Departmental Seminar

Concealed by the Most Salient Item in Visual Search

11:30 a.m. – 12:30 p.m. │ November 28, 2018 (Wednesday)
Rm 813, 8/F, The Jockey Club Tower │ Centennial Campus │ The University of Hong Kong

Dr. Jingling Li

Associate Professor
Graduate Institute of Biomedical Sciences
China Medical University
Taiwan

Abstract

Visual search is usually more efficient if the searched target was a salient item or on a salient location. However, our laboratory found a counterintuitive phenomenon that a target is actually more difficult to find if it was placed on a collinear salient structure in visual search, which is called the collinear masking effect. The collinear salient structure is the "super salient" item created according to the V1 model of salience by combining continuous perceptual grouping and feature contrast. Our studies showed that such a super salient item actually mask a local target not via perceptual salience but via collinear grouping. The eye movement study found that the overlapping target induced less impulsive saccade than a target in the background. Meanwhile, a ERP study found that the overlapping target reduced N2pc signals compare to the non-overlapping targets, suggesting the masking effect is perceptual. Also, the fMRI data showed that the critical region for the masking effect was on middle occipital areas, while participants also activate their left superior parietal areas which are associate with distractor suppression. Our work thus reveals the power of perceptual grouping that could lead to not only attentional capture but also camouflage.

~All are Welcome~