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# Is word learning of spatial metaphors grounded in perceptual modality?

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## Abstract

Space and time are highly interconnected domains in language and cognition. Here, we ask to what extent the conceptual and perceptual processes of space and time influence how word meanings are learned and extended. To answer this question, we taught 4-5-year-olds and adults a novel word with spatial (i.e., length) or temporal meaning (i.e., duration) and investigated how they learn and extend the word meaning to the other domain. We manipulated two aspects of learning spatial metaphors: (i) direction of extension and (ii) time modality. Children learned the spatial meaning better than the temporal one. Learning the spatial meaning did not overcome the difficulty of learning the temporal meaning. Adults learned both meanings equally successfully. However, they learned the temporal meaning better when they perceived time through visual modality. Once they learned the temporal meaning, they could extend it to the space domain as easily, regardless of time modality.