

Blind people remember language better than sighted people do

April 27 2022, by Jason Lucas



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Blind people can remember speech better than sighted people, but a person's ability to see makes no difference in how they remember sound effects, found a new study by Johns Hopkins University and the

University of California, Irvine.

"It's interesting that people who are blind only showed an advantage with [verbal memory](#)," said senior author Marina Bedny, an associate professor of psychology and [brain sciences](#) at Johns Hopkins whose work regularly compares blind and sighted individuals' brains. "Blind people may use language like a mental tool to remember information."

The findings appear in *Experimental Brain Research*.

Researchers conducted two [memory tests](#) with 20 blind adults and 22 blindfolded sighted adults. They wondered if blind participants would outperform sighted ones at remembering spoken sounds. First, participants listened to series of letters, followed by a delay. Then they heard either the same series or a "foil" series where a [letter](#) is replaced or put into the wrong position. Participants then judged whether the second series of letters was the same as the first. For the second test, they listened to letters while solving mathematical equations with proposed answers. Participants determined if equations solutions were correct, followed by reciting back the letters.

As the researchers expected, blind participants outperformed sighted ones on remembering speech. The results from another testing phase, which required solving [mathematical equations](#) and recalling letters, confirmed researchers' predictions. Blind participants again remembered more letters than sighted participants despite being forced to multitask mentally.

"On a daily basis, [blind people](#) use their memory much more to remember things, while sighted people can rely on visual clues to recall information," said Karen Arcos, lead author and a blind postdoctoral fellow at University of California, Santa Cruz who earned her Ph.D. at University of California, Irvine. "We think blind people's advantages on

the verbal tests stem from increased practice remembering information. The brain area responsible for vision in sighted people, the 'visual' cortex, is repurposed for other functions in blind people. Perhaps it enhances blind people's language processing."

In another experimental phase, participants listened to two streams of [sound effects](#) and were asked if sounds matched. The researchers used sound effects such as tones and high-pitched beeps rather than everyday sounds to ensure sounds couldn't be labeled with words. On this task, blind and sighted people performed essentially the same.

"By using meaningless sound effects, we prevented participants from using language to remember them this lowered blind people's usual memory advantage" said Bedny.

Bedny is now studying what enables blind people to outperform sighted people at remembering words, letters, and numbers. Moreover, she plans to examine if the "visual" cortex contributes to improved [memory](#) for speech and language in those born blind.

More information: Karen Arcos et al, Superior verbal but not nonverbal memory in congenital blindness, *Experimental Brain Research* (2022). [DOI: 10.1007/s00221-021-06304-4](https://doi.org/10.1007/s00221-021-06304-4)

Provided by Johns Hopkins University

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