CASE 1

Assessment of Individuals with Autism: Procedures and Pitfalls

Sally Logerquist

The diagnosis of an Autistic Disorder is complicated by many factors, such as variability in interpretation of autistic characteristics among psychologists, and a lack of awareness within the schools as well as the general public as to how autism manifests differently in one case to another. The variability in interpretation of autistic characteristics among psychologists is due to the qualitative nature of the behaviors and a lack of instruments with good psychometric properties to measure autism. The two instruments used in this case, the Autism Diagnostic Inventory-Revised (ADI-R) and the Autism Diagnostic Observation Schedule (ADOS) are considered the gold standard in the field of autism (Klin, Sparrow, Marans, Carter, & Volkmar, 2000). These instruments are being used widely in research studies on autism, but they are not widely used among clinicians due to their cost and the additional training requirements (Klin et al., 2000). The ADOS and ADI-R have standardized procedures for test administration. The ADOS is a series of situations that are developed to elicit behaviors associated with autism. During the administration the evaluator has the opportunity to probe a wide array of behaviors. The evaluator who is not trained in these instruments uses checklists, parent reports, and/or observation. These techniques do not include the probing for autism characteristics that occurs during the ADOS administration or standardized administration. Often, a psychologist is left with his or her own clinical judgment, hence the variability in interpretation.

Autism is not a widely understood diagnosis. Limited understanding of this disorder within the schools may impact how the report is written. This report is written to all of the possible consumers (e.g., schools, state agencies). It is much easier for school personnel to respond to findings of the report when the conclusions are clearly supported by the data. To differentiate between the autism characteristics of Erik and another individual with the same diagnosis, it is helpful to describe specific behaviors (e.g., echolalia) in addition to the category of behaviors (e.g., communication). In addition, parents want to know what specific behaviors resulted in a diagnosis of autism. To aid in their understanding, clinicians should identify the behaviors that the child exhibits that are associated with autism, as well as those that are not. This is also very important for school personnel as they need an accurate description of the child to ensure that the interventions match their needs.

The diagnostic category of Autistic Disorder is more appropriate for Erik than the diagnostic category of Asperger's Disorder. The criteria for Asperger's Disorder are similar to Autistic Disorder with regard to impairment in social interactions and restricted repetitive and stereotyped patterns of behavior, interests, and activities. The criteria for these disorders are different with regard to cognition and aspects of communication. Asperger's Disorder is not associated with either a communication or a cognitive delay, whereas an Autistic Disorder is associated with a communication delay and may be associated with a cognitive delay. Erik did not use oral language until the age of 3. Whereas he compensated effectively with sign language, historically and currently he presents with communication impairments (as measured by the ADI-R and ADOS). Based on a documented communication delay, Autistic Disorder is the appropriate diagnostic category.

MULTIDISCIPLINARY TEAM REPORT

Name:	Erik Templeton
Date of Birth:	10-26-2006
Age:	3 years, 11 months
Parents:	Lisa and Seth Templeton
Grade:	Shadow Rock Preschool
Evaluation Dates:	September 28 and 30, 2010
Evaluator:	Sally Logerquist, Ph.D.

REASON FOR REFERRAL

Erik, a 3-year, 11-month-old boy, was referred by his preschool teacher and his parents for a comprehensive evaluation to rule out an Autism Spectrum Disorder. Erik has been experiencing some difficulty transitioning from his parents' and grandparents' homes to the preschool classroom. His reluctance to go to school increases in the beginning of the school year and following school breaks. Erik is awkward in his social approach with peers; however, he has strong language skills and is comfortable with familiar adults. He is typically a happy, caring, cooperative child, but at times has intense tantrums and demonstrates oppositional behavior. Although these tantrums are infrequent, they are of concern to the family. Erik has a supportive family and extended family members who are eager to understand his behavior and provide the appropriate interventions.

