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Echolalia and Autism

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Note: Most of this information is based upon the work and research of Barry M. Prizant. To see what Barry M. Prizant is up to lately, go to: www.barryprizant.com.

What is echolalia?

Echolalia is the repetition or echoing of verbal utterances made by another person. According to Prizant (1983) up to 75% of verbal persons with autism exhibit echolalia in some form. There are two types of echolalia: immediate echolalia and delayed echolalia. Immediate echolalia was once defined as "the meaningless repetition of a word or word group just spoken by another person" (Fay & Schuler, 1980). However, Prizant & Duchan (1981) and others have begun to see that echolalia may serve many functions for the person with autism (therefore, it is not "meaningless"). The researchers determined that immediate echolalia often was used with clear evidence of purposeful communication. Table 1 (below) lists seven different functions of immediate echolalia, identified by Prizant and Duchan (1981). Immediate echolalia appears to tap into the person's short-term memory for auditory input. For our purposes, immediate echolalia is defined as the repetition of a word or phrase just spoken by another person. Persons with autism who repeat what you just said (including the questions you ask) come to mind when we think of immediate echolalia. The child who responds to, "Do you want a cookie?" with "Do you want a cookie?" may or may not want a cookie. This is the maddening, confusing world of immediate echolalia for the parent or teacher.

Table 1. Functional categories of immediate echolalia (Prizant & Duchan, 1981).

<i>Category</i>	<i>Description</i>
<u>A. Interactive</u>	
1. Turn taking	1. Utterances used as turn fillers in an alternating verbal exchange.
2. Declarative	2. Utterances labeling objects, actions, or location accompanied by demonstrative gestures).
3. Yes answer	3. Utterances used to indicate affirmation of a prior utterance.
4. Request	4. Utterances used to request objects or others' actions. Usually involves mitigated echolalia.
<u>B. Noninteractive</u>	
1. Nonfocused	1. Utterances produced with no apparent intent and often in states of high arousal (e.g., fear, pain).
2. Rehearsal	2. Utterances used as a processing aid, followed by utterance or action indicating comprehension of echoed utterance.
3. Self-regulatory	3. Utterances, which serve to regulate one's own actions. Produced in synchrony with motor activity.

As Table 1 shows, immediate echolalia may be used with no intent or purpose or may have a very specific purpose for the individual. Immediate echolalia may also be used to initiate or maintain interaction or may be used in a noninteractive manner. Knowing the person very well would appear to be the key to understanding their specific use of immediate echolalia.



Delayed echolalia has been defined as the "echoing of a phrase after some delay or lapse of time" (Simon, 1975). Persons with autism who repeat TV commercials, favorite movie scripts, or parental reprimands come to mind when we think of delayed echolalia. You may recall Dustin Hoffman's portrayal of a man with autism who would repeat the Abbott and Costello comedy routine: "Who's on First?" over and over. He did not understand the humor of the routine and appeared to have no purpose in repeating it. Delayed echolalia appears to tap into long-term auditory memory, and for this reason, may be a different phenomenon from immediate echolalia. Because it can involve the recitation of entire scripts, delayed echolalia, is often thought to denote evidence of near-genius intellect. This may or may not be the case. Wolf and Chess (1965) found that delayed echolalia can serve a communicative function for the person with autism but it is not always indicative of high intelligence. They described two categories of delayed echolalia: noncommunicative repetition and communicative repetition. Prizant (1983) listed 14 possible functions of delayed echolalia (see Table 2).

Table 2. Functional categories of delayed echolalia (Prizant, 1983).

Category	Description
<u>A. Interactive</u>	
1. Turn taking	1. Utterances used as turn fillers in alternating verbal exchange.
2. Verbal completion	2. Utterances, which complete familiar verbal routines initiated by others.
3. Providing information	3. Utterances offering new information not apparent from the situational context (may be initiated or respondent).
4. Labeling (interactive)	4. Utterances labeling objects or actions in the environment.
5. Protest	5. Utterances protesting actions of others. May be used to prohibit others' actions.
6. Request	6. Utterances used to request objects.
7. Calling	7. Utterances used to call attention to oneself or to establish/maintain interaction.
8. Affirmation	8. Utterances used to indicate affirmation of previous utterance.
9. Directive	9. Utterances (often imperatives) used to direct others' actions.
<u>B. Noninteractive</u>	
1. Nonfocused	1. Utterances with no apparent communicative intent or relevance to the situational context. May be self-stimulatory.
2. Situation association	2. Utterances with no apparent communicative intent, which appear, triggered by an object, person, situation, or activity.
3. Self-directive	3. Utterances, which serve to regulate one's own actions. Produced in synchrony with motor activity.
4. Rehearsal	4. Utterances produced with low volume followed by a louder interactive production. Appears to practice for subsequent production.
5. Label (noninteractive)	5. Utterance labeling objects or actions in the environment with no apparent communicative intent. May be a form of practice for learning language.

