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Babies Recognize Mom's Voice from the Womb

May 22

By Lee Dye



Even before we were born, we knew our mother's voice and could distinguish it from other voices.

That's one of the key findings of an ongoing research project by Canadian and Chinese researchers who are studying infant development. The research suggests that while still in the womb, our brains were learning speech patterns and laying the groundwork for language acquisition.

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"Before birth, the brain is being set up to learn language," says Barbara Kisilevsky, a nursing professor at Queens University in Ontario, who conducted the research with a team of psychologists from Queens, and obstetricians in Hangzhou, China.

Listening In

Earlier research by Kisilevsky revealed that fetuses hear sounds at 30 weeks, although that won't come as much of a surprise to mothers who may have felt their baby jump when someone slammed a door. But now she has taken it a step farther with an interesting experiment that reveals just how well the fetus is prepared to get on with its life as the pregnancy nears its end.

It had already been known that newborn infants show a preference for their mother's voice, but her latest research shows they also prefer that familiar sound while still in the womb. Kisilevsky carried out the first leg of the research in China, because she already had a research project under way there and this fit nicely with that work.

It's important in developmental research to determine whether the results are culturally based, or universal and applicable to all cultures. And the research shows that fetuses learn to distinguish their mother's voice in all cultures, because she got the same result in Canada that she got in China.

"This study could have been done anywhere," she says. But China was convenient because of her other projects there, and of course there is a vast difference between Chinese and Canadian cultures.

"It's good to know that in both cultures, we got the same results," she says.

Working with researchers at Zhejiang University, Kisilevsky tested 60 women in the final stage of pregnancy. All the mothers were tape-recorded as they read a poem out loud. Then the mothers were divided into two groups. Half the fetuses heard the recording of their own mother. The other half heard another mother, but not their own.

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Heart Quickens

In both cases, the poem caused a change in the baby's heart rate. The heart rate accelerated among those who heard their own mother's voice, and decelerated among those who heard a voice other than their mother's.

Deceleration of the heart rate is "an attention mechanism," Kisilevsky says. The heart-beat among fetuses who heard an unfamiliar voice slowed down, she says, because they were paying close attention to a voice they did not recognize. In other words, they were trying to figure out who was talking.

The fact that the heartbeat changed in both cases — up for mom, down for someone else — shows the fetuses "noticed both voices," she says, and could tell one from the other.

By the way, the poem is immaterial here. Kisilevsky suspects she would have had the same results if the mothers had been reading a phone book. It's not that the fetuses recognized the content. What they recognized was the speech patterns that distinguish one voice from another.

"We all have our own way of talking," she says. "We stop at different times, we take breaths at different times, and that's what they are recognizing."

Dad in the Background



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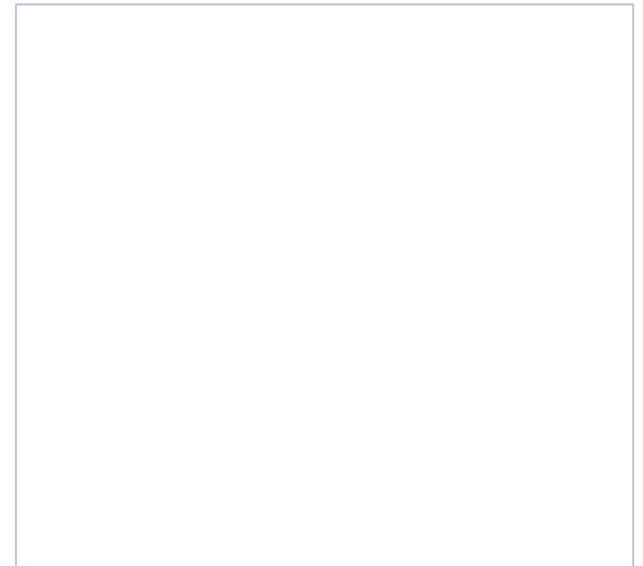
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