

For adults, the terrible twos are a confusing earful

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Here's another reason you might be exhausted after that preschool birthday party: Your brain had to work to figure out who actually asked for more ice cream.

"What we found with two-and-a-half-year-olds is that it's amazingly hard for [adults](#) to identify who's talking," said Angela Cooper, a [postdoctoral researcher](#) at the University of Toronto.

Cooper's co-authored research will be presented in the poster session at the Acoustical Society of America's 176th Meeting, held in conjunction with the Canadian Acoustical Association's 2018 Acoustics Week in Canada, Nov. 5-9 at the Victoria Conference Centre in Victoria, Canada.

The study, with University of Toronto professor Elizabeth K. Johnson and postdoctoral researcher Natalie Fecher, used a space alien interactive game created by Cooper to elicit recordings from over 50 native English-speaking Toronto-area two-and-a-half-year-old children individually saying 32 common words like tree, dog, ball and elephant. The same words were recorded by the children's mothers.

In the experiment, University of Toronto undergraduate students aged 18-25 each listened to 80 pairs of words spoken by 20 of the children and indicated whether the words were spoken by the same or a different individual. They did the same for 20 of the adult voices.

"Listeners were significantly worse at telling apart child voices relative to adult voices," Cooper said. Participants correctly identified different adult voices 65 percent of the time, but only about 40 percent of the time with the squeaky preschooler voices.

"I find it particularly interesting that the participants' ability to identify adult voices was not related to their ability to identify children's voices," Cooper said. "You're maybe using different information or you're processing things slightly differently when you're listening to an adult [voice](#) versus when you're listening to a child's voice."

In a second stage of the study, the researchers found that after a training

session that included listening to just four different child and four different adult voices, participants had improved voice identification skills, though the improvement was less for children's voices than adult voices.

"Part of this training process is retuning what speech cues we need to pay attention to," she said. "Often children have particular mispronunciations. Some kids will say 'poon' instead of spoon, or elephant becomes 'ephant'. We might be actually cuing in to which child makes different kinds of errors."

In one of a series of follow-up studies, the researchers are using pupillometry, a measure of pupil dilation, to quantify adult cognitive effort involved in trying to differentiate between the voices of two-and-a-half-year-old children.

As for the next kids' [birthday party](#)?

"What I'd like to say to parents is that with exposure it does get easier over time," Cooper said.

More information: "Distinguishing Dick from Jane: Children's voices are more difficult to identify than adults' voices," by Natalie Fecher, Angela Cooper and Elizabeth K. Johnson will take place Tuesday, Nov. 6, 2:00 p.m. in the Upper Pavilion (VCC) of the Victoria Conference Center in Victoria, British Columbia, Canada

Provided by Acoustical Society of America (ASA)

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