

Sam's social development was also worrying his parents. Although he would let them hug and touch him, he would not look at them and generally seemed indifferent to their attention. He also did not play at all with his older sister, seeming to prefer being left alone. Even his solitary play was strange. He did not engage in make-believe play with his toys—for example, pretending to drive a toy car into a gas station. Instead, he was more likely just to manipulate a toy, such as a car, holding it and repetitively spinning its wheels. The only thing that really seemed to interest him was a ceiling fan in the den. He was content to sit there for as long as permitted, watching intently as the fan spun around and around. He would often have temper tantrums when the fan was turned off.

At the age of 3, the family's pediatrician recommended a complete physical and neurological examination. Sam was found to be in good physical health, and the neurological examination revealed nothing remarkable. A psychiatric evaluation was performed several months later. Sam was brought to a treatment facility specializing in behavior disturbances of childhood and was observed for a day. During that time, the psychiatrist was able to see firsthand most of the behaviors that Sam's parents had described—hand flapping, toe walking, smacking sounds, and preference for being left alone. When the psychiatrist evaluated Sam, she observed that a loud slapping noise did not elicit a startle response as it does in most children. The only vocalization she could elicit approximating speech was a repetitive "nah, nah." Sam did, however, obey some simple commands such as "Come" and "Go get a potato chip." She diagnosed Sam with autism spectrum disorder and recommended placement in a day-treatment setting.

Conceptualization and Treatment

Sam was 4 years old by the time there was an opening for him at the treatment center. He attended the special school 5 days a week, spending the remainder of his time at home with his parents and sister. The school provided a comprehensive educational program conducted by specially trained teachers. The program was organized mainly along operant conditioning principles. In addition, Sam's parents attended classes once a week to learn operant conditioning so they could continue the school program at home. The school's personnel conducted another evaluation of Sam, observing him in the school and later at home. Interviews with the parents established that they were both well adjusted and that their marriage was stable. Both parents were, however, experiencing considerable stress from having to cope with Sam on a day-to-day basis and from their fears that his condition might have been caused by something they had done.

One of the first targets of the training program was Sam's eye contact. When working with Sam, his teacher provided small food rewards when Sam spontaneously looked at him. The teacher also began requesting eye contact and again rewarded Sam when he complied. Along with this training, the teacher worked on having Sam obey other simple commands. The teacher would wait for a time when Sam seemed attentive and would then, establishing eye contact, say the command and model the desired behavior by demonstrating it. For example, the teacher would say, "Sam, stretch your arms up like this," lifting Sam's arms up and rewarding him with praise and a small amount of food, such as a grape. This procedure was repeated several times. When Sam began to become more skilled at following the command, the teacher stopped raising Sam's arms for him and had him do it himself. These training trials were conducted daily. As Sam's response to a particular command became well established, the teacher would expand his learning to following commands in other situations and by other people. Sam's progress was slow. It often took weeks of training to establish his response to a simple command. After his first year in the school, he responded reliably to several simple requests such as "Come," "Give it to me," and "Put on your coat." At the same time that Sam was learning to respond to commands, other aspects of the training program were also being implemented. While Sam was in the classroom, his teacher worked with him on trying to develop skills that would be important in learning, for example, sitting in his seat, maintaining eye contact, and listening and working for longer periods of time. His teacher used the same reward strategy to teach Sam each activity.

As these skills became better established, the teacher also began working on expanding Sam's vocabulary by teaching him the words for pictures of common objects. A picture of one object, such as an orange, was placed on a table in front of Sam. After Sam had looked at the object, the teacher said, "This is an orange. Point to the orange." When Sam pointed to the orange, he was rewarded. If necessary, the teacher would move his hand for him at first. Next another picture, such as a cat, was selected and the same procedure followed. Then the two pictures were placed in front of Sam and the teacher asked him to point to one of them: "Point to the orange." If Sam pointed correctly, he was rewarded. If he did not, the teacher moved his hand to the correct object. After Sam had correctly pointed to the orange several times in a row, the teacher asked him to point to the cat. With that response established, the teacher switched the position of the pictures and repeated the process. When Sam had begun to point correctly to the orange and the cat, a third picture was introduced and the training procedure was started anew. During 1 year of training, Sam learned the names of 38 common objects with this procedure.

