

Abstract

Understanding the dynamics of conformity and contagion is essential in today's social and economic interactions. These phenomena substantially influence decision-making processes, impacting both individuals and collectives. My dissertation explores these complex relationships to shed light on how they manifest within the framework of neuroeconomics—an interdisciplinary field emerging at the intersection of psychology, neuroscience, and economics.

The central scientific problem addressed in this thesis is how contagion and conformity shape social and economic decision-making at both behavioral and neuropsychological levels. At the outset of my research, I identified a critical gap in the literature: while conformity and contagion are known to affect decision-making, there has been insufficient exploration of the neural mechanisms underlying these social behaviors in an economic context—particularly in relation to other-regarding preferences.

This thesis is situated within the domain of behavioral microeconomics, which seeks to ground economic analysis in the actual decision-making processes of real people. It not only identifies a significant gap in the existing literature but also proposes a novel theoretical and experimental approach to address it.

The primary goal is to uncover the neuropsychological signatures of conformity and contagion and to demonstrate how brain activity and attentional processes are modulated during these social influence effects. To achieve this, I employed a multimodal approach across two distinct but complementary studies:

- EEG experiments, offering high temporal resolution of neural dynamics
- Eye-tracking studies, providing precise measures of visual attention and cognitive processing

Together, these methods allow for a deeper understanding of how individuals' choices are shaped by both their social environment and internal processes.

Based on this gap in the literature, I formulate the following research questions:

- What are the neural and cognitive mechanisms that drive individuals to align their behavior with that of others?

- How do social contagion and conformity influence decision-making processes at the level of the brain?

In a related study using eye-tracking, I explored attentional and physiological processes underlying prosocial decision-making:

- How do individuals allocate visual attention when deciding between self-serving and prosocial options?
- Does attentional allocation differ depending on the type of inequality (advantageous vs. disadvantageous)?

With these questions in mind, I designed a rigorous experimental framework. I developed a series of experiments using EEG technology and eye-tracking, to monitor brain activity and gaze patterns during instances of social contagion and conformity, enabling a precise examination of the underlying neural and behavioral processes. The EEG data were collected at the SBU laboratory, while the eye-tracking data were gathered at the NBIC laboratory. Due to laboratory constraints, these data were collected from two separate groups of participants performing the same experimental task¹. While the ideal scenario would have been to conduct both measurements simultaneously, practical limitations made this unfeasible. The findings from each method are presented in distinct publications within this thesis.

By integrating behavioral and neuropsychological perspectives, my study aims to challenge the conventional notion of rationality that dominates economic discourse. In doing so, I seek to contribute to the growing field of neuroeconomics and to advance our understanding of economic relationships in an increasingly interconnected world.

Furthermore, by applying the neuroeconomics framework, I aim to highlight its potential to investigate economic decision-making beyond the scope of my specific research. This field provides a powerful bridge between brain function and economic outcomes, which could ultimately lead to more comprehensive and realistic models of human decision-making across diverse contexts.

Finally, a summary of the four key articles that form the foundation of this thesis will be presented.

¹ To ensure transparency, the exact participant instructions are reproduced in Appendix D (Experiment Instruction).