

Departmental Seminar

Psychophysics of Metacognition

4:30 p.m. – 5:30 p.m. | January 18, 2019 (Friday)

Chamber, 11/F, The Jockey Club Tower | Centennial Campus | The University of Hong Kong



Dr. Kiyofumi Miyoshi

Visiting Lecturer

Department of Psychology

The University of Hong Kong

Abstract

Humans and other animals make decisions based on ambiguous sensory and/or mnemonic information. Given this fundamental uncertainty, a metacognitive ability to construct confidence for one's own decision is critical for guiding adaptive behavior. In this talk, I would introduce my psychophysical investigations on confidence construction processes. The focus is on a recently reported computational dissociation between objective 2-AFC and subjective confidence. While objective 2-AFC is made by evenly considering two sources of information, subjective confidence is determined only by a stronger signal with a weaker signal disregarded. This winner-takes-all-like confidence construction had been considered as a suboptimal heuristic, which provides computational simplicity at the expense of metacognitive accuracy. However, surprisingly, my signal-detection theory (SDT) simulations showed that, under reasonable ranges of parameters, the winner-takes-all consideration of one signal can provide higher metacognitive accuracy than the even consideration of two signals. Furthermore, the pattern of simulated data showed a close resemblance to empirical 2-AFC recognition memory data, which strongly validates the current SDT-based discussion. I would say it is reasonable for us to have the winner-takes-all confidence heuristic, which excels both in computational simplicity and metacognitive sensitivity. Sometimes, one is better than two actually.

~All are Welcome~

Enquiry: kiyofumi@hku.hk | Dr. Kiyofumi Miyoshi