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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 43(43)

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Publication Date

2021

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Peer reviewed

Lightness and darkness are mentally represented during language processing

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Abstract

A growing evidence from a sentence-picture verification paradigm suggests rapid integration of implied perceptual context during sentence processing. This evidence, however, is usually criticized for not providing a strong test of the mechanisms underlying such integration. We addressed this question in relation to the situation describing different sources of light. We hypothesized that if comprehenders simulate the perceptual state of affairs implied by the sentence, then response times should be faster only when pictures are fully (not partially) congruent with sentence content. Participants (N=200) read sentences like “The sun/the moon is shining onto a horse” followed by pictures depicting mentioned (Experiment 1) or non-mentioned (Experiment 2) objects in either a matching or a mismatching perceptual context (sunny/moony background). Verification times (analyzed with linear-mixed-models) were shorter only when the mentioned (but not non-mentioned) objects matched the perceptual context implied by the sentence. The results are discussed in support of simulation account.