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Grasping the Ungraspable: How do motor actions and motor metaphors interact?

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Abstract: The discovery of mirror neurons has established that the same neuronal populations are active during action execution, and during action observation (Gallese et al., 1996). The neural areas active while observing an action (e.g., kicking) are also active during the processing of concrete action descriptions (e.g., she kicked the ball) (Pulvermuller, 2005). These advances raise an interesting possibility: does the processing of motor metaphors (e.g., they kicked an idea around) also rely on motor function? In our study participants processed literal descriptions of motion as well as motor metaphors while performing either a hand/arm or a foot/leg motor task. We investigated whether motor tasks modulated the processing of sentences (both concrete and abstract) related to a particular body-part, in an effector-specific manner.