As Table 2 shows, delayed echolalia may be interactive or noninteractive and may be used with no intent or purpose or may have a very specific purpose for the individual. There appears to be more potential functions for delayed echolalia than were found for immediate echolalia. A key to understanding the specific use of delayed echolalia in any individual is a keen awareness of the individual's daily behavior and familiarity with their verbalizations.

The common stereotype of a person with autism is that he or she is "in a world of their own." Echolalia is one of those easily identified symptoms which is so strangely different from what is termed "normal" that it seems to support the stereotype. However, when one looks at the communicative nature of their echolalia, the stereotype begins to lose credence. Persons with autism do interact and do communicate, however, they do so in different ways. One of my favorite sayings about autism is "persons with autism are more normal than abnormal." Even echolalia is a normal way to learn language. Most children use echolalia to learn language. The majority of children babble in a rhythmic way, which is actually mimicking the cadence of our language. Later, they copy sounds, words, and eventually phrases and sentences

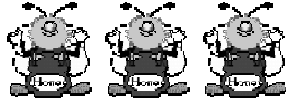


that they hear adults use in specific, repetitive contexts. This is known as the "gestalt" style of language acquisition. Gestalt means whole, therefore, learning language in gestalt form would be learning it in chunks rather than the tiny component sounds and specific meaning of each individual sound or even word. For example, "Mommy" comes to mean "Mommy" because of the whole of the experience, that is, the smell of Mommy, the house where Mommy lives, the shape of Mommy, the sound of Mommy, etc. Most children begin their language acquisition by using this gestalt form but quickly change over to an analytic form. Children begin to analyze the way language is used in other contexts and come to understand that "Mommy" is a word that can represent other things besides the whole of their experience with their specific "Mommy." Lovaas (1981) says that echolalia peaks at around age 30 months in normal children, and then decreases. Echolalia was once thought of as just another inappropriate behavior to eliminate in a person with autism, however, researchers currently see it as a developmental phenomenon that occurs within the child's normal cognitive and linguistic maturation.

The acquisition of language is not a clear-cut changeover from gestalt to analytic learning or from echolalia to spontaneous language but rather is a continuum, which reflects not just the choice of words but the evolution of the way the person thinks and looks at the world. However, the point at which the "switch is flipped" can be quite dramatic. I recall the day my son seemed to "flip his switch" from gestalt learning or language acquisition to analytic. He had been taught his body parts to include his armpits. One day he cut his inner arm. When I asked him where his cut was located he said it was on his "elbow pit." Which I easily deduced was the crease between his upper and lower arm, opposite his elbow. He had moved from the gestalt or echolalic reference for words to the creative use of new word combinations to explain his experience. In order for my son to accomplish this feat, he had to break down the gestalt word, armpit, into the individual meanings of the words so that armpit came to mean the indented place (pit) under the arm. Therefore, the indented place opposite the elbow must be an "elbow pit."

Prizant and other researchers see language as occurring in stages in persons with autism, however, these stages are not real delineations of time or accomplishment, rather they merely help one to see a progression from echolalic learning and language use to the use of spontaneous language. The researchers note (and personal observation affirms) that persons with autism can get "stuck" at any point in the continuum and language may not progress beyond echolalia (if even that develops). One can see that as the number of functions for echolalia declines, spontaneous language serves more and more functions for the person. However, during "Stage 3" an interesting phenomenon, indicated by the arrow on the graph, occurs when the child appears to regress because of a transition from (correct) gestalt language to immature analytic language. At this point, it is tempting for parents and teachers to correct the person with autism and have them "say it the right way." But for persons with communication disorders, this may merely be reinforcing gestalt forms rather than the "incorrect" analytic forms. The preferred method of reinforcement is to accept what the child says, but then to repeat it back to them using a more complete, adult form, and then follow this with additional information. For example, when the person with autism says, "Want milk," the parent or teacher should say, "You want a glass of milk? Okay, (getting milk) the milk is cold." This reinforces their creative use of language while also modeling for them the correct usage (Finnerty, 1995).

