



*Listen to the Sirens. Understanding Psychological Mechanisms with Theory
and Experimental Tests*

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Thesis Abstract

Behavioral economics is a blooming field at the intersection of economics, psychology, and biology in which we investigate the *psychological mechanisms* that make humans behave the way they do and ask to what degree and by what criteria we can find *reason* in their behavior. This thesis contributes to a larger research program within the discipline that aims to systematically extend the mathematical theory of individual and strategic decision making lying at the core of neoclassical microeconomics – as well as the related experimental and empirical literature – in order to account for a richer set of motivations and decision processes, such as other-regarding preferences, emotions and belief-dependent motivations, as well as cognitive and social heuristics.

Chapter II presents an experimental comparison of psychological mechanisms in the context of choice shifts in group decisions. Choice shifts occur when individuals advocate a risky (safe) decision when acting as part of a group even though they prefer a safe (risky) decision when acting as individuals. Even though research in psychology and economics has produced a mass of evidence on this puzzling phenomenon, there is no agreement about which mechanism produces choice shifts. In an experiment, we investigate the performance of two prominent mechanisms that have been proposed to explain the phenomenon; (i) rank-dependent utility and (ii) a desire to conform to the wishes of the majority. The evidence provides clear support for the conformity explanation.

Chapter III uses evolutionary game theory to zoom in on the cognitive underpinnings of cooperation-enhancing behaviors. Building on experimental and theoretical results from a blossoming literature on social heuristics, we develop a general model of fast (intuitive) and slow (deliberative) cooperation that systematically exposes the conditions under which various configurations of intuitive and deliberative decision systems are evolutionarily adaptive. The general model also shows that there is a variety of strategies that combine intuition and deliberation with Bayesian learning and strategic ignorance. Our results thereby unify and generalize findings from different, seemingly unrelated parts of the literature.

Chapter IV investigates the foundations of psychological game theory. Psychological game theory is a powerful mathematical framework in which emotions and belief-dependent motivations such as intention-based reciprocity, guilt, anger, and many more can be given a math-

ematically precise representation. This is achieved by letting utility depend not only on outcomes of an interaction but also on beliefs and intentions of players in the game. In the chapter, we provide a systematic extension of common belief in rationality (also known as correlated rationalizability) to psychological games. Common belief in rationality is the most basic solution concept in the game theorist's toolbox where the only assumptions are that players choose optimally given their beliefs and that this is common knowledge. The chapter's results therefore provide an important cornerstone for a systematic understanding of how emotions and belief-dependent motivations affect reasoning and choice in strategic interaction.