



Department of Psychology

The University of Hong Kong

香港大學心理學系

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Departmental Seminar

The Role of Cerebellar Structure and Cerebral-Cerebellar Connectivity in Neuroticism among Healthy Adults



Ms. Dong Na

MPhil student

Department of Psychology

The University of Hong Kong

2:00p.m. – 3:00p.m.

Function Room, 11/F

The Jockey Club Tower

Centennial Campus

The University of Hong Kong

About the talk:

Neuroticism refers to a personality trait characterized by a tendency to experience negative emotions such as anxiety, depression, and it is strongly associated with anxiety disorders. The cerebellum is implicated in affective processing, yet evidence linking cerebellar features to neuroticism and anxiety disorder remains unclear. Using the data from the Human Connectome Project health young adult project, the current study sought to explore the association between cerebellum and neuroticism in predicting anxiety among healthy adults. Specifically, we applied XGBoost to compare neuroticism-only baseline model with cerebellar-augmented models to evaluate the predictive performance of the model on anxiety. We further stratified the analyses by negative affect (i.e., anger, fear, sadness) to examine their conditional predictive utility. Although cerebellar features did not improve the predictive value of the neuroticism-only model for anxiety, specific cerebral-cerebellar circuits, including connections between the anterior cingulate cortex, insula, and the right dentate nucleus and lobules VI and X, offered incremental prediction specifically for individuals with high aggression. These findings suggest that the cerebellum's influence on anxiety is conditional rather than universal, emerging specifically in highly aggressive states among healthy adults. Overall, incorporating cerebellar features adds predictive value for anxiety symptoms beyond trait neuroticism in adults with certain negative affect.

About the speaker:

Na Dong is an MPhil candidate under the supervision of Professor Charlene L.M. Lam. She obtained her BA in Neuroscience from the Trinity College Dublin and MSc. in Advanced Neuroimaging from the University College London. Her research interests include anxiety, memory, and emotion regulation.

Zoom Meeting (For participants who couldn't attend the Seminar in person)

<https://hku.zoom.us/j/94348516649?pwd=aZB4kN62xcD2sOiC47o3oWHWW0zKTW.1>

Meeting ID: 943 4851 6649 | Password: 567558

~ All are Welcome ~

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