

Brain Signatures of Chinese Reading Acquisition

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Date: 20 April 2017 (Thu)

Time: 10:00 – 11:30 a.m.

Venue: GH803, PolyU

Abstract

Studies of alphabetic writing systems have suggested that learning to read is a process to uncover how orthographic forms encode the spoken language. However, writing systems vary in the orthographic depth, which may result in developmental differences in finding the optimal grain size for establishing efficient mappings between orthography and phonology. It has been well recognized that humans could extract regularities from the flow of visual and auditory stimulation. A growing body of evidence has suggested that Chinese characters are learned via a universal statistical learning mechanism, which assumes the repeated exposure to the sublexical orthographic forms is the key for the development of orthographic knowledge. In this talk, I will review a series of behavioral and neuroimaging studies to investigate how children acquire Chinese orthographic knowledge, such as radical position, phonetic regularity and consistency, in learning to read Chinese characters. These findings also suggest a set of ERPs markers, such as N170, P200, and N400, may be used to index the proficiency of orthographic processing in children with typical or atypical reading development. The potential applications of the early identification of dyslexic children and the evaluation of reading remediation will be discussed.