

Bonn Melbourne Seminar in Decision Making and Computational Psychiatry

“Behavioral and Neuronal Mechanisms of Dynamic Social Interactions”

Dr Igor Kagan (Decision and Awareness Group, Cognitive Neuroscience Laboratory, German Primate Center, Göttingen, Germany)

Overview

Many real-world interactions unfold in continuous time with mutual action visibility. I will present our recent work on dynamic strategic coordination underlying such interactions, utilizing a novel face-to-face setup based on a two-sided touch-sensitive transparent display. I will firstly describe the behavior of macaque and human dyads in a “transparent” version of the classical “Bach-or-Stravinsky” decision game, which rewards coordinated choices but also imposes an inherent conflict [1]. While humans mainly adopted dynamic pro-social turn-taking to equalize payoffs, macaques converged on simpler, static coordination. After training with a human confederate, macaques learned to coordinate dynamically but exhibited competitive turn-taking when paired together. I will then show how single neurons and population activity in the macaque premotor cortex represent predicted and observed actions of a partner, and integrate this information with encoding of agent’s own goals and choices—critical for dynamic utility computations. Thirdly, I will illustrate the diversity of behavioral patterns and underlying computations that emerge in human dyads during a novel foraging task that affords cooperative, competitive, and mixed strategies, in a continuous spatiotemporal action space. I will conclude by summarizing how action visibility promotes the emergence and maintenance of coordination, against the backdrop of varying social attitudes and motivations in both species.

[1] Moeller et al (2023) Human and macaque pairs employ different coordination strategies in a transparent decision game. eLife 12, e81641.

Thursday, 18th January 2024, 9am (CET)

<https://uni-bonn.zoom.us/j/67862809703?pwd=WHM3b3IiUFJYY2x0ekxLZUhxS3UvUT09>

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Contact

Prof Ulrich Ettinger, Department of Psychology, University of Bonn, Germany; ulrich.ettinger@uni-bonn.de

Prof Carsten Murawski, Department of Finance, The University of Melbourne, Australia;
carstenm@unimelb.edu.au

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