I am a behavioral economist with a particular interest in the formation of subjective beliefs. In my work, I primarily explore the role of cognitive biases in belief formation and updating, integrating insights from neuroscience, cognitive science, psychology, and economics. My current research agenda also addresses methodological refinements to empirical tools that improve the measurement of subjective beliefs and our understanding of their role in decision-making under uncertainty. Thus, employing a range of theoretical and empirical methodologies—including formal modeling, laboratory experiments, and Bayesian econometrics—I investigate the mechanisms driving systematic deviations from rational benchmarks and their implications for decision-making in both individual and strategic settings and develop methodological tools to improve our understanding of observed behavior.

1 CURRENT RESEARCH AGENDA

1.1 Expectations vs. Evidence: A Cognitive Model of Confirmation Bias

In this study, contributing to the emerging strand of literature focusing on cognitive foundations of economic decision-making (see Enke, 2024 for a review), I propose a model of confirmation bias that interconnects the probability of misperceiving a given piece of evidence with the degree of alignment between a decision maker's (DM) initial expectations and the evidence observed, thereby endogenizing the misperception probability of the observed sample. The model builds on the hypothesis that the noise in the DM's inference of observed samples is directly proportional to the cost of information processing that the DM must endure to adjust her prior beliefs. I first formally demonstrate that disconfirming evidence imposes a higher cost of information processing on the DM, which, in turn, amplifies the noise in her inference. As a result, disconfirming evidence compels the DM to rely more heavily on her initial expectations due to the increased cost of information processing, which consequently pulls the DM's posterior expectations toward her prior expectations. I further test the model's assumptions and predictions through an online experiment, and find empirical support for them. More importantly, however, the endogenous mechanism that the model captures enables a detailed study of how the strength of confirmation bias changes in response to the degree of congruence between new evidence and existing beliefs, constituting a key contribution of this paper.

1.2 Confirmation Bias and Base-rate neglect

A substantial body of literature explores confirmation and base-rate neglect in isolation, although , as pointed out by Benjamin (2019), these biases can coexist and interact during belief updating. In this study, I experimentally this interplay between confirmation bias and base-rate neglect at the individual level. Specifically, I hypothesize that not just theway subjects use evidence depends on the type of evidence they encounter but also how they utilize base rates varies with evidence type during belief updating. In line with this, results indicate that subjects tend to rely more heavily on base rates when confronted with confirming evidence compared to with disconfirming evidence. Moreover, findings suggest a systematic interaction between confirmation bias and base-rate neglect in belief updating, whereby individuals exhibiting confirmation bias place greater weight on base rates regardless of the type of evidence they observe, with greater inference asymmetry amplifying this reliance, while for those not exhibiting confirmation bias, greater asymmetry leads to reduced reliance on base rates specifically when processing disconfirmatory evidence. These findings highlight the coexistence and interaction between confirmation bias and base-rate neglect, with the novel contribution being the identification of signal-type-dependent base-rate utilization.

1.3 Beliefs, Reciprocity, Confidence, and Trust

joint work with Mohammed Abdellaoui, Yassina Kaoune, Emmanuel Kemel, and Ferdinand M. Vieider

In this study, we develop a belief elicitation mechanism which is based on a series of binary choices between lotteries defined over exogenously determined distinct events to win a fixed prize. We deploy this method in a laboratory experiment by examining the predictive power of elicited belief measures for trusting behavior in strategic interactions. Conditional on the inclusion of mean beliefs, we observe that

belief uncertainty is the single most important explanatory variable, suggesting that belief distributions play a major role beyond mean beliefs. To test this insight, we estimate the generalized Arrow-Pratt approximation of the certainty equivalent proposed by Maccheroni, Marinacci and Ruffino (2013), which yields clear results: while DMs are risk-neutral on average, the subjective model uncertainty of a DM, as captured by the variance in beliefs around their mean, is highly predictive of trusting behavior. This supports the multiple prior explanation of the smooth model over standard models such as Subjective Expected Utility Savage (1954) or Prospect Theory (Kahneman and Tversky, 1979), which attribute no role to model uncertainty. It further highlights the relevance of the smooth ambiguity model for understanding strategic interactions and constitutes the key contribution of our paper.

2 FUTURE WORK

Building on the insights gained during my studies, I plan to pursue research that broadens both the theoretical and methodological scope of my work. One central question I would like to explore is the role of not only point beliefs but also the uncertainty surrounding them in strategic interactions. The importance of beliefs in determining the strategy choice in one-shot, repeated, and dynamic games has been previously discussed in the literature (Aoyagi, Fréchette and Yuksel, 2024; Gill and Rosokha, 2024; Heinemann, Nagel and Ockenfels, 2009; Costa-Gomes and Weizsäcker, 2008), yet little attention has been paid to the uncertainty surrounding those beliefs. In earlier work, we highlighted the role of belief uncertainty in shaping behavior in a dynamic game, and this insight motivates my future research on how such uncertainty —the confidence individuals have in their own beliefs about their opponent's behavior —contributes to deviations from equilibrium play. To this end, I plan to conduct experimental studies of games where standard equilibrium concepts cannot fully account for the observed behavior, such as coordination games, prisoner's dilemma, and ultimatum game. I hypothesize that these deviations stem not just from players' point beliefs but also from the uncertainty surrounding those beliefs, which influences strategic choices from the outset and helps explain persistent departures from equilibrium predictions. This work will deepen our understanding of how belief distributions shapes decision-making in strategic contexts, with implications for both theory and practical applications.