BACKGROUND INFORMATION

Erik resides with his biological mother and father; his grandmothers provide his daycare. Mrs. Templeton reported that her pregnancy progressed without complications. During labor, however, because Erik did not drop in the birth canal and pushing decreased his heart rate, he was delivered by cesarean section. His weight and height were 8 pounds, 6 ounces and 20.5 inches, respectively. As an infant, Erik was content, was easy to feed and hold, and slept easily. He met his motor milestones at the usual times; he crawled at 10 months and walked at 12 months. Erik did not use oral language until he was 3 years old and the use of phrases soon followed. He did, however, understand oral language and use sign language effectively to communicate his wants and needs. Sign language was introduced by his mother when oral language did not emerge within the expected time frame. By the age of 18 months he had an American Sign Language (ASL) vocabulary of 175 words. When Erik began to speak, he reversed pronouns (e.g., using *I* for *you* and *you* for *I*), referred to himself in the third person, and demonstrated echolalia (repetition of what is said by other people as if echoing them). All of these language errors have decreased but have not been eliminated at this time. His only significant medical history was the development of fluid under the skin of his forehead at 8 weeks and croup with a high fever at 32 months. At his last annual checkup with his pediatrician, Dr. Andrew Moore, his vision and hearing were both normal.

EDUCATIONAL HISTORY AND SCHOOL BEHAVIOR

Erik currently attends Shadow Rock Preschool 3 to 4 times a week for 6.5 hours per day. His teacher, Ms. Jeanette Spaulding, reported that he will cry and protest when his parents or grandparents drop him off at school, especially at the beginning of each school year and after school breaks. He does not cry for long as Ms. Spaulding quickly redirects his attention to an activity. Ms. Spaulding reports that Erik "barks" and demonstrates self-stimulating behaviors. Erik demonstrates the self-stimulating motor movements of flapping and the self-stimulating verbal behaviors of echolalia.

Ms. Spaulding reported that Erik possesses language and reasoning skills "way beyond his years" and that he is often preoccupied by a special interest. His current interest is volcanoes. He draws volcanoes and talks about them at great length every day. He is able to provide information on volcanoes, such as the cause and effect of a volcanic eruption including details, such as the temperature of the lava.

ASSESSMENT FINDINGS

The Autism Diagnostic Inventory-Revised (ADI-R) was administered in an interview format with Erik's parents. This instrument relies primarily on descriptions of an individual during the early years. The strengths of this approach lie in its objectification of symptoms that are unique to the diagnosis of autism, and the developmental course an individual shows during the early years. The limitations

of this approach are that it is primarily interview based, and relies on parental reports. The ADI-R is structured so as to assess the presence or absence of the American Psychiatric Association's *Diagnostic and Statistical Manual's* (*DSM-IV*) definition of autism. Questions are grouped into three sections addressing: Language and Communication Functions, Social Development and Play, and Interests and Behaviors. Parental responses are coded in each area and cut-off scores are assigned to reliably differentiate the presence or absence of autism.

The Autism Diagnostic Observation Schedule (ADOS*)* was administered in direct assessment. The ADOS is a comprehensive, semi-structured instrument covering most developmental and behavioral aspects of autism. Information is obtained by presenting activities designed to illicit behaviors associated with autism. The scoring criteria are consistent with *DSM-IV* criteria for an Autism Disorder. The scoring system is as follows:

0 = behavior (associated with autism) is NOT present
1 = behavior is present but not clear, severe, or frequent
2 = behavior is present and meets criteria for autism

Mr. and Mrs. Templeton report that they have been concerned about Erik's behavior since he was 2 years old. The behaviors of concern include:

- Lining up toys
- Tantrums, biting and flapping his arms when frustrated
- Referring to himself in the third person
- Late acquisition of oral expressive language
- Echolalia that began at age 3, when he began to use oral language, which is still present
- Reluctance to enter a conversation or play situation with a same-age peer
- Not including others in his conversation or play

QUALITATIVE IMPAIRMENTS IN SOCIAL INTERACTIONS

The Templetons noticed impairments in social interactions at age 2 when Erik entered preschool. He was awkward in social situations with same age peers in contrast to his ease in conversing with adults. The Templetons report that he is still awkward in conversing with peers. When he does talk to peers, his interchanges are focused on his interests with little or no awareness of whether the listener is interested. While this is not uncharacteristic for a 3-year, 11-month old child, the lack of awareness of others is also evident in group interactions (not taking turns) and in play (parallel play).

