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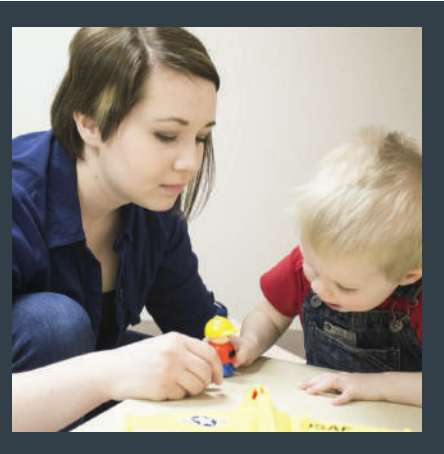
Speaking with Meaning

Contributed by:

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One of the hallmark features of human language is our ability to understand and express novel statements. As an example, consider the following statement, “Sue wrestles with spelling, but is a wizard when it comes to math.” You may never have heard this exact statement before, but verbally skilled individuals will quickly understand that Sue has difficulty determining the letters in words, however is successful at arithmetic. What more, you may have concluded that Sue’s ability to understand math is distinctly better than her skill at spelling and that she learns



math effortlessly. You may recognize that the example statement makes use of metaphors specifically that Sue wrestles (a strenuous physical exercise in which you attempt to force a resisting opponent to the ground) in one area, but is a wizard (an individual noted for use of magic) in another. This statement is complex as it is understood by identifying the primary attributes of wrestling and wizards, comparing their distinct differences, and then applying those qualities to Sue’s academic skills.

While the ability to understand complex language, such as metaphors, may come easily to some, individuals with autism spectrum disorder (ASD) often struggle to gain mastery with figurative and novel language. One reason why these types of language may be more difficult for those with ASD, is because it involves responding to multiple words at the same time and in ways different from how they were originally taught.

To understand how a complex skill like responding to novel metaphors may be learned, we should first examine how basic language skills are acquired. In its most elementary form, language is learned when specific responses are taught in the presence of specific questions or stimuli. For instance, a child may be taught to select a round object (ball) from an array of toys when told “Ball” by providing praise when the correct item is selected. Alternatively, the same child might be taught to say “Ball” when shown a round object by providing praise when the correct word is stated. These type of responses are said to be “trained” because each specific answer was taught with its specific question. As the child is introduced to many examples of labeling items and selecting the same item when told its name, the child is likely to begin correctly labeling items when only taught to select them or conversely to select items when only having been taught to label those items. Since only one of the responses was “trained”, the untrained response is said to be “derived.”

Derived responding occurs across a wide variety of language skills, but is particularly important when relating stimuli together. Relating is said to occur when a response to one word or stimulus is dependent upon the qualities of another word or stimulus. For instance, if you were presented with a baseball and a golf ball and asked “which one is bigger,” you would select the baseball because it is bigger in relation to the golf ball. Alternatively, if presented with a soccer ball and baseball, the correct response would now be to select the soccer ball. In both cases, responding to “biggest” requires one to attend to both items. “Derived relating” occurs when the individual responds to both stimuli in an untaught way. For example, if you were told that “Victoria is taller than Miranda,” a derived relational response would be that “Miranda is shorter than Victoria.”

cont.



Derived relational responding is taught in the same manner as our previous example of labelling and selecting a ball. Let us use a “comparative” relation like “greater” or “lesser” to illustrate this point. First a child is shown two pictures with different number of items on them, e.g. 2 blocks and 5 blocks. The child is then asked, “Which is greater” and provided praise for selecting the bigger of the two images. Next, the child is shown the same pictures and is asked, “Which is less.” This process is repeated until the child can correctly identify the greater and lesser of the two pictures. Next, the child is presented with new cards that also include images that vary in the number of items or size, e.g. a picture with a whole pizza and a half a pizza. The same questions are repeated, “Which is greater,” “Which is less.” After many examples of the “Greater” and “Lesser” relations, the child will likely begin to respond correctly to either question with any two cards that vary in size or number of images.



The BEAR Center at Northern Michigan University is a free-to-the-community Applied Behavior Analysis facility that provides a center based early language-learning program for children with ASD and related deficits, a focused behavior consultation service, and a training and service program for local agencies.

Photo: Lt. Gov Brian Calley At The BEAR Center's Grand Opening

The next step in shaping complex language is to turn the response into an “arbitrary” response. Arbitrariness refers to the non-physical qualities of the stimuli being related. In the above “greater” and “lesser” example, the items being compared had distinct physical characteristics. For example, a golf ball is physically smaller than a baseball. Training arbitrary responses involves asking the child to identify previously learned relations (such as “greater” and “lesser”) but with stimuli that are different in verbal quality. Coins are a good example of how the relational cues learned with physical properties can be used to establish non-physical properties. While physically smaller, a dime is “greater” than a nickel, and the physically larger nickel is “less than” a dime. When presented with both coins and the instruction to select the “greater”, the child from our previous example would likely select the nickel, given its size. Providing correction to select the dime instead of the nickel, establishes that “greater” in this case is coordinated with the dime’s value. Because the child has previously learned to respond to “greater” and “lesser” as related to each other, the child is then likely to identify nickels as “lesser.”

The significance of this form of “arbitrarily applicable derived relational responding” is that the child has learned to respond to items in the world, not by physical or concrete features, but rather by the verbal contexts under which those items were encountered. Additionally, the establishment of relational cues, such as “greater than” or “less than”, allow the child to interact with stimuli in flexible and meaningful ways. Derived relations can also be applied to a wide range of relations including those required to establish opposites, hierarchies, temporal skills, cause and effect predictions, and perspective taking. For example, working on derived relations of “I” and “You” allow a child to identify what another person is seeing and to predict their emotions based on their own experiences.

