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"Phantom echoes": The role of acoustic and linguistic similarity in false memories as assessed by the DRM Paradigm

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The Deese-Roediger-McDermott (DRM) paradigm has always been a reliable and versatile tool to investigate the phenomenon of false memories in a laboratory setting.

Originally structured using linguistic stimuli, in this paradigm participants are generally asked to memorize a series of lists of words and then to recognize them among newly presented items. False recognitions frequently occur in this phase, as a function of the semantic similarity between the words encoded and the new items.

Recently, this paradigm has been employed with different types of stimuli, such as images. These new approaches have shown that also the visual similarity between stimuli could elicit false memories.

Based on these findings, this work proposes a DRM paradigm using environmental sounds as stimuli to probe the presence of false memories in the auditory modality. To do so, we leverage a data-driven and computational model (i.e., a convolutional neural network) to quantitatively estimate the acoustic similarity between different sounds, starting from an initial pool of two millions of sounds extracted from the Audioset database. Our preliminary results show that false memories in the recognition phase increase for those acoustic stimuli estimated as more similar to the ones presented during the encoding phase. These findings suggest that the acoustic similarity may be a key factor in false memories formation, even in cases where speech sounds are not involved.

If you're submitting a symposium talk, what's the symposium title?

Old and new perspectives on the study of human memory

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?

Yes

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