

EdUHK Tin Ka Ping Education Fund Talk Series

Brain signatures for the statistical learning of Chinese reading acquisition

13 March 2024 (Wed) | 11:00 am – 12:00 nn | English
Hybrid (D2-LP-09 , EdUHK Tai Po Campus or via Zoom)

Humans are known to continuously extract regularities from the flow of visual and auditory stimulation to perceive the world's structure, decrease uncertainty, and reduce information load. The Bimodal interactive activation model (BIAM), assumes that the statistical learning mechanism is the core ability to extract orthographic regularities to map onto the phonological (i.e., phoneme and rime) units within words. As a consequence, literacy may also shape speech processing. Studies of alphabetic writing systems have demonstrated the effects of bi-directional mapping consistency between orthography and phonology in both visual and spoken word recognition. However, writing systems vary in orthographic depth, which may result in developmental differences. Chinese is characterized as an ideographic writing system with deep orthography.

In this talk, the speaker 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. Meanwhile, the neural evidence for the homophone density and orthographic consistency effects in spoken word recognition also suggests that literacy experience fundamentally changes the preexisting phonological representation in the mental lexicon. This cross-linguistic evidence supports that, although languages naturally differ in their scripts and orthographic principles, a reading model can be universal to reflect the common cognitive operations across writing systems.



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