The University of Hong Kong
Department of Psychology

Departmental Seminar

Motor Experience Modulates Perceptual Representation of Objects: The Case of Chinese Character Recognition

Date: June 7, 2012 (Thursday)

Time: 11:30 a.m. to 12:30 p.m.

Venue: Room 624, Knowles Building, HKU

Speaker: Mr. Ricky Tso
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Holistic processing and left side bias are both behavioral markers of expert face recognition. In contrast, expertise in Chinese character recognition involves left side bias but reduced holistic processing (Hsiao & Cottrell, 2009). Here I hypothesized that this reduction in holistic processing may be related to writing rather than reading experience. In Study 1, I tested Chinese literates who could read and write Chinese characters fluently (Writers), and Chinese literates who had limited writing practices and thus had reading performance far exceeding their writing ability (Limited-writers). I found that Writers perceived Chinese characters less holistically than Limited-writers. In contrast to what previous research suggested, reduction in holistic processing in Chinese readers depended on writing experience instead of reading performance. In addition, reading performance was affected by font familiarity and context for Limited-writers but not Writers. Writing experience seems to enhance analytic processing and awareness of orthographic components of Chinese characters, which may in turn facilitate reading in unfamiliar fonts. By contrast, both Writers and Limited-writers showed a similar level of left-side bias in processing symmetric Chinese characters, suggesting that left-side bias is a consistent expertise marker for orthographic processing uninfluenced by writing experience. In Study 2, I investigate the developmental trend of holistic processing in Chinese character recognition and its relationship with reading and writing abilities by testing Chinese children who were learning Chinese at a public elementary school in Hong Kong on these abilities. I found that the holistic processing effect of Chinese characters in children was reduced as they reached higher grades; this reduction was driven by enhanced Chinese literacy rather than age. In addition, I found that writing performance predicts reading performance through reduced holistic processing as a mediator. Overall, the results of the two studies suggest that writing hones analytic processing, which is essential for expert Chinese character recognition, and in turn facilitates learning to read in Chinese. This study is also the first to identify Limited-writers as a window onto basic processes of reading.