

Easy as A, B, C and 1, 2, 3

Rowan researchers decode kids' language and counting

By Christine
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Reeves engages Corinne, 2, in play with a "Glim." Corinne is the daughter of Lou and Gigi Cressman Parisi '86 and granddaughter of Bob Cressman '70.

Ma-Ma. Da-Da. Up. Doggie. No. The first word a child says is guaranteed to thrill his or her parents. And although it's a "first" worthy of a videotape recording and a baby book entry, learning to speak is far more complex than many moms and dads may imagine. Some children start to babble at a very young age, and others may be almost two years old before they speak. Of course, any parent knows that a baby has other ways of communicating—crying, grunting and pointing, for example. Just because a child can't say a certain word doesn't mean she can't comprehend it.

When her daughter Cecily was learning how to count and speak, Associate Psychology Professor Laretta Reeves thought she knew what to expect. She had been studying how children learn to use words and develop math skills since college. When Reeves told Cecily that the red-breasted bird is a robin, her daughter smiled and accepted the bird's new name. But when Reeves called a white flower a daisy, she was surprised when her daughter replied: "No, it's a flower."

Although most parents might not give a second thought to their child's confusion, Reeves was intrigued. A graduate of Michigan State University and Temple University, Reeves has lectured at universities in Mexico City and England and has been published in several journals, including *Psychological Bulletin*. Her initial interest in language acquisition and development of mathematical abilities came from coursework in college and summer work at Temple University's infant language lab, but what Reeves noticed in her own daughter's language development sparked her current research. "When my daughter was born I started to see what, up to that point, I had only read about and that gave me ideas," she explained.

Because of her research in child language learning, Reeves knows that children understand the difference between animate and inanimate objects. Most animate objects, like a dog or a person, have proper names such as "Rover" or "Arthur." What Reeves was learning from watching her daughter was that Cecily was confusing "daisy" with the class noun label "flower,"

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instead of a more specific proper name such as “rose” or “daffodil.” “When I see that she does something, then I can tie it in to what I know,” she said. “Her confusion led me to think ‘well, no one’s tested if this is the reason behind that.’”

Reeves put together a study in which she tested young children to see how they use class noun and proper noun labels. “I was interested in how, when children learn a word, they interpret it,” she said. With the help of students as assistants, she developed several objects with nonsensical names such as Glim and Snark. Some appeared to be animate, with legs and eyes, while others were inanimate, like kitchen utensils.

The research found that children as young as 13 months understand that a new word can apply to a class of objects. Most children that age have a very limited vocabulary, maybe 10 words. But their ability to understand language and words is much more advanced than their ability to use words.

Children that are a little older, 13–19 months, are even more likely to adopt a class noun interpretation, particularly for inanimate objects. Reeves’s hypothesis is that children hesitate to use class noun labels for animate objects because they realize that animate objects often have proper names that belong only to them. By 20 months, they can often differentiate between “this is Rover” and “this is a doggie.” Once children understand the difference in those two statements, they are more likely to accept that the daisy and the rose are also flowers.

Finding age-appropriate children to participate in her studies can be difficult, because parents can be more protective of kids from six months to three years, when most language skills are learned. Rowan alumni, staff and students, as well as parents whose children attend local day care centers, have allowed Reeves to test their children through observed, one-on-one play sessions. “The day care centers have been very cooperative,” she said.

Reeves is careful not to give the parents information that would allow them to prepare their kids, but she explains

enough to assuage any concerns about their child being observed. “For the day care centers that help me out, I try to do something for them, as well,” she said. At Children’s Corner Day Care Center in Glassboro, she gave a presentation to parents on parenting styles and healthy methods of discipline.

Reeves relies on student research assistants to help her run the studies. They recruit parents and code and analyze the data. Reeves, a strong supporter of her students, encourages them to make presentations at the Rowan University Undergraduate Psychology Conference. “Plus, some of my students have actually been in from ground zero, so they help to design the experiments,” she explained.



Laura Wagenhoffer '00 videotapes Christine Good '99 as she plays with 10-month-old Brandon, son of Kevin '90 and Lilian Davis. The research sessions last only about 10 minutes, or as long as the child stays interested in playing.

One of those students is Ité MacFerran '98. MacFerran returned to school after several years of running a business with her husband. “I was looking for something to get my juices rolling,” she explained. And she found just that while working with Reeves. “Her energetic goals left me breathless,” she said.

Reeves and MacFerran collaborated to develop a method of testing the use of one-to-one correspondence by young children, 18 months to three years, who are learning to count. They found that even before toddlers can count accurately and consistently, they do understand that each number should be applied to

only one item and that each item should only be counted once. They presented their research findings at a national conference in April.

To test children before they have mastered counting, Reeves and MacFerran developed a process in which children are asked to “put the balls in the jars.” The researchers take notes on whether the child places each ball in a separate jar, representing one-to-one correspondence. The experiment first uses clear jars and then opaque jars to test whether being able to see through the container influenced children to show one-to-one correspondence with containers and balls. Next, the researcher uses toys and jars, counting the items before asking the child to “put the toys in the jars.” Reeves theorizes, “counting should encourage the one-to-one correspondence of jars to toys, even if the youngest children did not show it in the first two trials.”

While on sabbatical in the fall Reeves will focus her energies on writing journal articles about her research studies. “A few years down the road I may consider writing a book on cognitive development, to include my research and the work of others in the field,” she said. Reeves still finds inspiration from watching Cecily, now 3 1/2, as she expands her vocabulary and perfects her counting skills. “I am interested in finding out what very young children understand in language and counting long before they exhibit those skills,” she said. “For example, what types of games would help facilitate learning those skills?”

One of Reeves’ goals is to combine her formal education in language acquisition with her interest in helping children communicate better. “There is so much emphasis on education today, particularly the somewhat misguided emphasis placed on students’ IQ. Children have ‘scaffolding’ in place for cognitive skills at a very young age, so we need to engage in play and talking to bring our children to their full potential,” she said. “And that full potential is more important to foster than IQ.” ■