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TRA LIFE AND HEALTH
TRANSDISCIPLINARY RESEARCH AREA
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CENTRE FOR ARTIFICIAL INTELLIGENCE AND NEUROSCIENCE

Thursday, April 23, 2026 at 13:00

Speaker:

Professor Sebastian Gluth

University of Hamburg

Unraveling the Neural and Computational Principles of Information Integration in Complex Decisions

Location: Room 2.082 | 2nd floor |Am Propsthof 49 | 53121 Bonn

(Online link: https://shorturl.at/qa3Vk)

Abstract:

In this talk, I will present work on the neural and cognitive mechanisms underlying value-based decisions, with a focus on multi-attribute choices. Starting with findings from eye-tracking experiments, I will discuss how individuals allocate visual attention in a goal-directed manner to efficiently identify the most suitable option, as captured by a hierarchical Bayesian model of information search. The talk then shifts to a novel EEG study testing the neural mechanisms along the predictions of our theory, the Multi-Attribute Search and Choice (MASC) model, which posits that belief updating during fixations guides decision processes. EEG analyses reveal neural signatures—a P3-like component and centro-parietal positivity—that correlate with model-derived belief updates, providing neural evidence for Bayesian inference in active decision-making. Together, these studies demonstrate how attention and belief updating dynamically shape complex choices.

Sebastian Gluth is Professor for Cognitive Modelling and Decision Neuroscience in the Department of Psychology at the University of Hamburg. He received his PhD from the University Medical Center Hamburg-Eppendorf and then moved to the University of Basel, first as postdoc, and then as assistant professor. His research focuses on understanding the neural and cognitive mechanisms of value-based decisions in its interplay with other cognitive functions, such as attention, memory, and learning. In additon, he has obtained an ERC Starting Grant to study social inferences and interactive decision-making processes. Methodologically, he combines cognitive modelling of decision-making and learning models with behavioral experiments, eye-tracking, fMRI and EEG.

For more information on the event, please contact:
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Host:
Professor Dominik Bach,
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