Building on this, I further plan to investigate the cognitive foundations of deviations from standard equilibrium predictions to understand how these predictions could be improved by incorporating aspects of human cognition and perception of the contents of choice in strategic interactions. Specifically, the inherent noisiness of human cognition implies that key determinants of strategy choice in a strategic interaction including payoffs, beliefs about opponents, and other relevant elements, are perceived imperfectly. Incorporating these aspects of human cognition into equilibrium concepts can help explain why observed behavior systematically departs from standard theoretical predictions. For instance, Frydman and Nunnari (2025) have demonstrated how noisy but efficient coding mechanisms can lead to unique equilibria in coordination games that admit multiple pure strategy Nash equilibria. Given the conceptual link between perceptual and economic decisions, their project motivates me to further explore whether neuroscientific models can help refine standard equilibrium concepts in game theory, which is why this theme will constitute a central part of my future research agenda.

Finally, I also aim to extend my job market paper on confirmation bias to model individuals' information source selections across biased information sources. A widely observed pattern in the empirical literature in this area is that people tend to favor sources that align with and reinforce their preexisting beliefs (Charness, Oprea and Yuksel, 2021; Chopra, Haaland and Roth, 2024). While existing theoretical models provide varying explanations for why individuals gravitate toward like-minded news, I hypothesize that this behavior stems from the optimal allocation of constrained attention across information sources and the effects of noisy coding. If information costs are defined as in my job market paper, acquiring information from sources that provide stimuli further from individuals' expectations will be more costly. In rational inattention models (Maćkowiak, Matějka and Wiederholt, 2023), this should generally lead individuals to prioritize sources that provide more familiar stimuli, as these minimize cognitive effort. However, depending on the trade-off between information cost and expected gains, individuals may still allocate attention to unfamiliar sources under certain conditions. To formally capture this trade-off and explore its implications for information selection, I plan to develop an integrated model of rational inattention and noisy coding, incorporating both optimal attention allocation and the constraints imposed by imprecise mental representations.

References

[1] Aoyagi, Masaki, Guillaume R. Fréchette, and Sevgi Yuksel (2024) 'Beliefs in repeated games: An experiment.' *American Economic Review* 114(12), 3944â75

[2] Benjamin, Daniel J (2019) 'Errors in probabilistic reasoning and judgment biases.' *Handbook of Behavioral Economics: Applications and Foundations 1* 2, 69–186

[3] Charness, Gary, Ryan Oprea, and Sevgi Yuksel (2021) 'How do people choose between biased information sources? evidence from a laboratory experiment.' *Journal of the European Economic Association* 19(3), 1656–1691

[4] Chopra, Felix, Ingar Haaland, and Christopher Roth (2024) 'The demand for news: Accuracy concerns versus belief confirmation motives.' *The Economic Journal* 134(661), 1806–1834

[5] Costa-Gomes, Miguel A, and Georg Weizsäcker (2008) 'Stated beliefs and play in normal-form games.' *The Review of Economic Studies* 75(3), 729–762

[6] Enke, Benjamin (2024) 'The cognitive turn in behavioral economics.' *Working Paper*

[7] Frydman, Cary, and Salvatore Nunnari (2025) 'Coordination with cognitive noise.' *Working Paper*

[8] Gill, David, and Yaroslav Rosokha (2024) 'Beliefs, learning, and personality in the indefinitely repeated prisonerâs dilemma.' *American Economic Journal: Microeconomics* 16(3), 259–283

[9] Heinemann, Frank, Rosemarie Nagel, and Peter Ockenfels (2009) 'Measuring strategic uncertainty in coordination games.' *The review of economic studies* 76(1), 181–221

[10] Kahneman, Daniel, and Amos Tversky (1979) 'Prospect theory: An analysis of decision under risk.' *Econometrica* 47(2), 263–291

[11] Maccheroni, Fabio, Massimo Marinacci, and Doriana Ruffino (2013) 'Alpha as ambiguity: Robust mean-variance portfolio analysis.' *Econometrica* 81(3), 1075–1113

[12] Maćkowiak, Bartosz, Filip Matějka, and Mirko Wiederholt (2023) 'Rational inattention: A review.' *Journal of Economic Literature* 61(1), 226–273

[13] Savage, Leonard J (1954) *The foundations of statistics* (New York: Wiley)