

WWZ Research Seminar
Faculty of Business and Economics, University of Basel
Tuesday, April 11, 2023, 12:30, S15, HG, WWZ and Zoom

Prof. Dr. Rava Azeredo da Silveira

"Cognitive Biases and Costly Mental Representations"

Abstract

While the faculty of rational thinking characterizes, at least to an extent, our human nature, it suffers from a remarkably long list of cognitive biases—systematic deviations from rational information processing and behavior. Moreover, human behavior is often variable, even when an optimal observer would behave in a deterministic fashion. Biases and variability are particularly salient in situations in which humans update their beliefs as a function of a stream of observations, and have the objective of inferring the generative model of the observations or forecasting future observations. In this talk, I will introduce a theoretical framework in which biases and variability emerge from an optimal trade-off between an objective and the cognitive cost of mental representations needed to carry out probabilistic computations. I will discuss different model instantiations of this idea, in which the cognitive costs are expressed as information theoretic quantities, as in models of rational inattention. Depending on the model, these are interpreted as a cost on the capacity of mental representation or a cost on the precision of memory. This theoretical framework predicts that inference and forecasts are subject to random variations and, furthermore, are biased on average away from their rational-expectation counterparts. It also predicts a recency effect—recent observations are overweighted—and a corresponding over-reaction to new observations. Alongside these theoretical implications, I will present data from behavioral experiments in humans and their analysis in the context of our theoretical framework. Taken together, theory and experiment point to the possibility that biases and variability in human cognition reflect optimality under constraints—‘resource-rational cognition’—rather than mis-specified beliefs or heuristics.

All seminars are open to the public and take place in hybrid format with the lecturer present. For updates (place, abstracts etc.) kindly visit <https://wwz.unibas.ch/de/researchseminar/> Non-faculty members, who would like to register for the seminars, please send an email to forschungsseminar-wwz@unibas.ch.