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Human colour perception. A psychophysical study of human colour perception for real and computer-simulated two-dimensional and three-dimensional objects.

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Authors	Delay periods	Exposure time	No. of test colours	Matching paradigm	# Obs.	Colour memory shifts
Collins (1932)	15 sec	5 sec	4 (monochromatic)	matching of wavelengths	6	yellow and blue were reproduced more accurately than red and green
Hamwi & Landis (1955)	15 min, 24 h and 65 h	105 sec	10 (colour chips from the Color Harmony Manual)	selection out of 672/168 colour chips with different hue, blackness and whiteness	12	green and greenish blue were remembered worst; generally, colour memory tended to gain in blackness
Newhall et al. (1957)	simultaneous and 5 sec	5 sec	25 (Munsell colour chips)	adjustment of colorimeter	3	colours were remembered more saturated and slightly lighter
Nilsson & Nelson (1981)	0.1 – 24.3 sec	1 sec	16 (monochromatic; equated saturation and brightness)	hue adjustment	4	violet, green-blue and yellow-orange were reproduced most accurately shift tendency: blues became greener and reds became yellower
Uchikawa (1983)	simultaneous and 3 sec	1 sec	7 (varying in hue and saturation)	more saturated/less saturated judgement	2	most colours were remembered more saturated
Boynton et al. (1989)	1 sec	10 sec	55 orange OSA colour samples	same/different judgement	2	colours within one category were more difficult to judge
Jin and Shevell (1996)	10 min	60 sec	6 (3 simulated Munsell colours under 2 different illuminants)	hue and saturation adjustment	24	inconsistency regarding saturation, some colours were remembered more saturated and others desaturated; inaccuracies were also found for hue
Francis & Irwin (1998)	0.1, 1.0 and 10.0 sec	0.5 or 1.5 sec	more than 100 colour pairs, which differed in one of their RGB values only (either R, G or B)	same/different judgement	18	more accurate memory for colours in context
Perez-Carpinell et al. (1998)	15 sec, 15 min and 24 h	10 sec	10 (colour chips)	selection out of an array of 20 Munsell colour chips	100	orange was remembered most accurately and yellow, light green, blue and pink worst generally, dark colours tended to be remembered darker and medium-light and light colours even lighter
Epps & Kaya (2004)	5 sec	5 sec	4 (Munsell colour chips)	selection out of an array of 10 Munsell colour chips	40	yellow was remembered most accurately, followed by purple, yellow-red and green; most errors arose of the mismatch of hue; chroma and value were matched mostly correctly
D'Ath et al. (2007)	immediately after, 1 h and 1 week	10 sec	12 (differed in hue only)	hue adjustment	96	orange and purple were remembered most, and chartreuse and turquoise least accurately
Ling & Hurlbert (2008)	60 sec	10 sec	13 (printed colours)	selection out of an array of 16 surface colours, which varied in one attribute only	7	colours tended to be remembered more saturated

Table 4.3.1-1. Selection of studies that investigated colour memory over time.