

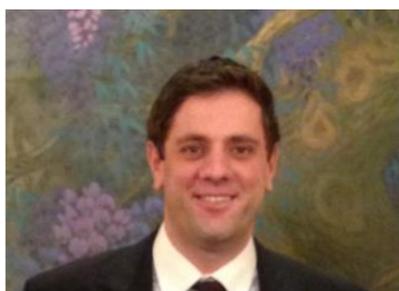


Departmental Seminar

Social Decision Making: Neuroscience, Culture and Mega-Cities

11:30 a.m. – 12:30 p.m. | February 24, 2016 (Wednesday)

Rm 813, 8/F, The Jockey Club Tower | Centennial Campus | The University of Hong Kong



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Abstract

Decision-making is a central function of the human brain and social life overall. Understanding this complex function necessitates the integration of multiple methods and approaches, ranging from neuro-computational methods, game theory and lab experiments to social psychology, culture science and agent based modelling of social interactions. In my lab, we adopt such an approach allowing us to understand decision making at multiple levels. Firstly, (i) I will present evidence describing human brain signals that are sensitive to basic decision making parameters (value and risk). Subsequently, (ii) additional neuroimaging studies and models explain how decision making is distorted when social information is included – specifically we examine how competition / cooperation is represented in the human brain; how trust is a form of “social risk”; and how social influence impacts risky decision making. A third stream (iii) takes the basic computational tenets of social interactions and tests them in large-scale agent-based modelling simulating thousands of interactions across thousands of iterations. Agent-based modelling approaches were used to demonstrate how laws describing individual behavior could provide surprising results (and even collapse) when extrapolated to complex networks of interacting agents. Finally, (iv) I will present more recent work and a future program examining the impact of urbanization and Mega-Cities on human behavior, cross-cultural interactions and psychology. I will finish with a call for the establishment of a multi-disciplinary network of Asian-based researchers aiming in the improvement of mental health via a better understanding of the interaction between the built environment, culture and human neurobiology.

About the Speaker

Professor Christopoulos hold a Ph.D. in Cognitive Neuroscience (University of Cambridge; postdoc at Cambridge, Baylor College of Medicine and Virginia Tech) and I have extensive research experience in neurobehavioral accounts of human behavior. In a series of studies, we identified the neural correlates underlying decision making under risk and risk attitudes (PNAS, 2009; Journal of Neuroscience, 2009, 2010). Recent studies have explored the social aspects of human behaviour employing novel neuro-computational approaches (Nature Neuroscience, 2015, Neuroimage 2015).

A new research stream in my lab explores the effects of the development of Mega-Cities and urbanicity on human behaviour, mental health and performance. We explore how architectural parameters such as lighting, windowless spaces, sounds and the concept of horizon interact with the human brain and body. Additionally, we explore how the cultural mixing that urbanicity brings is translated by the human brain. Our aim is to develop standards for liveable cities.

Methodologically, we employ a rich, multi-disciplinary approach combining different methods including (i) lab-based methods (behavioral game theory) (ii) cognitive neuroscience (fMRI, eye-tracking and electrodermal responses) (iii) computational approaches (at the individual [learning theory] and group level [Agent-Based modelling]) and (iv) field studies with real-world applications.

~All are Welcome~