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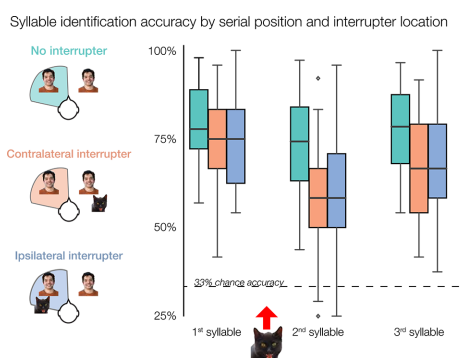
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Inserting an unexpected sound into streams of normal syllables degrades recall for listeners



When walking in the forest, the sound of a twig snapping may alert a person to danger and ultimately keep them safe. However, for people with hearing impairments, similar, unexpected interruptions may not be clear enough for the brain to distinguish from other ambient sounds. Understanding how listeners with normal hearing process interruptions can therefore aid and inform hearing aids and assistive listening devices.

Liang et al. investigated how the spatial and temporal relationships between a target stream of speech and an interruption changed listener recall.

The online experiments began with two streams of competing syllables. Subjects wore headphones that presented independent signals to the left and right ears, allowing the researchers to control the direction of the sound streams. In some trials, the syllables were interrupted with a loud “meow!”

“Honestly, we chose to use a meow because it was fun!” said author Barbara G. Shinn-Cunningham. “First author Wusheng Liang just got her own cat, and we wanted something very distinct from speech, but also meaningful. We could have used almost any sound – but using a cat sound made us happy.”

Through a series of experiments, the team found that including the meow degraded a subject’s recall of the target stream of syllables. The direction of the interruption had little effect. If the meow occurred before the speech, it degraded recall slightly, but it had no effect if it was introduced after the stream ended. Including more frequent interruptions still interfered with recall.

The scientists are currently conducting follow-up experiments where they explore similar relationships while measuring a subject’s neural signals with electroencephalography.

Source: “Cat-astrophic effects of sudden interruptions on spatial auditory attention,” by Wusheng Liang, Christopher A. Brown, and Barbara G. Shinn-Cunningham, *Journal of the Acoustical Society of America* (2022). The article can be accessed at <https://doi.org/10.1121/10.0010453>.

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