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Researchers Find New Way to Assess Communication of People with Severe Disabilities

A team of researchers led by University of Kansas scientist Nancy Brady has developed a new way to assess the communication capability of individuals with severe intellectual and developmental disabilities who often communicate with gestures, body movements and vocalizations instead of spoken words. The study was published in the February 2012 American Journal of Speech Language Pathology.

The Communications Complexity Scale (CCS) is a tool for researchers and clinicians to measure the communication development of both children and adults with disabilities as diverse as autism spectrum disorders, deaf-blindness and cerebral palsy for the purposes of assessment and intervention.

“Understanding the communication status of individuals with severe intellectual and developmental disabilities is difficult because they

often communicate in ways that may not be readily recognized, even by clinicians,” said Brady, who pioneered a communication assessment and intervention for children with deaf-blindness.

The CCS is based on the well-established continuum of “presymbolic” stages of communication development in typically developing children from birth, beginning with an

infant crying or smiling, followed by eye gaze,



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It’s A Noisy Planet. Protect Their Hearing



National Institute on Deafness and Other Communication Disorders

Noise-induced hearing loss (NIHL) is 100 percent preventable. Yet approximately 26 million Americans between the ages of 20 and 69 have high-frequency hearing loss from overexposure to loud noises at work or during leisure activities. More than 30 million Americans are

exposed to dangerous levels of noise on a regular basis¹. Children also are frequently exposed to noise levels that could permanently damage their hearing. Noise levels generated by activities as common as doing yard work, playing a band instrument, and attending sports events can result in NIHL. Research suggests that NIHL experienced at an early age may accelerate age-related hearing loss later in life.

The National Institute on Deafness and Other Communication Disorders (NIDCD), part of the National Institutes of Health (NIH), launched *It's a Noisy Planet. Protect Their Hearing*. The Noisy Planet campaign is designed to increase awareness among parents of children ages 8 to 12 ("tweens") about the causes and prevention of NIHL. With this information, parents and other caring adults can encourage children to adopt healthy habits

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gesturing and vocalizing directed at another person, to using “symbolic” communication, typically, spoken words.

These developmental changes have been studied and documented for individuals with different types of disabilities, according to Brady, and were incorporated into the CCS.

Children with ASD infrequently use gestures, for example, while those with Down syndrome often gesture to communicate. Individuals with deaf-blindness may show interest in objects but have difficulty showing shared interest with another person, a milestone in communication development, through eye gaze or gesturing.

A major goal of the CCS was a measure that would provide a summary score that would reflect an individual’s current status on the communications continuum, rather than a particular chronological age or other comparison group, a drawback of many existing measures.

Additionally, the measure was designed to be more sensitive to change over time as well as to an individual’s response to behavioral and medication interventions.

The CCS has 11 levels of behaviors associated with the stages of communication development. It was developed, tested and re-

finied by two teams of researchers at the University of Kansas and a third at the University of Washington. The study focused on three groups of 178 participants who represented a variety of ages, diagnoses, exposure to languages (other than English), motor and sensory abilities, including ASD, Down syndrome and motor impairments. None could express more than 20 words of speech, signs or symbols.

The CCS scores were compared to those of standardized tests of language and were highly correlated. They were also compared to reports from family members and other caregivers. Scores from informant reports tended to place children at higher levels of communication than did the CCS scores.

The research was supported by grants from the Eunice Kennedy Shriver National Institute of Child Health & Human Development and the National Institute on Deafness and Other Communication Disorders.

Brady is assistant professor of speech, language, hearing sciences and disorders, and a member of the BNCD.

KU News release 3/27/2012

Investigator Highlight—John Colombo



John Colombo

John Colombo received his PhD in Psychology from the State University of New York at Buffalo in 1981. From there he went to Ohio’s Youngstown State University to teach, but he had a desire to return to research. An opportunity came up at KU the very next year so he moved to Lawrence and has

been participating and leading research at KU since 1982. He has been an investigator with the BNCD since its inception in 2002.

His current projects focus on the development of cognitive and intellectual function ranging from identification of autism to infant nutritional studies. A current collaboration with KU affiliate Christa Anderson seeks to find biobehavioral markers that will help in the early identification of autism and also give

clues as to the underlying neural basis of the disorder.

At the KU Medical Center, he has been working for about 15 years on “clinical trials aimed at evaluating the effects of different nutritional compounds on infant cognitive outcomes. [The research team] has completed a postnatal supplementation in which 12 months of feeding [certain] fatty acids, like docosahexaenoic acid [DHA] and arachidonic acid [ARA]) raised verbal IQ” of 5 and six year olds. They are also doing a long term study on children whose mothers took DHA during pregnancy.

Dr. Colombo is driven to search for discovery and says:

“I love the possibility of making a difference in peoples' lives and social policy through science. I am particularly motivated by the ability to take basic scientific knowledge (i.e., knowledge that doesn't always look particularly useful to the typical lay person) and show how it bears on real-world issues and problems. I'm really excited about the advances that we'll see in the behavioral neuroscience and in epigenetics in the next 10 years . . . I think they will affect human health and development in ways that we can't even imagine.”

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that will help them protect their hearing for life.

NIDCD is focusing its campaign on the parents of tweens because children at this age are becoming more independent and developing their own attitudes and habits related to their health. They also are beginning to develop their own listening, leisure, and work habits—or soon will do so. Consequently, the tween years present an open window of opportunity to educate children about their hearing and how to protect it.

Parents still have a great deal of influence over their tween's behavior, and the Noisy Planet campaign provides them with resources that they can use to educate their children about the causes and prevention of NIHL. The campaign Web site at noisyplanet.nidcd.nih.gov provides parents with facts about NIHL, tips on how to encourage their tween to adopt healthy hearing habits, and other steps they can take to protect their tween's hearing. The site also offers information specifically for tweens, such as interactive games about noise and hearing.

