

Talk to your babies: Words influence infants' cognition from first months of life

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Northwestern University researchers have found that even before infants begin to speak, words play an important role in their cognition. For 3-month-old infants, words influence performance in a cognitive task in a way that goes beyond the influence of other kinds of sounds, including musical tones.

The research by Alissa Ferry, Susan Hespos and Sandra Waxman in the psychology department in the Weinberg College of Arts and Sciences, will appear in the March/April edition of the journal *Child Development*. In the study, infants who heard words provided evidence of categorization, while infants who heard tone sequences did not.

Three-month-old infants were shown a series of pictures of fish that were paired with words or beeps. Infants in the word group were told, for example, "Look at the toma!" --- a made-up word for fish, as they viewed each picture. Other infants heard a series of beeps carefully matched to the labeling phrases for tone and duration. Then infants were shown a picture of a new fish and a dinosaur side-by-side as the researchers measured how long they looked at each picture. If the infants formed the category, they would look longer at one picture than the other.

The results, say the authors, were striking. The researchers found that although infants who heard in the word and tone groups saw exactly the same pictures for exactly the same amount of time, those who heard words formed the category fish; those who heard tones did not.

"For infants as young as three months of age, words exert a special influence that supports the ability to form a category," said Hespos, associate professor of psychology and one of the authors of the study. These findings offer the earliest evidence to date for a link between words and object categories."

Participants included 46 healthy, full-term infants, from 2 to 4 months of age. Half of the infants within each age bracket were randomly assigned to the word group. All infants in the language group were from families where English was the predominant [language](#) spoken in the home. The remaining infants were in the tone group.

"We suspect that human speech, and perhaps especially infant-directed speech, engenders in young infants a kind of attention to the surrounding objects that promotes categorization," said Waxman, a co-author and professor of psychology. "We proposed that over time, this general attentional effect would become more refined, as [infants](#) begin to cull individual words from fluent speech, to distinguish among individual words and kinds of words, and to map those words to meaning."

Provided by Northwestern University

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