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The Right Ear Is From Mars  
By ANAHAD O'CONNOR

Belting out a few notes on key might take years of practice, and perfect pitch the right genetics, but when it comes to something as simple as telling noise from symphony, speech from music, all ears are created equal - or so it was once thought.

But in a new study, scientists have found that the left and right ears process sound differently. From birth, the right ear responds more to speech, while the left ear is more attuned to music, according to the study, published in Science on Sept. 10.

The findings could have substantial implications for deaf people who need cochlear hearing devices, which are implanted in only one ear, said Dr. Yvonne Sininger, a visiting professor of head and neck surgery at the David Geffen School of Medicine at the University of California, Los Angeles and lead author of the study.

While the idea that the left and right ears are not identical is new, scientists have known for decades that the two sides of the brain sort out sound in different ways. Speech is processed primarily in the left hemisphere of the brain, while music is handled largely by the right, hence the tendency to associate creativity with "right-brain" dominance and analytical thinking with "left-brain" supremacy. But until now, most researchers overlooked the possibility that differences in auditory processing originated in the ear. "I think everyone just assumed that the two ears were essentially interchangeable," Dr. Sininger said.

With help from researchers at the University of Arizona, Dr. Sininger tested hearing ability in thousands of infants using miniature microphones that emitted sounds in the subjects' ears and measured amplification. Tiny cells in the ear respond to sound by expanding and contracting to enhance vibrations, which are then converted to nerve impulses that travel to the brain. But some of those vibrations bounce back in the opposite direction, allowing scientists to analyze the extent of amplification, a measure of how well the ear is responding.

Dr. Sininger found that a series of rapid clicks - resembling the rhythm of speech - produced a greater response in the right ear. The left ear seemed more attuned to tones representing music.

In other studies, researchers have found that children with hearing loss in the right ear tend to have more problems in school than children who are deaf in the left ear. The new findings suggest that the right ear is critical for learning situations.