

Utilizing Aphantasia to Examine Embodied Cognition in the Visual Modality



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The following is an excerpt from a longer piece. For the full text, please scan the QR code.

Abstract

This study investigated the role of mental visual imagery in language processing. Specifically, data was collected on participants with and without aphantasia – a condition wherein no mental visual imagery occurs – and their reaction times were compared in a property verification task. In the study, 39 participants (12 with aphantasia, 27 with mental visual imagery) answered a series of true/false questions focused on visual or motor modalities. Sentences were paired, with the Match condition being a visually-embedded sentence (e.g., coins can be metallic) followed by another visually-embedded sentence (e.g., grapes can be purple), and the Mismatch condition being a visually-embedded sentence (e.g., coins can be metallic) followed by a motor-embedded sentence (e.g., tires can be slashed). In the Mismatch condition, participants with intact mental visual imagery were expected to answer the second, motor-embedded sentence slower than the first, visually-embedded sentence (i.e. experience a switching cost). In the Match condition, participants were expected to answer with an equal or faster speed to the second, visually-embedded sentence. Both of these results would've been in accordance with past research in the field of linguistic embodied cognition (Pecher et al., 2003). On the other hand, participants with aphantasia were not expected to experience a switching cost in the Mismatch condition, nor a priming effect in the Match condition. Findings showed, however, that no switching costs or priming effects were observed for either group. That being said, a statistically significant reaction time difference overall was found between the Aphantasia and Visual Imagery groups, with the Aphantasia group responding faster than the Visual Imagery group in both conditions. Implications for differences in language processing between these two groups therefore merits further investigation, in order to better understand differences in how language is processed across the population.