Department of Psychology
The University of Hong Kong
香港大學心理學系

Departmental Seminar

A Dimensional Approach to Neurodivergence in Attention Control: Identifying Functional and Structural Signatures of Atypical Attention

11:00 a.m. – 12:00 n.n. | June 4, 2024 (Tuesday)
Rm 813, 8/F, The Jockey Club Tower | Centennial Campus | The University of Hong Kong

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Abstract

Attention control and specifically distractor suppression is a fundamental process that is called upon in a variety of scenarios. In fact, different scenarios might also depend on our inherent 'inability' to suppress distractors (imagine crossing the road while focusing on your phone…) or our ability to utilise different modes of attention control (e.g., static vs. dynamic). It is therefore not surprising that accumulating evidence points to attention control atypicality in a variety of neurodivergent conditions such as ADHD, autism and even psychosis (and the broader spectrum of their traits in neurotypical participants). Nevertheless, previous reports have been mixed in the direction of these effects, highlighting scenarios of both beneficial and detrimental outcomes (using a categorical approach to these conditions). Recent work in my lab attempts to delineate the specific effect autism, ADHD and psychosis tendencies have on attention control and distractor suppression. Using a combination of behavioural, brain imaging, and brain stimulation studies our findings support a more nuanced understanding of the attention control profile associated with these conditions. Importantly, we show that the degree each of these conditions is expressed in an individual is linked with performance and with signatures of both brain function and structure. This strongly supports the notion of neurodivergent conditions as dimensions that drive the attention control system in a specific direction.

About the Speaker

Carmel completed his undergraduate degree in psychology and computer sciences at Tel Aviv University, Israel. He later moved on to develop a new computerised assessment and training batteries for children and adults with ADHD following which he arrived at Birmingham to study for a Ph.D. with Professor Glyn Humphreys investigating mechanisms of salience-based selection. He then continued his training in cognitive neuroscience methods in a couple of post-doc positions (ESRC, MRC) before taking up a lectureship position in 2010 becoming an associate professor in 2020. His lab – Cognitive Neuroscience of Atypical Attention, utilises a combination of methodologies (including brain imaging, brain stimulation, and individual differences) to understand brain mechanisms underlying atypical attention control in a variety of contexts. Work in the lab also focuses on translational research into developing attention control, specifically in neurodivergent individuals.

Zoom Meeting (For participants who couldn't attend the Seminar in person)
https://hku.zoom.us/j/6985555998?pwd=V05yTGJWNTlzazd2OFZ0Q3FReHVkdz09
Meeting ID: 698 555 5998 | Password: Psyc

~All are Welcome~

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