During the direct administration of the ADOS, Erik used eye contact; however, he did not use eye contact to regulate social interactions (i.e., looking in the direction he wants the listener to look). He shared his enjoyment of the activities with his father by directing smiles toward him; he did not indicate shared enjoyment with either smiles or words with the evaluator. He did respond to his name the first time it was used by the evaluator. Erik seldom initiated conversation with the evaluator; when he did, the topics were related to his interests or to gain assistance.

Erik's ADI-R score of 6 did not meet the cutoff of 10 for autism. Erik's ADOS score of 10 exceeded the cutoff of 6 for autism. Based on the results of parent interview (ADI-R) and direct assessment (ADOS), Erik meets the DSM-IV criteria for an Autistic Disorder in the area of qualitative impairments in social interactions. Despite his impairment, he demonstrates many positive behaviors in this area that are not characteristic of autism, such as:

- He demonstrates appropriate speech fluctuation, rate, and pitch of speech and is capable of modulating the volume to be appropriate to the setting.
- He has a full range of facial expressions that are appropriate for a variety of situations.
- Erik demonstrates empathy and seems to care about other people and their needs.
- He is very thoughtful with regard to his family.
- He does initiate sharing, more with adults than peers.

Qualitative Impairments in Communication

Erik did not acquire oral expressive language until he was 3 years old. Prior to that time he understood the oral language of others (receptive language). He also compensated for his expressive language delay by using ASL. By the age of 18 months, he knew 175 ASL signs. Once he developed oral language at age 3, phrase speech soon followed. Language errors were observed as soon as he began speaking, such as reversed pronouns, reference to himself in the third person, and echolalia. All of these language errors have decreased but have not been eliminated at this time. Echolalia is only observed now when he is excited (e.g., a birthday party) or anxious (e.g., entering a new situation).

Currently, he has strong language skills; he uses sentences of five or more words including adverbs, adjectives, prepositions, and proper plurals. This was reported by parents and observed by the evaluator. Erik can maintain a conversation if the topic is of his choice. His communication style is one directional (in which he reports facts) rather than two directional (the back and forth of a reciprocal conversation). His verbal discourses continue without requesting input from the listener. His parents report that he recently began to bring others into his conversations by directing their attention, verbally or by pointing, to something of his interest (joint attention). At this time, the majority of Erik's interactions are for the purpose of directing others toward things that he wants or areas of his interest rather than socially sharing. The Templetons report that Erik will use the gestures, such as head nodding, head shaking, shrugging, and pointing for nonverbal communication.

During the ADOS administration, Erik did not show an interest in interacting with the evaluator except to share his knowledge about volcanoes. He showed no interest in entering into imaginative play. For example, he was offered toys (e.g., dolls, rocket, dog) to see if he would pretend they were animate and have them interact with each other. He did not. When asked to make up a story, he responded, "I don't know a story." The evaluator initiated imaginative play to see if he would join in but he did not. The only imaginative play that was observed during the ADOS was to load up a toy truck and dump it.

In the category of qualitative impairments in communication, Erik's ADI-R score of 10 exceeded the cut-off of 8 for autism. Erik's ADOS score of 7 exceeded the cut-off of 5 for autism. Based on the results of parent interview (ADI-R) and direct assessment (ADOS), Erik meets the *DSM-IV* criteria for an Autistic Disorder in the area of qualitative impairments in communication. Despite his impairment, he demonstrates many positive behaviors in this area that are not characteristic of autism, such as:

- Erik does not engage in use of inappropriate questions or make inappropriate statements (with a few exceptions that are consistent with his developmental level).
- He does not use made-up words or idiosyncratic language.
- Erik imitates the actions of others; for example, when his father sits down to watch TV, he postures himself in a similar manner.
- Erik demonstrates appropriate fluctuation in tone to match his emotions, such as louder and faster speech when he is excited.

Restricted, Repetitive, and Stereotyped Patterns of Behavior

Erik's parents and teacher reported that he is restricted in his play and conversations. His preoccupations have changed over time with his current special interest being volcanoes. This was observed during the ADOS administration. He did not want to talk about any of the topics presented by the evaluator, and he only wanted to talk about volcanoes. Volcanoes came up in other contexts; sometimes it was appropriate; sometimes it was not. For example, in one activity, he was asked to describe what he saw on a pictured map. He focused on areas with volcanoes, which was appropriate, but resisted redirection to any other area on the map. In another activity, the evaluator set up a pretend birthday party and invited Erik to participate. During this activity, he made the play dough into a volcano rather than a cake. The evaluator praised his work and then redirected him to the birthday activity but he informed the evaluator that he was not interested in the birthday party. He did not explore toys that were provided for free play; he used a truck, blocks, and puzzles but his play often included lining up blocks and puzzle pieces.

