Brain-to-Society Decision and Behavior Seminar McGill Centre for the Convergence of Health and Economics

Computational Psychiatry Across Scales: From Genes in Evolution to Brains in Interaction

by Guillaume Dumas

Wednesday, June 16, 2021 | 11 AM to 1 PM EST

For *Remote Participation*, please register **HERE**

SEMINAR ABSTRACT: The interdisciplinary endeavour of cognitive science has been encompassing the study of many scales in both space, time, and fields. This talk will illustrate how building "computational ladders" between scales provides alternative heuristics to understand social cognition in health and disease. We will start by the interactive turn tak- en recently by social neuroscience, discussing how the study of human-human and human-machine interaction demon- strate how low-level sensorimotor coordination with others not only shapes our individual mind but also how we infer high-level intentions and humanness attribution to them. We will finish with recent analyses of the phylogeny of the primate nervous system, including archaic hominids such as Neanderthal and Denisovan, and discuss how genetics at evolutionary time scale questions the singularity of the human brain and the emergence of social skills.

Panel Discussion: A panel will follow the presentation to advance precision convergence science in discussing how computational methods can develop a quantitative mechanistic understanding of the brain and society multiscale pro- cesses that underlie mental health and disease to inform better targeted and more effective practical applications an- chored in model-based analyses. Discussion will address how such knowledge can inform better targeted and more im- pactful professional practice/ innovation/interventions for lifelong socio-emotional wellness and resilience in both health and disease. The webinar is chaired by Prof. Laurette Dube, Chair and Scientific Director, McGill Centre for the Conver- gence of Health and Economic (MCCHE).

Presenter: Dr. Guillaume Dumas is a neuroscientist with a transdisciplinary back- ground in theoretical physics, systems engineering, and cognitive science. He investigates the neurobiology of social cognition through the lens of complex systems theory and com- putational methods. His scientific interests connect with biomedical research, specifically in psychiatry which requires integrating biological, psychological, and social dimensions of the human mind.