

UC Merced

Proceedings of the Annual Meeting of the Cognitive Science Society

Title

Phonological and episodic buffer contribution to short-term memory in deaf signers

Permalink

<https://escholarship.org/uc/item/73x0930g>

Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 31(31)

ISSN

1069-7977

Authors

Bavelier, Daphne
Fernandez, Nina
Hirshorn, Elizabeth

Publication Date

2009

Peer reviewed

Phonological and episodic buffer contribution to short-term memory in deaf signers

Elizabeth Hirshorn

University of Rochester

Nina Fernandez

University of Rochester, Boston University

Daphne Bavelier

University of Rochester

Abstract: Deaf individuals who are native users of American Sign Language have been shown to have lower short-term memory (STM) spans than their hearing peers in tasks requiring serial recall of linguistic stimuli. Does this result reflect worse STM skills, or rather different processing biases in the way temporal information is encoded? Temporal information can be maintained through ordered phonological representations in the phonological loop, and through spatio-temporal marking in episodic memory. By systematically removing certain cues (e.g. verbal or spatial), we show that hearing speakers rely more on ordered phonological representations, whereas deaf signers rely more on spatio-temporal marking. Greater reliance on episodic memory in deaf signers is being further examined. This view predicts a greater role for semantic information in STM in deaf signers. Together, these studies indicate different processing biases in how deaf signers and hearing speakers encode information in STM.