



Department of  
Psychological and  
Behavioural Science

**PBS seminar series**

**20 May 2020, 12.00pm to 1.00pm (BST)**

To join the seminar on Zoom and our events mailing list, email [pbs.events@lse.ac.uk](mailto:pbs.events@lse.ac.uk)

**Speaker: Thomas Graeber, Harvard University**

**Host: Dr Christian Krekel, LSE**

**Title: Cognitive Uncertainty**

**Abstract:** This paper introduces a formal definition and an experimental measurement of the concept of cognitive uncertainty: people's subjective uncertainty about what the optimal action is. This concept allows us to bring together and partially explain a set of behavioral anomalies identified across four distinct domains of decision-making: choice under risk, choice under ambiguity, belief updating, and survey expectations about economic variables. In each of these domains, behavior in experiments and surveys tends to be insensitive to variation in probabilities, as in the classical probability weighting function. Building on existing models of noisy Bayesian cognition, we formally propose that cognitive uncertainty generates these patterns by inducing people to compress probabilities towards a mental default of 50:50. We document experimentally that the responses of individuals with higher cognitive uncertainty indeed exhibit stronger compression of probabilities in choice under risk and ambiguity, belief updating, and survey expectations. Our framework makes predictions that we test using exogenous manipulations of both cognitive uncertainty and the location of the mental default. The results provide causal evidence for the role of cognitive uncertainty in belief formation and choice, which we quantify through structural estimations.