

The University of Hong Kong  
Department of Psychology

*Departmental Seminar*

***Sensory substitution, multisensory plasticity,  
and the third kind of “qualia”***

Date: December 2, 2013 (Monday)

Time: 3:00 p.m. – 4:00 p.m.

Venue: CPD-2.42, 2/F, Central Podium Level, Centennial Campus, HKU

Speaker: Professor Shinsuke Shimojo  
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“Qualia” to some refers to the absolute, unique quality of a conscious sensory experience, which may not be “explained away” by neurophysiology. Whereas we do not endorse to the qualia as a “hard” (i.e. impossible in principle) problem for science, we still agree that the current sensory sciences fail to critically characterize such unique quality of sensory experiences.

We aim to find insights in the latest progresses of sensory substitution. The “vOICE” is one of such devices translating visual into auditory inputs for blind people. There are some superusers who claim “visual” experiences. Moreover, some of them showed neural activity in the visual cortical areas in fMRI, when engaged in a variety of tasks relying on this type of device.

Our strategy is to come up with a brief list of psychophysical and neuroscientific criteria for “vision-like” processing, and to search for empirical evidence, including (1) cortical mapping of space via the device, (2) accomplishment of perceptual constancy, and (3) intrinsic (synesthesia-like) crossmodal mapping. Another approach we take is to fully utilize intrinsic crossmodal mappings (correspondences) to make the training and perception via the device automatic and effortless.

The results suggest that qualia, if still want to use such a word, should be understood with regard to adaptive behavior and automatic processing. Moreover, what such training/experience accomplishes should be characterized best as the third kind of qualia. Enrichment of sensory experiences due to intrinsic and associative mapping provides scientists, engineers and artists with ample opportunities.