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Title

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Permalink

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 48(0)

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Publication Date

2026

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Peer reviewed

Is my textbook on the desk, or on the bookshelf? Impact of enactment and embodiment on forced-choice recognition of object locations

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Abstract

Grounded cognition suggests that motor reactivation impacts memory for manipulable objects. According to the episodic memory literature, motor reactivation improves recall after action during learning episodes. Previously, we found evidence for both grounded and episodic effects, but no interaction despite similarities in the proposed mechanisms (motor reactivation). We hypothesized that an interaction may emerge if testing does not require motor action. Participants learned object-location associations for manipulable (tools) and non-manipulable (animals) stimuli. They either moved (images of) objects to locations, or observed another participant's movements. At test, participants chose between the correct location and a lure 40 degrees away. We replicated both main effects in recall accuracy, but again found no interaction. We suggest that the separation of semantic and episodic contributions is due to the specificity of the motor action involved in training. Motor information retrieved through simulation can support these learning benefits even without physical reactivation (movement).