

The University of Hong Kong
Department of Psychology

Departmental Seminar

The earliest neural correlate of consciousness

Date: August 16, 2013 (Friday)

Time: 11:30 a.m. – 12:30 p.m.

Venue: Room 8.13, 8/F The Jockey Club Tower, Centennial Campus,
HKU

Speaker: Dr. Urte Roeber
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School of Health and Human Sciences
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During binocular rivalry, a supra-threshold stimulus presented to one eye intermittently disappears for several seconds. In order to explore the fate of such an invisible stimulus, I investigated neural activity following transitions from binocular rivalry stimuli to binocular fusion stimuli by changing the stimulus viewed by one eye. Depending on the prevailing percept, these changes either elicited a change in perception or did not. This procedure allowed for time-locked event-related potential analyses to physically identical events differing in their perception. When a stimulus changed without awareness, similar but attenuated neural responses were found compared to when a stimulus changed with awareness. The onset of the attenuation, however, differed depending on the specific stimulus dimension that was changed: with changes in stimulus orientation or shape awareness-dependent modulations began at about 100 ms (P1), with changes in color at about 200 ms (N1), and with changes in motion at about 220 ms (P2). Despite the differences in onset times, source activity correlated with perception for all changes was in similar ventro-lateral occipito-temporal networks. This suggests that visual awareness is mediated by dimension-unspecific superior cortical areas but its effects follow a dimension-specific time-course.