How can I reduce the possibility of NIHL?

NIHL is related both to the level of a sound and to the amount of time you are exposed to it. Your ears can be your warning system for potentially dangerous noises. The noise is too loud when:

- You have to raise your voice to be understood by someone standing nearby.
- The noise hurts your ears.
- You develop a buzzing or ringing sound in your ears, even temporarily.
- You don't hear as well as you normally do until several hours after you get away from the noise.

If you are around noises at this level, take protective action. To avoid NIHL,

- Block the noise (wear earplugs or ear-muffs).
- Avoid the noise (walk away).
- Turn down the sound.

Information provided by the National Institute on Deafness and Other Communication Disorders (NIDCD), part of the National Institutes of Health. <http://www.noisyplanet.nidcd.nih.gov>

Participation Opportunities

Help us learn how toddler nutrition affects children's immediate cognitive performance.

The purpose of this study is to determine if a low glycemic beverage benefits short-term cognitive performance in children.

Age: 3-year-olds (between 33 and 39 months)

Time Commitment: Children will complete 3 visits over approximately 2 weeks. At the 1st visit, information about the study will be provided and children will complete two short tasks; the session will last about 45 minutes. During the 2nd and third visits, children will receive either a high or low glycemic drink, children will then participate in a series of short play sessions and complete several cognitive tasks; these sessions will last about 2.5 hours each. Sessions are completed @ KU Edwards Campus (126th & Quivira Overland Park, KS).

Benefits: Your child's participation can help further our understanding of the affects of toddler nutrition on cognitive performance. Families will also receive up to \$75 for completing this study (\$15 at the first visit and \$30 each at the 2nd and 3rd visits).

Contact: KU Infant and Early Cognition Lab; baby-lab@ku.edu

How can we help infants pay attention and get ready to learn?

The purpose of this research project is to investigate the types of events that most effectively capture attention and improve learning in infancy. We want to determine how the *synchrony* of visual and auditory input affects attention and learning in 4-month-olds. *Synchrony* is the degree to which sights and sounds correspond in time (e.g., whether a sound track "matches up" with the visual actions in a movie).

Age: 3.5- to 4.5-month-old infants

Time commitment: One 30-minute visit to the KU Edwards Campus in Overland Park. We have appointments during the week and on weekends.

Benefits: Your child's participation will help contribute to the growing knowledge about how babies learn, think, and develop.

Contact: KU Infant and Early Cognition Lab; baby-lab@ku.edu; 913-897-8590

Check us out on Facebook: KU Infant and Early Cognition Laboratories

It's A Noisy Planet
PROTECT THEIR HEARING
www.noisyplanet.nidcd.nih.gov

Too much noise can harm your child's hearing.

Learn how to prevent noise-induced hearing loss.

800-241-1044
 800-241-1055 (TTY)

NIDCD
 National Institute on Deafness and Other Communication Disorders
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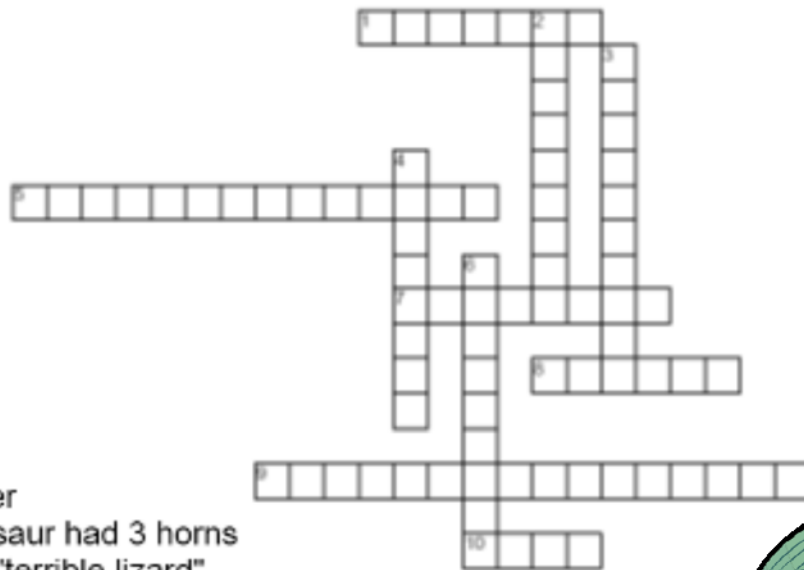
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About this Newsletter:

The BNCD newsletter is designed to keep you informed about the ongoing research projects that are being conducted by BNCD researchers at the University of Kansas. Participants who have been part of recent research projects conducted by BNCD researchers, parents who have expressed interest in participating in future research, and individuals from organizations such as schools and daycare centers that have an interest in BNCD studies will receive this newsletter from time to time to keep them up-to-date about the research activities at the BNCD. If you do not wish to receive future newsletters, please call or e-mail the BNCD to have your name removed from our list. Research at the BNCD is supported in part by grant number 5 P30 DC05803 from the National Institute on Deafness and other Communication Disorders (NIDCD) at the University of Kansas.

Dinosaur Crossword



Down

- 2. Meat-eater
- 3. This dinosaur had 3 horns
- 4. It means "terrible lizard"
- 6. Plant-eater

Across

- 1. Having died out
- 5. A scientist who finds and studies fossils
- 7. The bones of a dinosaur make up its _____
- 8. Remains of animals or plants that have been turned into rock
- 9. A fierce dinosaur with sharp teeth and short arms
- 10. Most dinosaurs laid these

