

## Perceptual Memory for Intermittent, Color Rivalrous Images

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When rivalrous stimuli containing luminance contrast are presented continuously to each eye, the percept alternates over time between the two stimuli. This perceptual alternation can be slowed, and even stopped, if the same stimuli are presented intermittently (Leopold et al. 2002). A basic question is whether the stabilized percept, which reveals perceptual memory between intermittent presentations, reflects a persisting dominant response from one eye (Chen & He, 2004; Pearson & Clifford, 2004) or persistence of what is consciously seen (the percept). This study examines binocular percepts resulting from rivalrous equiluminant chromatic gratings, which give rise to form rivalry between the two eyes but with the colors from both eyes bound to parts of the dominant form (perceptual misbinding of color to form; Hong & Shevell, 2009). A 2 cpd square-wave vertical grating was presented to one eye and a tooth-shaped vertically oriented grating (top half of grating phase-shifted by one-half cycle relative to bottom half) to the other eye. Stimuli were equiluminant (e.g., purple/white in one eye, green/white in the other eye). Initially, the stimuli were presented for several seconds and then extinguished. Then they were presented for 0.5 sec every 2.5 sec (0.5 sec on, 2 sec off) for 1 minute. In one condition, stimuli were not swapped between eyes and in the other condition stimuli were swapped between eyes after each 0.5 sec presentation. In both conditions, when a binocular, misbound percept (misbinding of color to form) was the last percept seen during the initial viewing period, the misbound percept was stabilized on later 0.5 sec presentations. This shows that static, binocularly rivalrous stimuli establish a perceptual memory during the 2-sec OFF period at the level of the binocularly integrated percept, not at the level of retinotopically specific eye-dominance.

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