

## Kids' gestures foretell better vocabularies

CHICAGO — Anyone who has witnessed a 3-year-old imitate a rude hand signal from his car seat knows that young children are perfectly capable of picking up gestures from adults. New research suggests that 14-month-old children who gesture more will go on to have higher vocabularies by the time kindergarten begins, researchers reported February 12 at the annual meeting of the American Association for the Advancement of Science. The research also appears in the Feb. 13 *Science*.

“Children on the first day of school vary greatly in vocabulary,” Susan Goldin-Meadow of the University of Chicago, coauthor of the study, said in a news briefing February 12. “The question is, why?”

Goldin-Meadow and colleague Meredith Rowe, also of the University of Chicago, studied 50 families representing the economic and educational levels in the greater Chicago area. For 90 minutes at a time, researchers videotaped everyday interactions in the home between a 14-month-old child and the primary caregiver, who was almost always the mother. Researchers then tallied the number of gestures with a clear associated meaning, like a child pointing at a cup or nodding his head.

“At 14 months, you can’t see a difference in speech,” says Goldin-Meadow. But researchers did detect what Rowe calls “striking differences” between the number of meaningful gestures children from wealthier, educated families made and the number children from poorer, less educated families made.

Children from lower socioeconomic backgrounds performed an average of 13 meaningful gestures during each 90 minute session, while kids from higher socioeconomic families averaged 24. “The number almost doubles,” says Rowe. The numbers of gestures from caregivers was also greater in the higher socioeconomic group, suggesting that children pick the gestures up from caregivers.

Researchers later tested the children’s vocabularies at age 54 months, right around when children start school. Children who had gestured more at a younger age scored significantly higher on



### POINT AND LEARN

A new study finds a link between a kindergartner's vocabulary strength and how often that child gestured at age 14 months.

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vocabulary tests.

“This is excellent work,” comments Erika Hoff of Florida Atlantic University in Davie. She says the finding is interesting because it shows that language acquisition begins well before children start to say very much.

Children whose parents speak to them more are known to have higher vocabularies. But gesturing also affects vocabulary, even when all speech effects are removed from the analysis, the researchers say. Gesturing effects go above and beyond speech effects, says Goldin-Meadow.

The researchers point out that these results do not prove that gesturing causes high vocabulary, just that the two are correlated.

A child’s gestures may spark more “teachable moments,” creating opportunities for verbal reinforcement of ideas. “The child points at a dog and the parent says, ‘Yes, that’s a dog,’” says Rowe.

Research from Goldin-Meadow's team also suggests that gesturing may encourage children to think more creatively by bringing out new ideas and improving clarity. By manipulating how much children gestured, researchers gauged the influence of gesturing. Older children told to gesture while solving math problems on a chalkboard got the answer right more frequently than children who were told not to gesture. “These gestures are not mere hand waving. Kids are extracting meaning from gestures,” says Goldin-Meadow. “The educational relevance could be fabulous.”

Children with a poorer vocabulary go on to do worse in all subjects in school, says Rowe. And unfortunately, “the gap doesn’t get smaller. It’s going to grow and get worse. What we’re doing is trying to understand when this gap first starts.”

Rowe and her colleagues plan to continue following the children until they enter the fifth grade.