

Adding blue or yellow sector onto Benham's top

Chiemi MIYATA¹ Kaori SHOJI¹ Ken KIHARA¹ Sakuichi OHTSUKA¹
and Hiroshi ONO²

¹Graduate School of Science and Engineering, Kagoshima University
²Department of Psychology, York University, Toronto, Canada

Abstract

Schramme showed that the S and (M+L) cone opponent color mechanism is responsible for seeing a yellowish apparent color at the transition of black to white and bluish one at the transition of white to black when Benham's top is spinning [1]. To better understand this mechanism, we investigated the effects of adding blue or yellow sector at the transition edges (Fig.1A). Nine observers who had normal color vision were asked to judge whether the bluish tint component was greater in the experimental stimulus than in the spinning Benham's top. We found that (1) the stimulus with yellow (or blue) colored sectors at black to white (or white to black) transitions induced bluish (or yellowish) color at both transitions, and (2) the stimulus with blue (or yellow) colored sectors at black to white (or white to black) transitions induced highly saturated bluish-color at the white to black edges but induced same amount of yellowish-colored arcs at the black to white edges compared with that of normal Benham's top (Fig.1B). (1) and (2) together showed that yellow sector affects percepts at both transitions of black to white and white to black, but the blue sector affect only at the transition of white to black(Fig.1C).

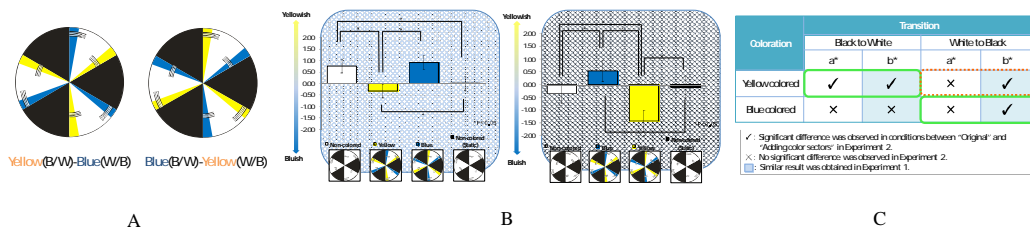


Figure.1 Figures used in the poster.

References

- 1) C. von Campenhausen, et al., "100 years of Benham's top in colour science," Perception, vol. 24, no. 6, pp. 695 - 717, 1995.