



My Heart in Your Mind: Neural Correlates of Trait Inference

Public defence to obtain the degree of

DOCTOR IN PSYCHOLOGY
Field of Study: Psychology and Educational Sciences

of

Mr. Ma Ning

which will take place on

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promotiezaal building D
room D.2.01,
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Situation of the dissertation

The four fMRI studies in this thesis were focused on investigating the neural correlates of trait inference. The first two studies explored the neural correlates of spontaneous and intentional trait inference by using either trait-consistent or trait-inconsistent behavioral sentences. The third study investigated different brain areas recruited for behavior understanding and trait identification by using a factorial design, in one half of the trials (behavioral condition), the agent was engaged in a simple goal-directed behavior, whereas in the other half this description was absent. The last study applied fMRI adaptation paradigm to localize trait representation in mPFC. The findings revealed that the TPJ and mPFC are two crucial brain areas in trait inference. Specifically, the TPJ is mainly activated for understanding goal-directed behavior, while the mPFC is mainly recruited for trait identification. Moreover, the results of the fMRI adaptation study demonstrated for the first time that a trait code is represented by an ensemble of partially overlapping neurons in the ventral mPFC, although it is still possible that an adaptation effect for complex social knowledge does not reflect so much a common trait code (as in perceptual domains), but rather a common trait-inference process. Nevertheless, this finding opens a novel perspective on the functionality of the mPFC in social mentalizing and provides inspiration for research on trait inferences in the future.

Curriculum Vitae

Ning Ma was born on February 10th, 1982 in Tianjin, China. After his secondary education, he studied Psychology at Tianjin Normal University in China. He received his bachelor's degree in 2004. After that he started his study for European Master Program of Exercise and Sport Psychology in Katholieke Universiteit Leuven (KUL) in Belgium. In 2006, he finished his study in KUL and received his master degree. He started to study at Vrije Universiteit Brussel as a Ph.D student in 2007. Under the supervision of Prof. F. Van Overwalle, he mainly investigated the neural correlates of trait inference and published three articles as the first author in internationally peer-reviewed journals when he submitted his Ph.D in 2012.