

# New evidence reveals powerful role of experience in linking language and cognition in infants

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Even before infants understand their first words, they have already begun to link language and thought. Listening to language boosts infant

cognition. New evidence provides even greater insight into the crucial role of language exposure in infants' first months of life, according to Northwestern University research.

Prior research has found that infants come into the world equipped with an initially broad link, one that encompasses the communicative signals of both humans and nonhuman primates. At 3 months old, listening to both human and nonhuman primate (lemur) vocalizations supports infants' ability to form categories, a building block of cognition. But by 6 months, the link has narrowed, with only human vocalizations supporting categorization. Infants' initially broad link to cognition is sculpted by their experience.

Northwestern researchers sought to understand what mechanisms underlie this rapid tuning process and document in a new study the crucial role of experience as infants tune this link specifically to human language.

In the experiments, the researchers found that merely exposing 6-month-old infants to nonhuman primate vocalizations permits them to preserve, rather than sever, their early link between these signals and categorization. Exposing infants to backward human speech—a signal that fails to support categorization in the first year of life—does not have this advantage.

"This new evidence illuminates the central role of early experience as infants specify which signals, from an initially broad set, they will continue to link to core cognitive capacities," said Danielle R. Perszyk, lead author of the study and a doctoral candidate in cognitive psychology in the Weinberg College of Arts and Sciences at Northwestern.

The research, which underscores the importance of language exposure in the first months of life, also has far-reaching implications for early

language and [cognitive](#) development.

"It provides a unique vantage point from which to consider the intricate interface between capacities inherent in the human infant and the shaping force of experience," said Sandra Waxman, senior author of the study, director of the Project on Child Development, faculty fellow in Northwestern's Institute for Policy Research and the Louis W. Menk Chair in Psychology at Northwestern.

"Although experience may play little, if any role, in picking out the broad set of signals that infants first link to cognition, here we show that experience is essential in guiding infants, with increasing precision, to single out which signals from the initially privileged set they will continue to link to meaning and which they will tune out," Waxman said.

"Listening to the calls of the wild: The role of experience in linking [language](#) and cognition in young [infants](#)" will publish in an upcoming issue of *Cognition*.

Provided by Northwestern University

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