



Department of Psychology
The University of Hong Kong

香港大學心理學系



State Key Laboratory of Brain and Cognitive Sciences
(The University of Hong Kong)
腦與認知科學國家重點實驗室 (香港大學)

Departmental Seminar

Neurocognitive Mechanisms of Implicit Biases - Fear Generalization of Conditioned Facial Features in Absence of Contingency Awareness

11:30 a.m. – 12:30 p.m. | October 24, 2019 (Thursday)

Rm 813, 8/F, The Jockey Club Tower | Centennial Campus | The University of Hong Kong



Professor Markus Junghöfer

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Abstract

Generalized social biases may partly be rooted in repeated public presentations of single criminal individuals. Here we investigated the neurocognitive mechanisms of implicit biases based on facial “generalization features” (GF). In a MultiCS conditioning phase, 32 facial identities were either always paired with an aversive scream (CS+) or remained unpaired (CS-). Importantly, CS+ and CS- systematically differed regarding their ratio of eye distance and mouth width – the relevant GF. In pre- and post-conditioning phases, all CS and 32 generalization stimuli (GS) – different faces that either shared the GF of CS+ or CS- faces – were presented. Pair comparisons with various “Fake-GF” revealed complete absence of GF-US contingency awareness. In 2x2 ANOVAS, we observed main-effects of GF (CS+GF vs CS-GF) and interactions of GF and Stimulus Type (CS vs. GS) on valence-, arousal-, and US-expectancy ratings. In line with higher unpleasantness-, arousal- and US-expectancy-ratings for faces with the CS+GF, MEG source-estimations showed three significant clusters in temporo-occipital and anterior temporal brain regions with stronger neural responses to CS+ and GS+ compared to CS- and GS-, respectively. Three additional clusters in dorsal frontal areas revealed reverse effects, consistent with a reduced GS+ inhibition by these regions. Our data reveal a rapid development of implicit biases and show that early amplifications of “emotional attention” towards the CS+ in visual brain regions generalize to novel individuals sharing relevant facial features.

About the Speaker

Professor Markus Junghöfer works at the Institute for Biomagnetism and Biosignalanalysis in the University of Münster. His research interest includes psychophysiology of emotion and attention, temporal dynamics of brain and behavior, psychophysiology of fear, anxiety and anxiety disorders, as well as signal processing of high density EEG and MEG data. To answer his research questions, he employs MEG, EEG, Combined fMRI / EEG, TMS, tDSC, and other performance measures.

~All are Welcome~

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