

Thursday 7th October, 1pm

Anne Urai

Leiden University

Title: Choice history bias as a window into cognition and neural circuits

Abstract: Perceptual choices not only depend on the current sensory input, but also on the behavioral context, such as the history of one's own choices. Yet, it remains unknown how such history signals shape the dynamics of later decision formation. In models of decision formation, it is commonly assumed that choice history shifts the starting point of accumulation towards the bound reflecting the previous choice. I will present results that challenge this idea. By fitting bounded-accumulation decision models to behavioral data from perceptual choice tasks, we estimated bias parameters that depended on observers' previous choices. Across multiple animal species, task protocols and sensory modalities, individual history biases in overt behavior were consistently explained by a history-dependent change in the evidence accumulation, rather than in its starting point. Choice history signals thus seem to bias the interpretation of current sensory input, akin to shifting endogenous attention towards (or away from) the previously selected interpretation. MEG data further pinpoint a neural source of these biases in parietal gamma-band oscillations, providing a starting point for linking across species.

Bio: As a cognitive neuroscientist, Anne Urai investigates how the brain transforms sensory information into useful decisions, and how such decisions change with experience. Anne studied cognitive neuroscience and philosophy at University College Utrecht, Xiamen University in China, University College London and École Normale Supérieure, Paris. During her doctoral research in the lab of Tobias Donner at the Universitätsklinikum Hamburg-Eppendorf and University of Amsterdam, she investigated how our previous choices bias the way we interpret later information, and how this process is affected by the confidence in our decisions. She joined Cold Spring Harbor Laboratory in New York as a postdoctoral fellow, investigating the neurophysiology of decision-making using high-density neural recordings in the mouse brain. During this time she was a core member of the International Brain Laboratory collaboration, working as part of a global team of systems and computational neuroscientists. Her research combines psychophysics and computational modeling of behavioral data with electrophysiological recordings in humans and rodents. She is also a passionate advocate for team science, open science and reproducibility.

Thursday 21st October, 1pm

Will Mandy

University College London

Title: The hidden face of autism: Understanding the characteristics and needs of girls and women on the autism spectrum

Abstract: Autism is more commonly diagnosed in males than in females: the male-to-female ratio is three-to-one in epidemiological samples and as high as ten-to-one in clinical practice. This likely reflects an underestimation of the true prevalence of autism in girls and women, arising from systematic biases in diagnostic criteria and clinical services. As a result, autistic females are less likely to receive an accurate and timely diagnosis, which reduces their chances of benefiting from appropriately targeted health care and educational resources.

This talk will consider the reasons for, and costs of, the under-recognition of autistic females. This will include the proposal that there is a female autism phenotype that is not well captured by current diagnostic practice. Clinical and research implications will be considered.

Bio: Will Mandy is a clinical psychologist and Professor of Neurodevelopmental Conditions at University College London (UCL), where he is joint director of the clinical psychology training course, the largest of its kind in Europe. His work aims to improve the recognition of autism, and to develop new interventions to help autistic people. He has a particular research interest in improving the identification and care of females on the autism spectrum, who are currently at high risk of going unnoticed and unhelped by clinical and educational services. He also studies sub-diagnostic autistic traits in non-clinical populations, and the role these can play in the development of a range of common childhood, adolescent and adult mental health problems. With colleagues at Great Ormond Street he has developed and trialled interventions to help children with autism transition from primary to secondary school, and to teach children about their autism diagnosis, with an emphasis on fostering their sense of self-worth and pride.

Thursday 11th November, 1pm

Eiko Fried

Leiden University

Title: Using network models to understand, predict, and treat mental disorders

Abstract: In the last 10 years, network approaches have gained considerable recognition in clinical psychology and psychiatry, consisting of network theories and network models. In this talk, I will briefly outline the types of data and types of network models employed in this research area, and how they promise to facilitate our ability to understand, predict, and treat mental disorders.