Complex verbal relations are an increasingly significant part of Applied Behavior Analytic approaches to learning. Published assessments and curriculums are available that help children develop relational language beyond the early language learning stages. For example, the Promoting the Emergence of Advanced Knowledge (PEAK) Relational Training System and Training or the Assessment of Relational Precursors and Abilities (TARPA) help clinicians and caretakers to systematically teach elementary language responses, non-arbitrary derived relations, and finally complex arbitrary language.

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Back it Up: What is Behavior?

Contributed by Carrissa Rondeau, BCBA, MSW, Behavior Consultant AAoM

Behaviors are observable responses, movements, and actions that can be measured by the motion of some part of the body. Behaviors of an individual are responses to events that occur in the environment. Behavior occurs in real time and changes over time.

There are four main functions of behavior. The term “function” is used as a way to ask “why”. Why does the behavior occur? The reasons include escape/avoidance, seeking social attention, access to items or activities, and sensory stimulation.



Escape/Avoidance: This can include a wide range of behaviors. People engage in behaviors (good or bad) to escape or avoid situations that they would term undesirable.

- **Examples:** A child may “act out” in class in order to avoid participating in the learning activity. An adult may engage in an action (press brake pedal) to avoid being pulled over by the police.

Social: This includes attention seeking behaviors that are actions an individual displays to bring people in or around them in their environment to focus on them.

- **Example:** An adult may tell a joke about one of their peers to get the group to laugh.

Access to tangibles: Tangible items are the ‘things we want’ - the materials and activities that we want. Access to these items can be accomplished by both adaptive and maladaptive behaviors. Individuals will emit certain actions to get what they are desiring at that moment in time. Most often this behavior is repeated if it “worked” the first time or times.

- **Adaptive Example:** A child asks to go play outside; child is able to play outside; child will continue to request going outside.
- **Maladaptive Example:** A child will scream and shout to gain access to a preferred toy/activity; the child will continue screaming and shouting if not rewarded immediately; child receives access to the preferred toy/activity.

Sensory stimulation are behaviors engaged in by the individual to get desired feedback from one of the five senses (sight, touch, taste, smell, and sound). Sensory input or feelings can also derive from movement of their bodies in space, providing vestibular or proprioceptive feedback. These are behaviors an individual engages in which lead to an internal sensation that is pleasing to them, this can be the addition of stimulation or the removal of an unpleasant sensation.

- **Pleasing Example:** A toddler will shout in the stairwell to hear the echo.
- **Removal Example:** An individual will put on sound dampening earphones to protect their ears from the loud noises.

While there are many “types” of behavior, most are defined as either adaptive or maladaptive behavior.

- **Adaptive behavior:** Can be understood as a desirable or pleasant action. For example, a person waving and saying, “Hello,” when seeing someone they know or recognize.
- **Maladaptive behavior:** Can be any action that is undesirable and often occurs at a time or place when it is socially inappropriate. For example, an individual picking their nose while in a group of people.

A clear understanding of behavior basics can help families on the way to using the building blocks of behavior to increase independence and integration into the community.





JULY AT A GLANCE

SUN	MON	TUE	WED	THR	FRI	SAT
Please visit our community calendar for full event listings at www.navigators.autismallianceofmichigan.org/events .						1 Sensory Sensitive Movies at Rave Cinemas, Flint West 14 (Flint)
2 St. Francis Camp on the Lake-Summer Camp (Jerome)	3 Pine Ridge Bible Camp- Freddy's Friends (Cedar Springs)	4	5 Social Security Disability Application Assistance (Grand Rapids)	6 Camp Sunshine at Camp Henry (Newaygo)	7 Open Studio at The Art Experience (Pontiac)	8 Dreams and Wings – Adaptive Recreation (Waterford)
9	10 Camp Cardinal Kidz- Elementary School Session (University Center)	11 Behavior Technician Learning Series (Detroit)	12 Adaptive Recreation: Independence Oaks (Clarkston)	13 Handwriting Camp (Rochester) Oakland County Fair (Davidsburg)	14	15 The ABCs of ABA (Southfield) ACEing Autism (Ypsilanti)
16 The Fowler Center Summer Camp (Mayville)	17 DWMHA Interdisciplinary Behavioral Health Conference Kaleidoscope Art Camp (G. Rapids)	18 Monthly Support Group & Newly Diagnosed Meetings (Burton)	19 Celebrating the Spectrum Festival (East Lansing)	20 Getting My Own Address: Provider Presentation (Detroit)	21 Spartans Stores YMCA Family Hope Program (Wyoming)	22 Set Sail for Autism (Port Huron)
23 Rejoicing Spirits -no-shush worship service (Birmingham)	24 Emerging Adults Summer Program (Royal Oak)	25 Children's Social Skills Groups (Plymouth)	26 Effectively Supervising Behavior Technicians (Taylor)	27 Zippity Zoo Da Day (Saginaw)	28	29 FALCONERS Event (Lansing)
30 AAoM's 3rd Annual Autism Hero Walk -Detroit Zoo	31 OUCARES Summer Day Camp (Rochester)					



1 Mile Walk. 3,000 People. 1 Important Cause.

July 30th at the Detroit Zoo #AutismHeroWalk Register today at www.aomwalk.com



The mission of Autism Alliance of Michigan is to lead collaborative efforts across the state that will improve the quality of life for individuals with autism through education, access to comprehensive services, community awareness, inclusion efforts and coordinated advocacy.