Sam's speech therapist, whom he saw daily, was also working with him on language skills. Initially, they worked on getting Sam to imitate simple sounds. Sitting across a table from Sam and waiting until Sam was looking (or prompting him to look by holding a piece of food near his mouth), the teacher would say, "Say this, ah," taking care to accentuate the movements required for this sound. At first, Sam was rewarded for making any sound. Subsequently, rewards were given when Sam approximated more and more closely the required sound. As sounds were mastered, Sam was trained to say simple words in a similar fashion. Over the course of a year, Sam learned a few words—"bye-bye," "no more," and "mine," but overall, his verbal imitation remained poor.

Teaching Sam to dress and undress himself was another target during the first year. Initially, his teacher helped him through the entire sequence, describing each step as they did it. Next, they would go through the sequence again, but now Sam had to do the last step himself (taking off his shoes, putting on his shoes). More difficult steps (tying shoes) were worked on individually to give Sam more practice. When some progress was being made, this aspect of the treatment was carried out by the parents. They first observed the teacher working with Sam and then discussed the procedure and were shown how to make a chart to record Sam's progress. Over a period of weeks, the number of steps that Sam had to complete independently was gradually increased, moving from the last toward the first. Sam was rewarded each time he dressed or undressed, usually with a special treat, such as a favorite breakfast food. In this case, the training was successful. By midyear, Sam had mastered dressing and undressing.

Toilet training was another focus. At home and at school, Sam was rewarded for using the toilet. He was checked every hour to see if his pants were dry. If they were, he was praised and reminded that when he went to the toilet he would get a reward. Shortly thereafter, Sam would be taken to the toilet, where he would remove his pants and sit. If he urinated or defecated, he was given a large reward. If not, he was given a small reward just for sitting. As this training was progressing, Sam was also taught to associate the word "potty" with going to the toilet. Progress was slow at first, and there were many "accidents," which both teachers and parents were instructed to ignore. But Sam soon caught on and began urinating or defecating more and more often when he was taken to the bathroom. Then the parents and teachers began working on having him tell them when he had to go. When they checked to see if his pants were dry, they would tell him to say "potty" when he had to go to the toilet. Although there were many ups and downs in Sam's progress, by the end of the year he was having an average of fewer than two accidents per week.

Sam's temper tantrums slowed his progress during his first year at school. They occurred sometimes when he was given a command or when a teacher interrupted something he was doing. Not getting a reward during a training session also led to tantrums. Sam would scream loudly, throw himself to the ground, and flail away with his arms and legs. Teachers tried several interventions. Sam's tantrums had usually led to getting his own way, particularly at home. For example, a tantrum had often resulted in getting his parents to keep the ceiling fan on, even when they wanted to turn it off. Ignoring the tantrum was the first approach. Sam's teachers and parents simply let the tantrum play itself out, acting as if it had not happened. This did not reduce the number of tantrums, so "time-out" was tried. Every time a tantrum started, Sam was picked up, carried to a special room, and left there for 10 minutes or until the screaming stopped. This procedure also failed to have much effect on the tantrums and screaming, even with several modifications such as lengthening the time-out period.

During Sam's second year of treatment, many of the first year's programs were continued. Sam, now 6 years old, was responding to more commands, and his ability to recognize and point to simple objects increased. In speech therapy, he learned to imitate more sounds and some new words (“hello,” “cookie,” and “book”), but his progress was slow and uneven. He would seem to master some sound or word and then lose it. He was still dressing and undressing himself and using the toilet reliably.

