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Authors

Pham, Theresa

Archibald, Lisa

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Phonological and semantic processing in short-term memory

Theresa Pham

The University of Western Ontario, London, Ontario, Canada

Lisa Archibald

The University of Western Ontario, London, Ontario, Canada

Abstract

Much research has focused on phonological representation in verbal short-term memory (STM), with less attention paid to semantic representations despite evidence of linguistic long-term memory (LTM) effects. We investigate when phonological and semantic representations are activated in verbal STM: does it occur during retrieval (redintegration account) or there is direct access to language knowledge stored in LTM (language-based account). A probe recognition paradigm was used to test phonological and semantic encoding in verbal STM. Participants studied a list of words and then judged whether a probe word presented after the list rhymed or was synonymous to any item in the word list. Probe recognition was better for semantically processed words than the phonological task, suggesting that semantic encoding was evident at first exposure during encoding rather than a redintegration effect. It appears that semantic knowledge, in addition to and separate from phonological knowledge, is actively maintained in verbal STM.