Supplementary Material

Effect of overlaid luminance contrast on perceived color contrast: shadows enhance, edges suppress

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Supplementary Figure 1

Psychometric functions under the binocular viewing conditions across 3 spatial frequencies and 5 subjects are shown. The contrast for the luminance mask was fixed as 10x detection threshold. The PSE contrast relative to the physical contrast for the average and individual data is shown in Figure 2 and 3. The amplitude of the curve indicates the probability (percentage of trials) that subjects chose the color only contrast (reference stimulus) to be higher than the contrast for the color test of the plaid stimulus. The point of the perceptual subjective equality (PSE) is the contrast at which the curve crosses the 0.5 probability line (dotted line). Solid lines are logistic fits to the data points (solid circles). Five different gray scales indicate different contrast levels for the color test (i.e., 2x, 4x, 6x, 8x, & 10x threshold). Error bars are SEs derived by bootstrap analysis.
Supplementary Figure 2

Psychometric functions under the monocular (blue symbols) and dichoptic (red symbols) conditions across 3 spatial frequencies and 3 subjects are shown. The PSE contrast relative to the physical contrast for the average and individual data is shown in Figure 2 and 3. All symbols are as for Supplemental Figure 1.
Supplementary Figure 3

Psychometric functions under the binocular (green symbols), monocular (blue symbols) and dichoptic (red symbols) viewing conditions at 0.375 and 1.5 cpd at 2 Hz for each of the three subjects (YJK, AR, & BJ) are shown. The contrast for the color mask contrast was fixed as 6x detection thresholds, and the luminance test contrast was varied shown in different color scale (2.5x, 5x, 10x, & 20x detection thresholds). The PSE contrast relative to the physical contrast for all conditions is shown in Figure 6.
Supplementary Figure 4.

The individual data for the four subjects used to calculate the averages in Figure 8a and Figure 8b. All symbols areas for Figure 8. Error bars are smaller than the symbols.
Supplementary Figure 5.

Individual data (the ratio of PSE/test color contrast) for two subjects (YJK and AR) plotted for the control condition with a static stimulus (solid green) and the corresponding original condition (previously shown in Figure 4a) with a sinusoidal 2 Hz modulation (white with green outline). Both conditions use the same Gaussian temporal envelop ($\sigma = 125$ ms). Error bars are as for Figure 4a.