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The role of body representations in higher order cognition

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Abstract

Previous research using motor dual tasks and TMS has suggested that interference with cortical motor information impacts word reading. This research offers support for theories of grounded cognition by suggesting a functional role of sensorimotor information in conceptual representation. However, motor dual tasks and TMS are limited to partial interference of body representations. To address this, the current electroencephalography (EEG) study induces body illusions to interfere with the broader representation of body information during verb reading. During this task, participants categorized words related to hands or feet while we measured EEG. With spatiotemporal representational similarity analysis (RSA), we demonstrate that sensorimotor information is decodable in normal conditions and is delayed during illusion conditions. Our results suggest that during illusion conditions, sensorimotor information is disrupted by body illusions. This supports theories of grounded cognition for word reading.