



Spring 2012

Dear parents and teachers,

What a fun time we had running our language studies this year! We are so grateful for your involvement in our research. Not only does it allow us to make an important contribution to the field of language acquisition and development, but it also allows Rutgers undergraduates to get hands-on experience with research. My team of research assistants worked hard with me each week to design, run, analyze, and present the results of our studies with children two to six years of age. At the end of the year, they were so amazed by how much they learned—and what these smart preschoolers know!

In our work, we investigate how children and adults assign meaning to words and sentences. This year, we focused on the following questions: whether children know that *two* can mean ‘at least two’ or ‘at most two’ in certain contexts, how they interpret adjectives like *round* and *tall* when applied to a group of objects, and what they know about *wh*-questions that could have multiple answers. Tying all of these studies together is an interest in figuring out how children acquire the semantics of their native language, and describing the process of their becoming adult-like. We hope this newsletter gives you a glimpse at the kinds of studies we do, how you might be able to make connections at home, and how amazing your children are!

Please consider bringing your little one(s) by our lab at Rutgers this summer! Our studies are ongoing, and new ones are popping up all the time. Email us at Rutgers.language.studies@gmail.com if you would like to participate! Children receive a small token of appreciation, and parents are given some reimbursement for travel. We’d love to have you visit!

Many thanks,
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When *two* does not necessarily mean '2'

What does *two* mean to you? As adults, we know that numbers can take on different meanings in different contexts. For example, if I ask if you have two children and you have three, you might respond 'no' because you think I meant 'exactly two.' But if I ask if you have two dollars, you can respond 'yes' if you have a 5-dollar bill. In this case, *two* means something like 'at least two.' But *two* can also mean 'at most two'. Think about what it means to say that you can miss two questions and still win the game. We wanted to know whether children have the same range of interpretations of *two* as adults.



We told children a series of stories about familiar characters, like Curious George. In each story, the character tried to follow some instructions, and the children had to help a puppet (our friend Mr. Mouse) learn what's ok and what's not ok. In one story, Curious George was going to bed and was very sleepy, but the Man in the Yellow Hat told him that he had to read two books before going to bed. In another version, Curious George begged the Man to let him read before bed and the Man said he was allowed to read two books before going to bed. In each version, children saw the same thing: George took three books. Was what he did ok? We found that children are more likely to object to George reading three books when he was allowed to read two than when he had to. This tells us they have a principled way of determining what *two* means based on the other words in the sentence and scenario.

Try this at home! The next time you are at the playground with your child, say, "You can go down the slide two more times before we go home." Are three more slides ok? Is one more slide ok? At dinner time, if you ask your child to please have two more bites of broccoli, are three bites ok? Is only one bite ok? (My own children surprised me with their answers!)

Which one?

Imagine you and your child are having a pretend playdate with Big Bird, Grover, and Elmo. At the playdate, each friend sings a song. Big Bird sings *Twinkle, Twinkle, Little Star*, Grover sings *Skip to my Lou*, and Elmo sings *Oh, Susannah*. Then they all join in together for a round of *You Are My Sunshine*. Now, answer this question: *Which song did every friend sing?* Did you answer *You Are My Sunshine*, or did you list each individual friend-song pairing? Interestingly, both answers





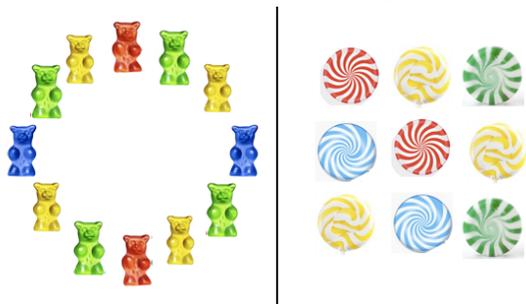
are just fine!

We wanted to know whether adults and children access both types of answers, and if so, if their preference for one or the other answer type differs. We also substituted *each* for *every*, and also asked different versions of the question, which don't allow multiple answers (*Which boy played every instrument?*) It turns out that adults strongly prefer the 'single' answers, 4-year-olds prefer the 'pair-list' answers, and 5-year-olds are already becoming more like the adults. This is exciting, because it fills in the timeline for when children are developing certain aspects of syntax and semantics, like how *wh-* words and quantifiers like *every* interact.

Try this at home! Create similar scenarios with friends playing games, reading books, or wearing clothes. Does your child's answer stay the same, or change every time? What happens if there is a friend who doesn't do anything, or a book that wasn't read? Does this change the situation? If your child gives a 'pair-list' answer, was every pairing listed, or did it seem incomplete? (This happens a lot with preschoolers!)

Describe it!

Look at this candy. Can you point to the round candy?



Did you point to the group of candy on the left that is in the shape of a circle, or did you point to the circular candy on the right? If you pointed to the candy on the right, then you know that *round* tells us about the shape of the individuals in the group. We asked children about this and other adjectives like *tall* (tall blocks), to see if they know about this aspect

of word meaning. At two, children are still learning this, but by four, they almost look like adults! What happened in those two years? They appear to have refined their semantic representation of these adjectives to target the right level. (Don't worry—we just showed them pictures of candy!)

Try this at home! Arrange square Graham crackers or triangular Triscuits into a circle, then arrange some round crackers into a square or a triangle in another area nearby. Ask your child to show you the round crackers. Which set did s/he choose? Have fun snacking on these with cheese and fruit afterwards as you talk about shapes!