Feeding skills were one of the first targets for the second-year program. Although his parents had tried to get him to use a knife, fork, and spoon, Sam resisted and ate with his fingers or by licking the food from his plate. Drinking from a cup was also a problem. He still used a baby cup with only a small opening at the top. Sam’s teachers and parents implemented a feeding skills program that involved a combination of modeling and operant conditioning. Training sessions conducted at mealtime first involved getting Sam to use a spoon. Sam was shown how to hold the spoon; then the teacher picked up the spoon, saying, “Watch me. You push the spoon in like this and then lift it up to your mouth.” Sam did not initially imitate, so the teacher had to guide him through the necessary steps: moving his hand and spoon to pick up food, raising his arm until the spoon was at his mouth, telling him to open his mouth, and guiding the spoon in. Praise was provided as each step in the chain was completed. After many repetitions, he was required to do the last step himself. Gradually, he did more and more of the steps alone. Successes were followed by praise and failures by saying “no” or removing his meal for a short time. When eating with a spoon was well established, the training was expanded to using a fork and drinking from a cup. In several months, Sam was eating and drinking well.

Sam’s failure to play with other children was also a major focus during the second year. The first step was to get him to play near other children. Most of his playtime was spent alone, even when other children were in the playroom with him. His teacher watched Sam carefully and rewarded him with small bits of food whenever he was near another child with autism spectrum disorder. A procedure was also used to force Sam to interact with another child. Sam and another child would be seated next to each other and given the task of stacking some blocks. Each child was, in turn, given a block and prompted to place it on the stack. In addition to praising them individually as they stacked each block, both children were rewarded with praise and food when they had completed their block tower. After repeating this process several times, the program was expanded to include the cooperative completion of simple puzzles. “Sam, put the dog in here. Okay now, Hannah, put the cat here.” Gradually prompts were faded out, and the children were simply rewarded for their cooperative play. Though this aspect of therapy progressed well, transferring the skills to the natural play environment proved difficult. The teacher tried to have Sam and another child play together with toys such as a farm set or a small train, teacher encouraging them to move the objects around, talking to them about what they were doing and rewarding them for following simple commands. Although Sam would usually follow these commands, his play remained solitary, with little eye contact or cooperation with the other child.

Sam’s self-stimulatory behavior was a final target of the second year. Sam’s hand flapping and eye rolling had already decreased somewhat over the past year, perhaps because more of his day was being filled with constructive activities. Now a specific intervention, to be used by Sam’s teachers and his parents, was planned. Whenever Sam began hand flapping, he was stopped and told to hold his hands still, except when told to move them, for 5 minutes. During the 5-minute period, he was told to hold his hands in several different positions for periods of 30 seconds. If he did not follow the command, the teacher or parent moved his hands into the desired position; if he did not maintain the position for 30 seconds, the teacher or parent held his hands still. Food rewards were provided for successful completion of each 30-second period. Gradually, the teachers and parents were able to get Sam to comply without moving his hands for him or holding him. Then they implemented a similar program for the eye rolling, having Sam fix his gaze on certain objects around his environment whenever he began to roll his eyes. Over a period of several months of training, Sam’s self-stimulatory behavior decreased by about 50 percent.

At the beginning of his third year in school, Sam, now 7 years old, was given an intelligence test and achieved an IQ of 30, a score reflecting severe intellectual disability. The language and speech training continued, as did the attempts to reduce the frequency of his self-stimulatory behavior. His tantrums, which had not responded to previous interventions, were becoming worse. In addition to screaming and throwing himself on the floor, he now became violent at times. On several occasions, he had either punched, bitten, or kicked his sister. His parents reported that during these tantrums, he became so out of control that they feared he might seriously injure someone. Similar episodes occurred in school, usually when an ongoing activity was interrupted or he failed at some task.

Trouble had also emerged on the school bus. All children were required to wear seat belts, but Sam would not do so and was often out of his seat. Twice in one week, the bus driver stopped the bus and tried to get Sam buckled back into his seat. He bit the bus driver once the first time and twice the second. The bus company acted quickly and suspended service for Sam. In an initial attempt to resolve the problem, Sam was put on haloperidol (Haldol), a drug widely used in the treatment of schizophrenia in adults. It was tried for a month but didn't work, so it was discontinued. Sam's mother had to drive him to and from school, and he was beginning to miss days or be late when his mother had schedule conflicts.

