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Body-part specific interactions of action verb processing with motor behaviour

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Abstract

The interaction of action-related language processing with actual movement is an indicator of the functional role of motor cortical involvement in language understanding. This paper describes two experiments using single action verb stimuli. Motor responses were performed with the hand or the foot. To test the double dissociation of language-motor facilitation effects within subjects, Experiments 1 and 2 used a priming procedure where both hand and foot reactions had to be performed in response to different geometrical shapes, which were preceded by action verbs. In Experiment 1, the semantics of the verbs could be ignored whereas Experiment 2 included semantic decisions. Only Experiment 2 revealed a clear double dissociation in reaction times: reactions were facilitated when preceded by verbs describing actions with the matching effector. In Experiment 1, by contrast, there was an interaction between verb-response congruence and a semantic variable related to motor features of the verbs. Thus, the double dissociation paradigm of semantic motor priming was effective, corroborating the role of the motor system in action-related language

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