By the way, gestalt language acquisition does not just develop "out of the blue" in persons with autism. It is not just "lazy language." Gestalt language acquisition comes from gestalt thinking or gestalt processing. Perhaps the most famous person with autism (besides Rainman), Temple Grandin (1996), describes her thought process as "thinking in pictures." For her to recall or learn a concept like "power," she would have to visualize a "power line." Persons with autism think and learn differently. That is the reason things like echolalia develop in the first place. It is a symptom of the way the brain of a person with autism operates. Rather than look at just the deficiencies of persons with autism, Prior (1979) categorized the frequently cited abilities of persons with autism as "nonanalytic and nonabstract." The abilities include: excellent rote memory for both visual and auditory information and proficiency in tasks demanding visual-spatial judgment and visual-spatial pattern recognition. The special abilities that some persons with autism possess (known as savant skills) are almost always right-hemisphere abilities (Rimland, 1978). Prizant (1983) noted that numerous researchers have found that the patterns of ability and disability in autism have a right-hemisphere processing preference.



The right-hemisphere of the brain is thought to process information "wholistically" rather than "analytically".

Why do children echo?

Lovaas (1981) says that echolalia most likely is not something that we have inadvertently reinforced in the child with autism. He believes that more than likely echolalia is something that is intrinsically rewarding to the child. Lovaas believes that the reinforcer is actually the child being able to match what others say. Many children with autism become experts not just at echoing the content of what is said by others (the words) but also the voice, inflexion, and manner in which the words were originally spoken. The value of echolalia for the person may be that the echoed words and contextual cues become stored information for the person to refer to later as an internal rehearsal of the event.

As we have stated earlier, echolalia appears to be a "normal" step in the child with autism's cognitive and language maturation. To further examine the why of echolalia, review Tables 1 and 2, which detail the many possible functions echolalia may serve for the person with autism. In short, people use echolalia because it works for them. The answer then, may be teaching the person another and more efficient way to fulfill the function that is served by the echolalia.

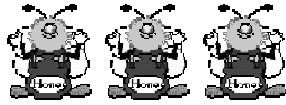
What can be done?

The presence of echolalia has actually been identified as a positive sign in persons with autism. Lovaas (1977) found that the presence of echolalia is an important prognostic indicator for future language growth. It appears that echolalia provides the "raw material" for further language growth. Howlin (1981), in fact, discovered that children with autism who were echolalic developed good phrase speech later in life whether or not they received intensive language training. If you think of echolalia as one of the phases of normal language development, it would appear that continued echolalia indicates that the person with autism is "stuck" at that level of development for a time but then seems to overcome it and develop more normal speech patterns. Lovaas (1981) believes that children who were once mute and later develop good speech, inevitably have passed through an echolalic stage in their speech development.

Far from being a useless "habit," echolalia has actually been used to teach receptive naming of objects (Charlop, 1983) and Chinese characters (Leung & Wu, 1997) to persons with autism. These studies further support the finding that echolalia serves a purpose for the person with autism.

Regardless of the utility of echolalia for the person with autism, the habit can interfere with social interaction and learning. Therefore, most researchers focus on helping the person move to a more creative form of language. Schreibman & Carr (1978) noted that the person with autism was more likely to use echolalia when he or she had not learned an appropriate response to the question or command. This seems rather obvious and their choice of treatment for echolalia was almost ashamedly obvious: they taught persons with autism to say, "I don't know" to questions they previously echoed and did not know the answer to. Even if "I don't know" became an echoed phrase, it is the most frequent response you will get from any child when you ask them a question they do not know the answer to. An additional benefit of this approach is that the "I don't know" response tells the person asking the question that he or she needs to teach the appropriate answer to the person. Just great common sense!