The seriousness of the tantrum problem and the fact that other treatments had not worked led to the implementation of a punishment system. Because Sam's tantrums and violent outbursts were almost always preceded by loud screaming, it was decided to try to break up the usual behavior sequence and punish the screaming. Whenever Sam began to scream, a mixture of water and Tabasco sauce was squirted into his mouth. The effect of this procedure, which was used by both his teachers and parents, was dramatic. The first day of the treatment, Sam began screaming and was squirted six times. His response to the Tabasco mixture was one of shock and some crying, which stopped quickly after he was allowed to rinse out his mouth. The next day, he was squirted with the Tabasco twice. The third and fourth days, he did not scream at all. The fifth day, he had one screaming episode; thereafter, he neither screamed nor had a severe temper tantrum again for the rest of the year.

Sam's progress in other areas was not so dramatic. His vocabulary slowly expanded, as he learned to say more words and recognize more and more objects. But his performance was highly variable from day to day. His self-stimulatory behavior continued, although at a level below that which had been present earlier. He remained isolated, preferring to be alone rather than with other children.

Discussion

Autism spectrum disorder is defined in *DSM-5* (APA, 2013, p. 53) as a combination of the former diagnostic categories of autistic disorder, Asperger's syndrome, and Rett syndrome. The disorder is characterized by significant problems in social behavior, difficulties in communication and interaction, and by unusually limited and repetitive behaviors and interests. The diagnosis includes specifiers so clinicians can describe additional details about the person's symptoms and functioning such as severity, level of intellectual ability, limitations in language, and known genetic disorders that might be related to the autism spectrum disorder.

A major feature of autism spectrum disorder is abnormality in social development (Volkmar, Chawarska, & Klin, 2005). Children with the disorder have a lack of interest in or difficulty relating to people, evident soon after birth (Constantino et al., 2017). Infants with autism spectrum disorder are often reported to be "good babies" because they do not place demands on their parents. They do not fret or seek attention, but nor do they reach out or smile or look at their mothers when being fed. When they are picked up or cuddled, they often arch their bodies away from their caretakers instead of molding themselves against the adult as many other babies do. They are content to sit quietly in their playpens for hours, not paying attention to other people.

After infancy, they do not form typical attachments with people but may become extremely attached to mechanical objects such as refrigerators or vacuum cleaners. Normally developing infants show an ability to pay attention to movements by people as early as the second day of life, but this ability is missing in children with autism spectrum disorder even by 2 years of age (Klin, Lin, Gorrindo, Ramsay, & Jones, 2009). As children, they often do not initiate interactions with others, use facial expressions to communicate with others, share enjoyment, or empathize with others (Bishop, Ganahan, & Lord, 2007). They are less able to identify emotional expressions on others' faces, especially when the expressions are subtle (Rump, Giovannelli, Minshew, & Strauss, 2009). Clearly, this feature was very characteristic of Sam. Although he did not actively avoid human contact or develop an attachment with a mechanical object, he was almost totally asocial.

Another major feature of autism spectrum disorder is restricted or stereotyped interests (Volkmar et al., 2005), including compulsive and ritualistic activity, such as a fascination with spinning objects, as Sam had. They may have difficulty walking but be proficient at twirling objects and in performing ritualistic hand movements. They seem to enjoy other rhythmic movements, such as endless body rocking. They may also become preoccupied with manipulating a mechanical object and be very upset when interrupted. These behaviors may serve the purpose of soothing or occupying them (Leekam, Prior, & Uljarevic, 2011). Almost all children with autism show some type of repetitive sensorimotor behavior (Lord, 2010). Furthermore, children with autism spectrum disorder often become extremely upset over changes in daily routine and their surroundings. They may cry or have a temper tantrum if given milk in a different drinking cup or if furniture is rearranged. These symptoms suggest a compulsive need for stability (Smith et al., 2009). In play, they may continually line up toys or construct intricate patterns out of household objects. They engage in much less symbolic or make-believe play than either normal or intellectually disabled children of the same mental age, showing impaired imagination (Leekam et al., 2011). They may become preoccupied with train schedules, subway routes, or number sequences, and even if the focus of their preoccupation is an appropriate one for children, such as dinosaurs, the intensity of it is debilitating, and it interferes with their daily lives (Lord, 2010). Clearly, Sam displayed many of these behaviors.

