

The University of Hong Kong
Department of Psychology

Departmental Seminar

*Visual perceptual learning and its specificity and transfer:
A new perspective*

Date: February 27, 2013 (Wednesday)
Time: 1:30 – 2:30 p.m.
Venue: Social Sciences Chamber, 11/F, The Jockey Club Tower, Centennial Campus, HKU
Speaker: Professor Cong Yu
Department of Psychology and Peking-Tsinghua Center for Life Sciences,
Peking University

About the Speaker:

Professor Cong Yu is a world-known researcher specialized in vision research and perceptual learning. He is the recipient of several most prestigious research awards including “Hundred Talents Program (中科院百人计划)”, “Outstanding Young Scientist Foundation (自然科学基金委国家杰出青年科学基金)”, and “Chang Jiang Scholars (教育部长江学者特聘教授)”. He is now the professor of the Department of Psychology at Peking University and Peking-Tsinghua Center for Life Sciences.

Abstract:

Visual perceptual learning is known to be location and orientation specific, and is thus assumed to reflect the neuronal plasticity in the early visual cortex. However, in recent studies we created “Double training” and “TPE” procedures to demonstrate that these “fundamental” specificities can be decoupled from perceptual learning and that learning can completely transfer to a new location or orientation. We proposed a rule-based learning theory to reinterpret perceptual learning and its specificity and transfer: A high-level decision unit learns the rules of performing a visual task through training. However, the learned rules cannot be applied to a new location or orientation automatically because the decision unit cannot functionally connect to new visual inputs that are likely suppressed by multi-session training and focused spatial/feature attention on trained location and orientation. It is double training and TPE training that reactivate these new inputs, so that the functional connections can be strengthened to enable rule application and learning transfer. I will report new experimental evidence that will provide further insights into the mechanisms underlying perceptual learning and its specificity and transfer.