Schreibman and Carr (1978) taught the children to say "I don't know" in this fashion: 10 "what", 10 "how", and 10 "who" questions that the child did not know the answers to were prepared ahead of time (e.g., "What are we doing?" "How is your tummy?" "Who are my friends?"). One of them was selected and the child was asked the question and the "I don't know" answer was immediately prompted (e.g., "How do trucks run?-I don't know."). If the child echoed "I don't know" he or she was immediately reinforced. Eventually the "I don't know" prompt was faded (gradually removed) and the child was reinforced only for answering "I don't know" when not prompted. Once the child learned to say "I don't know" to one question, he or she was asked another of the prepared questions. If "I don't know" did not generalize to this new question, it was taught in the same manner as before. The researchers found that training a child to respond to an unknown question with "I don't know" in a few instances, led to the child being able to use this new phrase appropriately



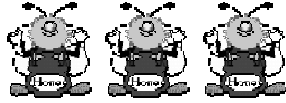
when asked other questions they did not know the answer to (generalization). At the same time, the researchers found that the child continued to appropriately answer questions they did know the answer to (e.g., "What is your name?"). Ivar Lovaas (1981) recommends this procedure in the Me Book and has a good five-step procedure for overcoming echolalia using Schreibman & Carr's (1978) "I don't know" method.

Another approach to dealing with echolalia, that goes along with the finding that echolalia is more likely to occur when the person is asked questions or given commands they do not know the correct response to, is to teach the correct response. This can easily be done by prompting the person with the correct response immediately after asking the question (e.g., "What is a rose?-flower.") and then reinforcing the echo and eventually fading the prompt. However, this is not a practical way to deal with echolalia for two reasons: it reinforces echolalia for a time and you would literally have to teach the person answers to every question that could be asked of them. Nevertheless, teaching the child with autism an appropriate response to commonly asked questions (e.g., "What is your name?") is a very good strategy to deal with some echolalic responses.

McMorrow & Foxx (1986) used what I believe to be the preferred method of overcoming echolalia. It uses the best of all the previous methods but adds the teaching of an important skill for persons with autism: the pause. The method is known as the Cues-Pause-Point method. I will attempt to simplify the method for you so that you can implement it at home or school:

The Cues-Pause-Point Method for Overcoming Echolalia (based on McMorrow & Foxx, 1986)

1. Select 10 questions from each of three content areas: a. Identification - (e.g., "What is your name? Where do you live?"); b. Interaction - (e.g., "How are you? What kind of music do you like?"); c. Factual - (e.g., "What state do you live in? What baseball team plays in Atlanta?"). Make sure these are questions that may be commonly asked but you are sure the person does not know the answer to. You should have 30 questions.
2. Baseline. Ask each of the questions, record the answers, and score the person's answers using the following categories: echolalia (when one or more of the words in the question were repeated even if other verbalizations follow); incorrect (when the response contains an irrelevant word even if the correct response was also given); or correct (when the answer is appropriate to the question or matches the trained response).
3. Training - Step 1: Teach the person to verbally label word cards or picture cards that will be used to prompt the correct answer to the questions. For example, for the question "What is your name?", prepare a card with the written name of the person. For the question "What baseball team plays in Atlanta?", prepare a card with the word "Braves" written on it or a picture of the "Braves" logo. Accomplish the training by showing the card, asking the person "What does this say?" while pointing or tapping the card, prompting a response, providing verbal feedback (either "yes!" or "try again"), saying the correct word if the person does not say it and prompting the person to repeat it, and giving verbal praise and a reinforcer (e.g., sip of soda, piece of candy, etc.) for each correct response. Continue training each set of 10 cards until the person correctly identifies each card or picture when the trainer simply points to them, for three consecutive trials.
4. Training - Step 2: Make sure you are in a quiet place with no distractions. Sit across the table from the person. Have the ten cards that correspond to the ten questions that you will ask (placed in the order you will ask the questions) on the table in front of you. Hold up your right index finger at eye level midway between you and the person to indicate that you want silence (this is the "pause" prompt). Say, "I am going to ask you some questions and I want you to answer them as best you can." If the person says anything or tries to talk during the instructions, while the question is asked, or for one second following the question, say, "Shh!" and hold your finger out more prominently. Ask the first question and move your right index finger from the "pause" prompt position to point to the correct response card (which will be the answer to the question asked) so that your finger touches it about two seconds after asking the question. If the person does not immediately say the correct word, prompt by pointing or saying, "What does this say?", as necessary. Cover the card with your right hand while acknowledging the person's correct response with a smile or head nod. Raise your left index finger to eye level (the "pause" prompt position), ask the same question again, and move the left index finger to point to the