Many children with autism spectrum disorder also have deficits in communication. Mutism—complete absence of speech—occurs in a significant subgroup of children with this disorder, as was true with Sam. About 25 percent of all children with autism spectrum disorder are not verbal (Wan et al., 2011). When they do speak, peculiarities are often found, including echolalia, where children echo, usually with remarkable fidelity, what they have heard another person say. In delayed echolalia, the child may not repeat the sentence or phrase until hours or weeks after hearing it. Another common abnormality is pronoun reversal. They refer to themselves as “he,” “you,” or by their own proper names; they seldom use the pronouns “I” or “me” and then only when referring to others.

The ability or inability to speak is often an effective predictor of the later adjustment of children with autism spectrum disorder. Billstedt, Gillberg, and Gillberg (2007) followed up a community sample of 105 people with the disorder from early childhood until young adulthood. They found that those who had developed some spoken language by age 5 had a better outcome as adults than those who had not. Based on these findings, we would predict a relatively poor outcome for Sam.

Many children with autism spectrum disorder also have problems in eating, often refusing food or eating only one or a few kinds of food. This hyperresponsiveness, an aversion to new stimuli, is also seen in their oversensitivity to new sounds or tactile experiences. Hyperresponsiveness was once thought to be unique to children with autism spectrum disorder, but it is actually strongly linked to mental age; it is observed among children with intellectual disability as well (Baranek, Boyd, Poe, David, & Watson, 2007). Like Sam, some children with autism spectrum disorder are first thought to be deaf because they never respond to any sound; some even seem to be insensitive to sound or light. Development is usually delayed, with frequent difficulty in becoming toilet trained; head banging and other self-injurious behaviors are common (Bishop et al., 2007). Children with autism spectrum disorder whose intelligence is in the normal range are able to describe their simple emotional experiences such as anger or happiness, but when describing complex emotions such as embarrassment or pride, their accounts are very simplified, even impoverished, and do not fit the context in which they were described as having occurred (Losh & Capps, 2006).

Autism spectrum disorder is being diagnosed more frequently (Barbaresi, Katusic, Colligan, Weaver, & Jacobsen, 2005). From 1980 to 1983, the incidence was 5.5 per 100,000 children, but from 1995 to 1997, it was 44.9 per 100,000, an 8.2-fold increase. The increase was most noticeable after the *DSM-III-R* was published in 1988 (APA), which broadened the diagnostic criteria and increased awareness of autism. It is probable that the increase in cases is at least in part due to diagnostic changes rather than to an actual increase in the disorder. In addition, the fact that autism spectrum disorder is now being diagnosed at a younger age increases the prevalence rate (Wazana, Bresnahan, & Kline, 2007). Special education services are available for children with this diagnosis, so clinicians may be more likely to make that diagnosis so children who are having difficulty would be able to receive services (Barbaresi, Colligan, Weaver, & Katusic, 2009). Many cases of autism spectrum disorder probably used to go undetected, and it is still not clear whether the disorder is becoming more common or just being better identified. There was no significant increase in worldwide rates between 1990 and 2010 and there are no significant differences from region to region; one in 132 people has the disorder (Baxter et al., 2015). Rates as high as 1.5 in 100 have been reported in developed countries but the increased number of cases are without intellectual impairment (Lyall et al., 2017).

Boys have rates of autism spectrum disorder three to four times higher than girls (Volkmar et al., 2005). There is a high comorbidity with seizure disorders. About 75 to 80 percent of people with autism spectrum disorder also have an intellectual disability (Kabot, Masi, & Segal, 2003). A very small number also have the rare savant syndrome, a discrete area of outstanding ability such as calendar calculation or art, music, or memory skills in a very specific area (Heaton & Wallace, 2004). Savant syndrome is associated with autism spectrum disorder but is not understood.

