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Infants' recognition of speech more sophisticated than previously known, researchers find

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The ability of infants to recognize speech is more sophisticated than previously known, researchers in New York University's Department of Psychology have found. Their study, which appears in the journal *Developmental Psychology*, showed that infants, as early as nine months old, could make distinctions between speech and non-speech sounds in both humans and animals.

"Our results show that infant speech perception is resilient and flexible," explained Athena Vouloumanos, an assistant professor at NYU and the study's lead author. "This means that our recognition of speech is more refined at an earlier age than we'd thought."

It is well-known that [adults](#)' speech perception is fine-tuned—they can detect speech among a range of ambiguous sounds. But much less is known about the capability of infants to make similar assessments. Understanding when these abilities become instilled would shed new light on how early in life we develop the ability to recognize speech.

In order to gauge the aptitude to perceive speech at any early age, the researchers examined the responses of infants, approximately nine months in age, to recorded human and parrot speech and non-[speech sounds](#). Human (an adult female voice) and parrot speech sounds included the words "truck," "treat," "dinner," and "two." The adult non-speech sounds were whistles and a clearing of the throat while the parrot

non-speech sounds were squawks and chirps. The recorded parrot speech sounds were those of Alex, an African Gray parrot that had the ability to talk and reason and whose behaviors were studied by psychology researcher Irene Pepperberg.

Since infants cannot verbally communicate their recognition of speech, the researchers employed a commonly used method to measure this process: looking longer at what they find either interesting or unusual. Under this method, looking longer at a visual paired with a sound may be interpreted as a reflection of recognition. In this study, sounds were paired with a series of visuals: a checkerboard-like image, adult female faces, and a cup.

The results showed that infants listened longer to human speech compared to human non-speech sounds regardless of the visual stimulus, revealing the ability recognize human speech independent of the context.

Their findings on non-human speech were more nuanced. When paired with human-face visuals or human artifacts like cups, the infants listened to parrot speech longer than they did non-speech, such that their preference for parrot speech was similar to their preference for human speech sounds. However, this did not occur in the presence of other visual stimuli. In other words, infants were able to distinguish animal speech from non-speech, but only in some contexts.

"Parrot speech is unlike human speech, so the results show infants have the ability to detect different types of speech, even if they need visual cues to assist in this process," explained Vouloumanos.

Provided by New York University

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