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Proceedings of the Annual Meeting of the Cognitive Science Society

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 45(45)

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Publication Date

2023

Peer reviewed

Red stimuli increases precision in numerosity estimation

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Abstract

The color red has both positive and negative associations. In research, its evolutionary salience has the potential to bias performance through attentional processes. The present study investigated whether color had an effect on numerosity estimation and associated metacognitive judgments. 55 participants estimated the number of dots (7, 17 or 23) in given dot arrays (in green, blue, or red), rated their confidence in their estimates, and finally indicated the magnitude and direction of their estimation errors. Results showed that participants' numerosity estimates were more precise in red dots compared to blue, while green was not different from the other two colors. The stimulus color did not affect the accuracy of numerosity estimations or the metric-error-monitoring performance. We conclude a red advantage over blue in numerosity estimation in terms of estimation precision. We interpret these findings through reduced trial-to-trial variability in visual attention for red stimuli.