Bio: Eiko is a psychologist, methodologist, and nearly photographer. He obtained his PhD in clinical psychology at the Free University of Berlin, followed by four years of postdoctoral training in methodology at KU Leuven and University of Amsterdam. He returned to clinical psychology in 2018, as Associate Professor at Leiden University. He works at the intersection of clinical psychology, psychiatry, epidemiology, methodology, and complexity science, and enjoys dabbling in philosophy of science. His interests are how to best understand, measure, model, and classify mental health problems—and in improving cumulative psychological science through open science practices. He loves burnt coffee and fast computers, and is humbled to get to work with many fantastic researchers from all over the world.

Thursday 25th November, 1pm

Mani Ramaswami

Trinity College Dublin

Title: Inhibitory neural masks: filters to prioritise relevant information

Abstract: In normal circumstances, individuals engage with internal or external information relevant to the immediate context. This fundamental behavior relies substantially on neural mechanisms that silence extraneous brain activities. Building on experimental observations from my lab and others, I will outline a framework which postulates that precise inhibitory masks created in the brain: (a) suppress activation of cell assemblies encoding familiar percepts or remote memories, and (b) are selectively lifted from assemblies encoding context-relevant information. I will discuss different types of inhibitory masks, mechanisms by which they are regulated, possible roles for sleep-phases in their formation, and the potential relevance of their (mis)regulation in dreams, hallucinations, and mental health.

Bio: Mani Ramaswami is Professor of Neurogenetics in Trinity College Dublin, a Wellcome Trust Investigator, Science Foundation Ireland Investigator and Director of the Trinity College Institute of Neuroscience. He directs a college-wide Wellcome Trust funded strategic programme that has supported early-stage PIs and enabled new interdisciplinary work, particularly in the Neurohumanities. Mani was an undergraduate in the Indian Institute of Technology in Delhi and a PhD student in the California Institute of Technology in Pasadena. He previously held tenured faculty positions in the National Centre for Biological Sciences in Bangalore and the University of Arizona in Tucson. He served for two years as VP R&D of Q Therapeutics, a Biotech company he co-founded in Salt Lake City, Utah. In India, he has helped initiate and sustain interdisciplinary research programmes in neuroscience and chemical ecology, while also facilitating the establishment of Science Gallery Bangalore. His recognitions include a McKnight Scholars Award in the USA and the 11th Foundation Day Medal from the National Brain Research Centre in India. He is a Member of the Royal Irish Academy and a founding member of the Board of Reviewing Editors for *eLife*. More recently, in June 2021, he was selected as Man-of-the-Match for the Dublin University Museum Players victorious game against the Merrion Cricket Club's Taverner's Eleven.

Thursday 9th December, 1pm

Cristina Atance

University of Ottawa

Title: Future thinking in young children: How do we measure it and how can we optimize it?

Abstract: The last decade has seen a marked increase in research on humans' (and non-human animals') capacity to think about the future – often termed “episodic future thinking,” “prospection,” or “mental time travel.” In this talk, I focus on the development of children's capacity for future thought. In the first part of my talk, I outline some of the approaches that have been used

to measure this capacity in young children, and in the second part of my talk, I discuss research that highlights methods to induce children to think about the future in a more adaptive and optimal way.

Bio: Dr. Cristina Atance is a Full Professor of Psychology at the University of Ottawa in Ottawa, Canada. She is the Director of the Childhood Cognition and Learning Laboratory and Co-Director of the University of Ottawa “[Living Lab](#)” at the [Canada Science and Technology Museum](#). Dr. Atance received her PhD from the University of Waterloo in 2001. She then completed a two-year post-doctoral research fellowship at the University of Washington before returning to Canada in 2003 to begin a faculty position at the University of Ottawa. Dr. Atance has broad research interests within the domain of cognitive development/children’s thinking but is especially intrigued by their memory and thought about the future, and their perspective-taking and executive functioning skills. Her research has been funded by the Natural Sciences and Engineering Research Council of Canada (NSERC), the Social Sciences and Humanities Research Council of Canada (SSHRC), and the Government of Ontario.

Thursday 16th December, 1pm

**Postdoctoral Publication of the Year Prize Winner 2021
Speaker TBA**