



Department of  
Linguistics and Modern Languages

語言學及現代語言系

# How Does The Human Brain Predict Upcoming Semantic Content And Reason About Intentional Meaning? (in Mandarin)

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**Date:** April 2, 2024 (Tuesday)

**Time:** 4:30pm - 6:15pm (Hong Kong Time, UTC +8)

**Venue:** Room 306, Lee Shau Kee Building,  
The Chinese University of Hong Kong



## Abstract

The human brain is remarkably efficient in language comprehension, capable of actively predicting upcoming semantic content and inferring implied communicative intentions. A fundamental question in cognitive neuroscience of human communication is understanding the neural dynamics that support the formation of these internally generated semantic/pragmatic interpretations. Although we know this process relies on a hierarchy of increasingly abstract representations and involves multiple cortical areas, the way these different system levels interact to achieve efficient comprehension is not fully understood. Our series of studies have shown that both semantic anticipation and intention interpretation consume time or cognitive resources, and are flexibly operated based on their relevance to the current communication task; the intentional level of meaning is not only (at least in some situations) inferred from the intermediate-level representation generated during understanding but also mutually influences this intermediate representation later on; the coupling of the right TJP with other control, memory, and sensory brain areas plays a critical role in the processes of semantic anticipation and intention comprehension. These results suggest the critical role of active top-down generation processes in language comprehension and elucidate their specific cognitive processes and neural foundations.

## Speaker

Full Professor and PhD Supervisor of the Institute of Psychology, Chinese Academy of Sciences (CAS). I obtained my PhD at the Institute of Psychology, CAS, and worked at the F.C. Donders Centre for Cognitive Neuroimaging (The Netherlands) for two years as a postdoctoral fellow. My research mainly focuses on the cognitive and neural mechanisms underlying the understanding of semantic and intentional meanings conveyed by language. I am particularly interested in the mechanisms of spoken language understanding and its capability enhancement. Studies utilizing EEG and fMRI technologies have been published in journals such as *Journal of Memory and Language*, *Brain and Language*, *Journal of Cognitive Neuroscience*, *Psychophysiology*. Related research has received financial support from various funding bodies, including National Natural Science Foundation of China, Youth Innovation Promotion Association of CAS, and the Science and Technology Commission.

All Are Welcome

Enquiries

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