

Toddlers don't listen to their own voice like adults do

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When grown-ups and kids speak, they listen to the sound of their voice and make corrections based on that auditory feedback. But new evidence shows that toddlers don't respond to their own voice in quite the same way, according to a report published online on December 22 in *Current Biology*.

The findings suggest that very young children must have some other strategy to control their [speech production](#), the researchers say.

"As they play music, violinists will listen to the notes they produce to ensure they are in tune," explained Ewen MacDonald of the Technical University of Denmark. "If they aren't, they will adjust the position of their fingers to bring the notes back in tune. When we speak, we do something very similar. We subconsciously listen to vowel and consonant sounds in our [speech](#) to ensure we are producing them correctly. If the acoustics of our speech are slightly different from what we intended, then, like the violinists, we will adjust the way we speak to correct for these slight errors. In our study, we found that four-year-olds monitor their own speech in the same way as adults. Surprisingly, two-year-olds do not."

That's despite the fact that infants readily detect small deviations in the [pronunciation](#) of familiar words and babble in a manner consistent with their native language. By the time they turn two, American children have an average vocabulary of about 300 words and appear well on their way to acquiring the sound structure of their [native language](#).

In the experiment, adults, four-year-olds, and two-year-olds said the word "bed" repeatedly while simultaneously hearing themselves say the word "bad." (To elicit those utterances from the young children and [toddlers](#), the researchers developed a video game in which players help a robot cross a virtual playground by saying the robot's 'magic' word "bed.")

"If they repeat this several times, adults spontaneously compensate, changing the way they say the vowel," MacDonald said. "Instead of saying the word 'bed,' they say something more like the word 'bid.'"

Four-year-olds adjusted their speech, too, the researchers show. The two-year-olds, on the other hand, kept right on saying "bed."

MacDonald says the results suggest a need to reconsider assumptions about how children make use of [auditory feedback](#). It may be that two-year-olds depend on their parents or other people to monitor their speech instead of relying on their own voice. MacDonald notes that caregivers often do repeat or reflect back to [young children](#) what they've heard them say.

While this study involved children with normal speech development, MacDonald says they'll be exploring potential applications for understanding or addressing delayed and abnormal early speech development.

More information: Online paper: [DOI:10.1016/j.cub.2011.11.052](https://doi.org/10.1016/j.cub.2011.11.052)

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