What happens to such severely disturbed children when they reach adulthood? The substantial majority are unable to meet milestones associated with adulthood—working, living independently, and engaging in social activities (Bishop-Fitzpatrick et al., 2016). Expectations for how to define a good quality of life could be expanded from normative expectations to also consider the presence of supportive relationships, good health, and adequate living situations, as these broader outcomes can have significant meaning in a person's life and are obtained by some individuals with autism spectrum disorder.

Etiological Considerations

Investigators believe that neurobiological factors are the cause of autism spectrum disorder (Volkmar et al., 2005). A number of neurological abnormalities have been documented. Toddlers with autism spectrum disorder have heads that are 10 percent larger in volume than those without the disorder (Volkmar et al., 2004). This difference is not present at birth, and the overgrowth during toddlerhood and childhood tends to level off so that differences are not so marked during adulthood. Abnormalities are also found in the amygdala, hippocampus, and cerebellum; the nature and causes of these abnormalities are being investigated. Furthermore, the prevalence of the disorder in children whose mothers had rubella during the prenatal period is approximately 10 times higher than in the general population of children.

Genetic factors in the etiology of autism spectrum disorder are well established. Siblings of children with the disorder have a 2 percent chance of also having it (McBride, Anderson, & Shapiro, 1996). Although this is a small percentage, it represents a 50-fold increase in risk as compared to the morbidity risk in the general population. Twin studies provide further evidence of the importance of genetic factors—monozygotic twins have concordance rates of over 60 percent, whereas dizygotic twins have concordance rates of 0 percent (Muhle, Trentacoste, & Rapin, 2004). At least 3 to 4 but maybe as many as 10 different genes are believed to interact to result in this phenotype (Volkmar et al., 2004). Family studies reveal delayed language acquisition and social deficits in some relatives of index cases with autism spectrum disorder (Piren, Palmer, Jacobi, Childress, & Arndt, 1997). There are probably multiple subtypes with unique and specific problems with brain circuits or molecular changes, and they may be distributed differently in males and females (Chahrour et al., 2016). In Sam's case, there was no evidence of any neurological abnormality, nor was there any family history of autism spectrum disorder. However, his older sister did have a learning disability.

Researchers are using mice to model specifically how a genetic mutation could produce the wide ranging symptoms in people associated with autism spectrum disorder (Bolkan & Gordon, 2016). A particular deletion due to a mutation in the *Ptchd1* gene is found in one in a hundred people with autism spectrum disorder; 40 percent of people with the mutation also have autism spectrum disorder (Wells, Wimmer, Schmitt, Feng, & Halassa, 2016). In mice, the mutation impacts the functioning of the thalamus soon after birth, and results in changes to the actions of GABA, an inhibitory neurotransmitter, which as the mice develop, impacts the brain's ability to control neuronal activity across circuits that process information. This brain disruption is due to reduced neural firing due to changes in the permeability of cell membranes. The mutation resulted in inattention and impaired sleep in adult mice similar to some symptom of autism spectrum disorder, and researchers were able to improve some of these behavioral symptoms by treating the mice with a drug that restored cell membrane function. So, a single gene can disrupt a developmental process impairing one ability, such as inhibition of brain activity; in turn, this can produce multiple effects in many areas of brain function.

Genetic factors may not be the only contributor to autism spectrum disorder. It is possible that genes create a susceptibility to environmental factors, such as toxins (Lawler, Croen, Grether, & Van de Water, 2004). There is no definitive evidence at this time that any specific toxin or teratogen is related, but there is evidence implicating prenatal exposure to valproic acid, a drug used to treat seizures and bipolar disorder, and thalidomide, a drug that has been used in the past to treat morning sickness during pregnancy (Newschaffer et al., 2007). In addition, heavy metal neurotoxins in air pollution, pesticides in food, insecticides, Bisphenol A in plastics, and phthalates in cosmetics have been implicated (Carter & Blizard, 2016). Prenatal problems, such as maternal viral infections and vaginal bleeding during pregnancy, and birth complications, such as emergency or elective caesarean section, prolonged labor, and multiple births (twins or triplets), are more likely among those with autism spectrum disorder (Brimacombe, Ming, & Lamendola, 2007). Parents being older and premature delivery are also risk factors (Lyall et al., 2017).

