

The University of Hong Kong  
Department of Psychology

*Departmental Seminar*

***When and Why does Crowding Occur?***

Date: October 24, 2013 (Thursday)  
Time: 11:30 a.m. – 12:30 p.m.  
Venue: Room 8.13, 8/F The Jockey Club Tower, Centennial Campus,  
HKU  
Speaker: Dr. Peter Bex  
Senior Scientist, Schepens Eye Research Institute  
and  
Associate Professor, Department of Ophthalmology,  
Harvard Medicine School

Outside the fovea, highly visible objects that are easily identified in isolation can be rendered unrecognizable by nearby features, an effect known as crowding. Given that the vast majority of the visual field is extra-foveal and that natural scenes are usually packed with features, our vision is dominated not by contrast sensitivity or acuity, but by crowding. Competing theories posit that crowding represents the limits of attentional resolution, some form of positional substitution or an averaging of features within large receptive fields. I will describe a series of studies showing that crowding modifies an object's appearance once objects have entered phenomenal awareness and is not a substitution among neighboring features. While attention can modulate the level of crowding, equivalent noise analysis shows that crowding and attention are dissociable processes. A computational model is developed in which crowded perceptions represent mean image statistics within an eccentricity-dependent region. A reverse correlation paradigm is then used in an attempt to predict when crowding is likely in natural scenes.