The Templetons report that in the past, Erik engaged in the repetitive motor movements of flapping his arms; however, these have been greatly reduced. He continues to have temper tantrums in highly anxious situations (e.g., going into a new classroom). These are infrequent (less than once a month), but intense in that they may last for hours. The tantrum behaviors include refusal, withdrawal, and yelling.

In the category of restricted, repetitive, and stereotyped patterns of behavior, Erik's ADI-R score of 3 matched the cutoff of 3 for autism. Erik scored a 1 on the ADOS but there is not a cutoff score in this area. Based on the results of parent interview (ADI-R) and direct assessment (ADOS), Erik meets the *DSM-IV* criteria for an Autistic Disorder in the area of restricted, repetitive, and stereotyped patterns of behavior. Despite his impairment he does not demonstrate some of the negative behaviors commonly associated with autism. For example, he is not aggressive to others or himself with the current exception of biting his nails and hitting his arm when he was very young. He does not engage in hyperventilation and has never had a seizure.

SUMMARY

Erik's scores on the ADI-R indicate that history and present behaviors meet or exceed the diagnostic criteria for Autism in 3 of 4 categories. Erik's scores on the ADOS indicate that his present behaviors meet or exceed the *DSM-IV* diagnostic criteria for Autistic Disorder in three of three categories:

1. Qualitative impairments in social interactions
2. Qualitative impairments in communication
3. Restricted, repetitive, and stereotyped patterns of behavior

Erik qualifies for consideration as a child with an Autistic Disorder. In the school setting, the appropriate category of eligibility would be autism. Autism, as defined by IDEA-2004, is a developmental disability that:

- Significantly affects verbal and nonverbal communication and social interaction
- Is generally evident before the age of 3
- Affects educational performance

Evidence is provided in this report to address items 1 and 2. The multidisciplinary team, which includes Erik's parents, will need to identify the effect on educational performance and make the final determination of eligibility.

RECOMMENDATIONS

Educational Programming

1. Erik's parents are encouraged to share the current evaluation with the school psychologist at the school he will attend for kindergarten. Initially, it is recommended that a district individual, knowledgeable in the current research and practice in autism, be consulted to assist the team in developing appropriate accommodations. The nature and degree of the appropriate accommodations will depend on: Erik's age, the task demands of the classroom, and the ability of the general education teacher to provide appropriate accommodations (taking into consideration the composition of the class, teacher's knowledge in this area, etc.).
2. Children with neurodevelopmental disorders (such as autism) learn best when they are provided with clear and predictable learning environments. Attention should be directed to the physical environment (reduction of distractions, sequencing of activities, and duration of activities) so as to not overwhelm or overstimulate Erik.
3. The National Research Council has endorsed the inclusion of children with neurodevelopmental disorders with age-mates in all areas of educational and non-educational instruction, to the extent that it promotes the ongoing development of educational goals. To this end, Erik's school team is encouraged to explore the potential for him to continue to be in the mainstream environment, with special education support, as needed. It will be important for Erik's teachers to receive instruction and education in effective strategies for teaching children with autism.

Qualitative Impairment in Social Interactions

1. Erik appears bright and verbally skilled beyond his years, which may result in his using language that is more mature than that of his peers. He is also interested in concepts and material that may be less interesting to his peers. While his vocabulary and understanding of special interest (volcanoes, for example) are characteristics that appeal to adults, these behaviors will not help him relate to other children. Assist him in being aware of the tone and content of his communication. Currently he is saying, "I am sorry, did you think I was talking to you?" While this may sound precocious now (at almost 4 years old), as he gets older it may be considered disrespectful. Start now to shape the communication that will serve him well in the future.
2. Erik will need support to facilitate social interactions. Adults in his environment may need to determine first if he understands whether his behavior is appropriate or inappropriate in social situations. As he does not seem to read the facial messages and body language of his peers, he may not gain the feedback in the natural environment that tends to shape our social behavior. In the absence of this feedback, it may be beneficial for adults to teach appropriate behavior explicitly in the form of a social story. See http://www.thegraycenter.org/ for information on the use of social stories to promote social skill development.
3. In the future, Erik would benefit from social skills education, training, and participation in a structured group setting. A social skills group will serve as a safe environment to learn and practice core skills, with supportive feedback from others. Such a setting should also bolster his confidence and increase his willingness to take risks in initiating social contact.