back of the right hand (still covering the card). Prompt the correct answer as before even though the card will remain covered. Reinforce each correct answer with verbal praise and a reinforcer (e.g., sip of soda, piece of candy, etc.). Continue in this manner so that each of the ten questions in this content area are asked and at later sessions cover the ten questions from each of the other two content areas. Continue training on the 30 questions until the person is correctly answering each question with only the point prompt for three consecutive training sessions.

5. Training - Step 3: Using no cards or prompts, ask each of the 10 questions in three different training sessions. Use the "pause" prompt while the question is being asked and then move your hand back to the table and wait for the person's response. Provide feedback and reinforcement as above.

6. Training - Step 4: Fade the feedback and reinforcements by reducing the number of words you use to praise the person and rewarding every other correct response. Eventually eliminate all feedback and reinforcements. Once the person is answering your questions in a consistently correct and normal manner, have other persons ask the same questions in random order to assure that the person has generalized his learning.

7. Maintenance: Observe the person's response to asking other questions (not trained) and use the "pause" prompt if needed. Ignore echoed responses, prompt the correct answer, and have him try again. McMorro & Foxx (1986) found that echolalic responses were dramatically reduced after their training program was used. Ideally, the person has been taught that "I don't know" is an acceptable response and a wrong response will get more results than an echoed response.

The Alternated Modeling Method for Overcoming Echolalia (based on McMorro & Foxx, 1986)

Modeling would appear to be an ideal training method to use with persons who are prone to echolalia. McMorro & Foxx (1986) used this very simple procedure to treat echolalia. It involves the same set up procedure as the Cues-Pause-Point model above. That is, select 10 questions from each of three content areas: a. Identification - (e.g., "What is your name? Where do you live?"); b. Interaction - (e.g., "How are you? What kind of music do you like?"); c. Factual - (e.g., "What state do you live in? What baseball team plays in Atlanta?"). Make sure these are questions that may be commonly asked but

you are sure the person does not know the answer to. You should have 30 questions. Then conduct a baseline: Ask each of the questions, record the answers, and score the person's answers using the following categories: echolalia (when one or more of the words in the question were repeated even if other verbalizations follow); incorrect (when the response contains an irrelevant word even if the correct response was also given); or correct (when the answer is appropriate to the question or matches the trained response).

Next select a model. The model should be someone who can answer the questions correctly. Set up the training room as above with both the model and the person you are training seated across the table from you. Begin with the model and ask the first question. Provide feedback and reinforcement for the correct answer. Then look at the person and ask the same question and provide feedback and reinforcement for correct responses. Continue until the ten questions for that content area are asked and then complete the other content area questions at later training sessions. Once the person is answering correctly 100% of the time with the model present, it is time to ask the questions of the person without the model. Keep track of the responses as in the baseline and work toward 100% correctness. Fade the reinforcers and have other persons ask the questions to assure generalization has occurred.

A General Approach to Responding to Echolalia

The Judevine® Center for Autism recommends using the following procedure when a person with autism engages in echolalia: Treatment for echolalia involves responding to the person literally. If the person echoes, "Do you want juice?" (after you have asked the question), say: "No thank you." Follow this with: "I think you want to tell me something though." Then use sign language or another visual cue to prompt the person to say, "I want some juice." Similarly, if you ask the person, "Do you want a cookie? Yes or no," and the person echoes your last word ("no"), accept this response.



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Say, "You said 'no', that's okay, I will eat the cookie myself." If it looks like the person does indeed want a cookie, say, "It looks like you changed your mind, if you want a cookie, say, 'yes'." Prompt for a "yes" and reinforce a correct response.

A Final Word

Echolalia can be a persistent and maddening problem for persons with autism, their families, and teachers. But I hope you learned that echolalia is not just another problem behavior. Echolalia is a functional step in the person with autism's cognitive and language development. I also hope you have learned some strategies to support the person's movement to a more creative form of language. If you have a better or different way of handling echolalia, please let me know. Email me at gheffner@netzero.net

Recommended Reading

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