

Color Categorical Perception and Color Metrics

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Color categorical perception (CP) refers to the idea that pairs of colors belonging to different categories can be discriminated faster and/or more accurately than pairs of colors belonging to the same category. Unlike studies investigating the CP of speech sounds, which are usually specified using a physical metric, research into color CP typically uses stimuli specified in perceptual metrics. The most widely used perceptual color metric, and the one considered to show the highest degree of perceptual uniformity, is the Munsell system (Munsell, 1905; Newhall, Nickerson & Judd, 1943). It is suggested here that specifying stimuli using perceptual color metrics presents some significant challenges for research into color CP. First, much experimental evidence for color CP rests on the assumption that the perceptual metrics used are uniform. But research suggests that this is not the case (e.g. Indow, 1988, Indow & Kanazawa, 1960). This implies that much of the evidence for color CP can alternatively be interpreted as evidence of irregularities in the color metrics used. Second, there seems no reason to suppose that color CP is not 'built into' the color metrics used. This presents additional difficulties for some theories of color CP.

References

- Indow, X. & Kanazawa, K. (1960). Multidimensional mapping of Munsell colors varying in hue, chroma, and value. *Journal of Experimental Psychology*, 59, 330-336.
- Indow, T. E (1988). Multidimensional studies of Munsell color solid. *Psychological Review*, 95(4), 456 – 470.
- Munsell, A. H. (1905). *A Color Notation. An illustrated System Defining All Colors and their Relations by Measured Scales of Hue, Value, and Chroma*. Boston.
- Newhall, S. M., Nickerson, D. & Judd, B. D. (1943). Final report of the O.S.A. subcommittee on the spacing of the Munsell colours. *Journal of the Optical Society of America*, 33(7), 385-418.