Qualitative Impairments in Communication

Erik does not present with expressive or receptive language impairment at this time. However, he does seem to be impaired in nonverbal communication, specifically sending and receiving nonverbal messages. Parents and teachers are encouraged to promote eye contact as a source of nonverbal information. Suggest to Erik that the information that is provided by the eyes and the mouth are clues to uncovering information about other people. The book *Teaching Your Child the Language of Social Success* (Nowicki, 1996) is a valuable tool for teaching these skills. Parents and teachers are encouraged to point out to Erik (privately) when he has not correctly detected a social cue. For example, if another child's body language suggests irritation, pull Erik aside and show him the body posture that indicates "I'm irritated."

Restricted, Repetitive, and Stereotyped Patterns of Behavior

1. At times Erik has difficulty transitioning from one activity to another. Adults are encouraged to provide consistent prompts to cue him to move in "X" amount of time. It will be beneficial if the cues for prompting are consistent at home and school. For example, 5 minutes prior to the end of the activity the adult would provide a prompt. This may be in the form of a verbal prompt ("5 minutes to finish") and/or visual prompt (egg timer). At first it may be necessary to provide both verbal and visual prompts. When the time is up, the adult must insist that the activity end. If this results in avoidance, noncompliance, or a meltdown, the adult will need to stay calm and consistent. Continue to provide him with the visual and/or verbal prompt to calm down.
2. Anytime that Erik has a meltdown, it will be necessary for an adult to be available to stay with him until the incidence is resolved. This may take quite awhile at first; however, it is very important that this process be completed prior to moving on to the next activity. While he is angry, adults are encouraged to provide only the prompt to calm down. If he has problems processing words when he is angry, then provide a visual cue of a calm face. An alternative is to take a picture of him when he is calm and use this to prompt him to resume that state. There should be no discussion of any topic while he is upset. Make sure he is calm before attempting to discuss the incidence. Once he is calm, the adult can assist him in problem solving by using the following 3-step process:
   a. Stop, take a deep breath, and count to 3
   b. Think about your choices and the consequences of each choice
   c. Make a decision and act on it
3. Arrange for Erik to be allowed to choose "time out" when he feels overwhelmed or overstimulated, and arrange for an area to which he can retreat for a short period of time to regroup. Actively teach progressive muscle relaxation, deep breathing, and positive self-statements as positive stress management strategies. Have him practice these skills when he is calm so they may be used in stressful situations.

Thank you for the opportunity to work with your child.

PSYCHOMETRIC SUMMARY

Autism Diagnostic Inventory-Revised

Scale	Diagnostic Cutoff	Erik's Score
Qualitative Impairment in Reciprocal Social Interaction	10	6
Communication	8	10
Repetitive Behaviors and Stereotyped Patterns	3	3
Abnormality of Development Evident At or Before 36 Months (score of 1 = delay was reported, score of 0 = no delay)	1	1

Autism Diagnostic Observation Schedule

Scale	Diagnostic Cutoff	Erik's Score
Reciprocal Social Interaction	6	10
Communication	5	7
Communication + Social Interaction	12	17
Stereotyped Behaviors and Restricted Interests	No cutoff score	1

The scoring system for the Autism Diagnostic Observation Schedule and Autism Diagnostic Interview-Revised is as follows:

0 = behavior (associated with autism) is NOT present

1 = behavior is present but not clear, severe, or frequent

2 = behavior is present and meets criteria for autism

A score that meets or exceeds the diagnostic cutoff indicates that the individual has met the *DSM-IV* criteria for Autistic Disorder in that area.

REFERENCES

Duke, M. P., Nowicki, S. Jr., & Martin, E. A. (1996). *Teaching your child the language of social success.* Atlanta, GA: Peachtree Publishers.

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