

Focus Size of Attention: Exploring the Focus Hypothesis on the Collinear Masking Effect in Visual Search

Ching-Wen Chiu and Li Jingling

Graduate Institute of Neural and Cognitive Sciences, China Medical University

In searching for an item in our visual field, a salient or a behaviorally relevant item usually captures our attention. However, Jingling and Tseng (2013) reported an interesting finding that a salient target is actually more difficult to identify than a non-salient target. This novel phenomenon was observed in a specific search display, which was filled with regularly aligned small bars. The salient structure was formed by several bars collinear to each other. When the target was on the salient collinear structure, search was more difficult than when the target was in the background, which is called collinear masking effect. Since the target was a small bar while the collinear structure was longer, they may elicit different focus size and disagree to each other. The goal of this study was to test whether the disagreement on focus size can explain the collinear masking effect. We manipulated the size of the target and the size of the collinear structure systematically. Results of five experiments consistently showed the collinear masking effect regardless of the size of the target. These results argue against the focus size hypothesis. We thus conclude that the collinear masking effect might be associated with other perceptual properties rather than the size of the attention focus.

Keywords: *attention focus, attentional capture, perceptual grouping, salience, visual search*