

Colour constancy in memory and the role of image integrality

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Colour constancy is a relative stability of the perceived colour appearance despite illumination changes. Jin and Shevell (1996) (Jin, E. W., & Shevell, S. K. (1996). Color memory and color constancy. *J Opt Soc Am A*, 13(10), 1981-1991.) described colour constancy phenomena observed in colour memory matching tasks, where the test colour patches displayed with surround of colour patches showed good constancy in recall tasks after viewing the test colour for several minutes. In the present study, we first replicated Jin and Shevell (1996) experiments, and then applied the test-recall tasks with surrounds composed of real scene images. During the experiments, the test/recall patches were displayed with one of the following five surround conditions: 1) a dark surround. 2) a uniform grey surround. 3) a surround composed of colour patches. 4) a real scenic image surround. 5) a randomly cut-and-rearranged scenic image surround. The rationale for the additional two conditions was to test whether the image integrality can affect colour memory, as it did for object recognition (Biederman, I., Glass, A. L., & Stacy, E. W., Jr. (1973). Searching for objects in real-world scenes. *J Exp Psychol*, 97(1), 22-27.). The results show that good colour constancy in memory always comes into effect for all surrounds except the dark surround. However, the extent of constancy still varies with different surround conditions.

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