

The University of Hong Kong  
Department of Psychology

*Departmental Seminar*

***Being “social” - Interpersonal body and neural synchronization as a marker of implicit social interaction***

Date: December 2, 2013 (Monday)

Time: 11:30 a.m. – 12:30 p.m.

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

Speaker: Professor Shinsuke Shimojo

Gertrude Baltimore Professor of Experimental Psychology

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There are three functional levels of the brain being “social” which are dissociable. First level is that of evolution. Sensory, cognitive and motor organs may have evolved optimally for specific social functions. An intriguing example would be the possibility that the human-type trigonometric color vision system possibly had evolved to optimally detect complexion changes in the human face as an emotional display (The skin color hypothesis; Changizi et al., Biol. Letters, '06). The second level is the brain's extra-sensitive tuning to social stimuli (such as human faces, gazes and voices), and this has been the mainstream approach. The third level is the most directly social, yet the most challenging - it is where two brains are interacting real-time via some bodily communication (either implicitly or explicitly). In the current presentation, I will provide some evidence at this level, i.e. interpersonal connectivity between two brains as a implicit biological basis of social functions.

One may have experienced his or her footsteps unconsciously synchronize with the footsteps of a friend while walking together, or heard an audience's clapping hands naturally synchronize into a steady rhythm. However, the mechanisms of body movement synchrony and the role of this phenomenon in implicit interpersonal interactions remain unclear. We aimed to evaluate unconscious body movement synchrony changes as an index of implicit interpersonal interaction between the participants, and also to assess the underlying neural correlates and functional connectivity among and within the brain regions (Yun, et al., Sci. Reports, '12). We found that synchrony of both fingertip movement and neural activity between the two participants increased after cooperative interaction. These results suggest that the increase of interpersonal body movement synchrony via interpersonal interaction can be a measurable basis of implicit social interaction. The paradigm provides a tool for identifying the behavioral and the neural correlates of implicit social interaction.