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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Permalink

<https://escholarship.org/uc/item/92w5t6v5>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 40(0)

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Publication Date

2018

Examining the role of the motor system in the beneficial effect of speaker's gestures during encoding and retrieval

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Abstract

Co-speech hand gesture facilitates learning and memory, yet little is known about the underlying mechanisms. Ian and Bucciarelli (2017) investigated this: participants watched videos of a person producing sentences with or without concurrent hand gestures. In one experiment, participants hands were occupied with an unrelated motor task while watching. Gesture enhanced memory for sentences except when hands were engaged in the motor task, indicating motor system involvement when gesture enhances memory. We investigated when and how the motor system is engaged in service of memory. We replicated the above design and cued listeners at retrieval with the same or different manipulation they experienced at encoding (gesture/motor task). We predict that participants in the same motor task condition for encoding and retrieval will have better recall performance than those in mismatch conditions, suggesting that re-engaging or simulating previous motor experiences is critical in the relationship between gesture and memory.