There continues to be tremendous focus in the popular media on vaccines, specifically on thimerosal, a preservative used in vaccines, as implicated in autism spectrum disorder, following a research report published in 1998 that speculated about such a link. However, the evidence in that report was fictitious and falsified and the report was a fraud (Godlee, Smith, & Marcovitch, 2011). A flurry of research on vaccines followed the initial publication of the fraudulent report, and no link with autism spectrum disorder has ever been found (Parker, Schwartz, Todd,

& Pickering, 2004). Unfortunately, many parents continue to withhold vaccines for their children out of unfounded fear, and as a result, many children are now at risk for those sometimes fatal infectious diseases.

Treatment

Numerous medications have been tried with autism spectrum disorder, most commonly antipsychotics (e.g., haloperidol) and antidepressants (Palermo & Curatolo, 2004). These medications can help manage stereotyped motor behavior, self-injury, aggression, hyperactivity, and sleep problems. However, medication does not improve the core symptoms of the disorder (Sung, Fung, Cai, & Ooi, 2010).

The major psychological treatment is behavior therapy. As in Sam's case, it requires a great expenditure of time and effort. Furthermore, children with autism spectrum disorder have several problems that make teaching them particularly difficult. They have difficulty adjusting to changes in routine, such as substitute teachers. Their self-stimulatory behavior interferes with effective teaching, and finding reinforcers that motivate them can be challenging. Whereas children without the disorder are often motivated by praise, this is not the case for many children with autism spectrum disorder. Behavior therapists focus on reliably assessed, observable behaviors and manipulate the consequences these behaviors elicit from the environment. As in Sam's case, desirable behaviors (e.g., speech, playing with other children) are rewarded, and undesirable ones (e.g., hand flapping, screaming) are either ignored or punished. The desired behaviors are broken down into smaller elements that are learned first and then assembled into a whole. A good example of this procedure was seen in the procedures used to develop Sam's speech. Modeling is also often a part of operant behavior therapy programs.

Intensive behavioral intervention programs have significantly improved preschool children's cognitive abilities, self-care skills, language, and positive social behavior (Remington et al., 2007). Such treatment is expensive and time consuming, costing about $40,000 a year for each child (Shattuck & Grosse, 2007). However, the long-term dependence and loss of productive work in less intensively treated children may represent a greater cost to society than a treatment that enables some to achieve a normal level of functioning. Even with intensive early intervention, though, most will not recover or have normal functioning but will continue to have significant symptoms and impairment (Shea, 2004). A more cost-effective approach which involves parent training to teach parents to coach their toddlers in sustaining joint engagement and attention and to improve play skills is effective in improving the play of children with autism spectrum disorder (Kasari, Gulsrud, Paparella, Hellemann, & Berry, 2015). While this improves child outcomes, it does not reduce the stress of parents, perhaps because of the increased responsibility for taking on a therapist role with their children.

Families of children with autism spectrum disorder experience a great deal of stress. Extra financial burdens and the strain of the symptoms and intensive nature of treatment can be great. Although the majority of marriages of parents of a child with this disorder survive, there is a doubling of the risk of divorce (Hartley et al., 2010).

Discussion Questions

1. To intervene in Sam's tantrums and violent outbursts, the therapy involved squirting Tabasco sauce into his mouth when he started a tantrum by screaming. Do you think this form of intervention is ethical? What are the pros and cons of using such a treatment?
2. Had you heard before about the vaccine controversy related to autism spectrum disorder? Despite repeated investigations that have exonerated vaccines, many parents are still