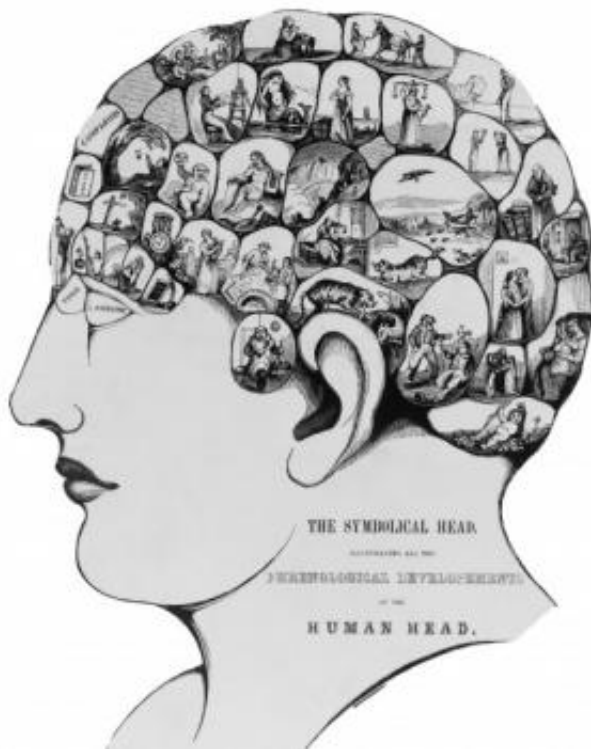


# What the [beep]? Infants link new communicative signals to meaning

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Credit: Karen Arnold/Public Domain

Researchers have long known that adults can flexibly find new ways to communicate, for example, using smoke signals or Morse code to communicate at a distance, but a new Northwestern University study is the first to show that this same communicative flexibility is evident even in 6-month-olds.

The researchers set out to discover whether [infants](#) could learn that a novel sound was a "communicative signal" and, if so, whether it would confer the same advantages for their learning as does speech.

To do so, they had infants watch a short video in which two people had a conversation—one speaking in English and the other responding in beep sounds. Infants were then tested on whether these novel beep sounds would facilitate their learning about a novel object category, a fundamental cognitive process known to be influenced by speech. Could the beeps, once communicative, have the same effect? Indeed, the researchers found that after seeing the beeps used to communicate, the infants linked beep sounds to categorization just as if they were speech.

"We reasoned that if infants were able to learn about a new communicative signal, they might now succeed in object categorizing while listening to tones, despite having failed in prior studies while listening to tones without any prior exposure to them," said Brock Ferguson, lead author of the study and a doctoral candidate in cognitive psychology in the Weinberg College of Arts and Sciences at Northwestern. "That is, they might treat this new 'communicative' sound as if it were speech."

In contrast, Ferguson said, if infants couldn't interpret this new signal as communicative, or if their categorization in the subsequent task could only be 'boosted' by speech, then infants should fail to categorize objects while listening to tones as they had in all prior studies.

"We knew that speech could promote infants' learning of object categories. Now we know that for infants, this link to learning is broad enough to encompass many communicative signals—including ones to which infants had just been introduced," Ferguson 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, highlighted the powerful implications of this work for the understanding of infants' intricate coordination of social, language and cognitive development.

"Infants' success in accepting this entirely novel signal as communicative is astounding," Waxman said.

"This shows that infants have the social capacity to recognize an entirely new social communicative signal in their environment. And once recognized, they can use it to support cognition. Babies, like adults, are already on the lookout for new ways that the people around them communicate with one another," Waxman said.

"What the [beep]? Six-month-olds link novel communicative signals to meaning" will be published in an upcoming issue of *Cognition*.

Provided by Northwestern University

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