

motion

Grayer than gray: Achromatic contrast of perceptually lagging flashed object is preserved.

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A yellow line flashed on a green bar moving on a black background, is seen as a red line lagging the green bar (Nijhawan, 1997). Cavanagh (1997) speculated that a dark line flashed on a moving green bar, seen lagging the green bar ought to appear 'blacker than black.' We explore this conjecture.

Observers viewed a line of medium luminance flashed on either a darker or a lighter bar moving on a background equal in luminance to the line. Intriguingly, the flashed line didn't disappear against the equal luminance background. Observers adjusted (ascending and descending trials) the luminance of a flashed comparison line until it matched the perceived lightness of the lagging flashed line. Matches revealed that the contrast polarity of the flashed line relative to the moving bar was carried over when the flashed line was seen against the background.

Thus, a flashed line can be rendered visible against a background of equal luminance. If the flashed line is defined by a luminance decrement (increment) relative to the moving bar, it will be seen as a dark (light) line against a background of equal luminance.

Nijhawan, R. (1997) *Nature* 386, 66-69.

Cavanagh, P. (1997) *Nature* 386, 19-21.