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Color and Memory

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Effects of Color on Working Memory Performance

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The intersection of color and working memory is a fascinating but inconclusive domain of cognitive psychological research. Some studies have demonstrated that the color black is found to be the least stimulating in terms of attention and memory (Meacham 2005), whereas colors found in nature are effective in facilitating attention and memory in young children (Dutta & Baruah, 2018). Another study found that only images or image descriptions in grayscale are better for memory tasks and that color memory is poor for working memory exercises (Stjepić, 2021). In each trial of the present study, participants are randomly shown one of two image versions—one color image or one grayscale image—for five seconds. They then complete three primary school-level mathematics questions as a short diversion in attention before being asked questions about the previously-presented photograph as a measure of working memory.

Participants completed 20 trials of this memory task. Our hypothesis was that participants would be able to recall color images more easily than grayscale images in short-term memory tasks.

Results of the present study may provide better knowledge on the intersection of color and memory so that people can strengthen their working memories. Future directions may include examining the influence of color intensity and value on working memory.

keywords: color vision, gray-scale, short-term memory, colors in nature