

# Chapter 3

## Rational, Emotional, and Neural Foundations of Economic Preferences

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### ABSTRACT

*Classical economics assumes human economic decision making is completely rational and dominated by self-interest. Behavior economics emerged to account for the fact that human economic preferences are often influenced by emotional and psychological factors leading to inconsistent, intransitive, and irrational decisions that fail to maximize utility and minimize cost and transcend only self-interest. Both rationality and emotions are seated in the human brain in the prefrontal cortex and limbic system, respectively. The brain imaging methods of neuroscience help in understanding the interplay between economic behavior and neural mechanisms. The human economic decision making behavior involves computational and neurobiological processes and is related to the psychological processes. Classical Economics, Psychology, and Neuroscience converge in Neuroeconomics to better understand and predict human economic decision-making. Neuromarketing is an emerging field that uses neuroscience techniques to understand economic preferences of consumers.*

### INTRODUCTION

Classical economics and game theory assume that human economic decision-making is motivated *only* by self-interest and utility maximization through rational choice in a context of scarce resources. The assumption is that humans utilize all the information available in the market to decide without being influenced by biases and emotions and then act in a logical and rational manner. They weigh risk and return factors by considering the *likelihood* of an outcome and the *value* of the outcome to maximize benefits while minimizing the costs. However, in real life, individuals do *not* always make rational, utility-maximizing decisions. People do deviate from rationality in a systematic manner and have biases. The biases, rules of thumb, or heuristics and emotions often overpower rational thinking and result in irrational behavior (Kahneman, 2003a, b).

DOI: 10.4018/978-1-4666-9989-2.ch003

Economic decision-making is often influenced by unconscious biases, implicit assumptions, and errors in judgment. These systematic biases have origins in human psychology. Human economic decisions are often influenced by contextual and psychological factors leading to inconsistent, intransitive, and irrational decisions that fail to maximize utility and minimize cost (Summerfield & Tsetos, 2015). Behavior economics emerged to account for the cognitive biases, heuristics, emotions, and other psychological processes which often override reason unconsciously and automatically. Behavior economics and social neuroscience converged in neuroeconomics to better understand and predict human economic behavior realistically (Popescu & Nica, 2014). Neural activity causally determines economic choices and the neural computations necessary for making economic choices are stochastic (Corsani, 2013). Thus, economic decision-making has roots in economics, psychology and social neuroscience.

This chapter reviews the rational, emotional, and neural foundations of economic decisions. First, the classical perspective of rational choice in economic decision-making is presented and bounded rationality in real-life economic decisions is discussed. The special human capacity to represent others' intentions, beliefs and desires (i.e., mentalizing or the theory of mind – TOM) is discussed and the relationship between economic preferences and the big five personality traits are explored. The role of emotions, biases, and rules of thumb or heuristics in economic decision-making is reviewed leading to behavioral economics or behavioral finance. The neural perspective of economic decision-making that involves mentalizing and empathy is presented. This integrative neuroeconomic view allows one to better understand the human economic decision making in a way that combines rational, emotional, psychological, social and neural mechanisms. The promise and ethics of neuromarketing are discussed. Finally, policy implications and suggestions for future research are discussed.

## **CLASSICAL ECONOMIC DECISION MAKING: RATIONAL CHOICE AND UTILITY MAXIMIZATION**

Classical economics studies individual and aggregate human economic decision-making and behavior. The individual decisions that people and businesses make regarding the allocation of resources and prices of goods and services (considering taxes and regulations created by governments) is called microeconomics which focuses on supply and demand and investigates how a specific company could maximize its production so it could lower prices and better compete in its industry. The aggregate human economic decision-making is covered in macroeconomics which studies the behavior of the economy as whole and not just specific companies.

Macroeconomics views economy-wide phenomena such as gross domestic product (GDP) and how it is affected by changes in unemployment, national income, rate of growth, and price levels. For example, macroeconomics would examine how a change in net exports would affect a nation's capital account or how GDP would be affected by unemployment rate. An understanding of both microeconomic and the macroeconomic behavior is required to create policies for social equity and justice. Due to the social nature of humans, individual economic decision making behavior is influenced by aggregate economic decision-making. For example, when an influential investor sells his stock for a particular company, smaller investors tend to do the same even though they did not know the reasons that led the influential investor to sell. This irrational behavior is called "herding" which is covered in behavior economics (Kudryavtsev, et al., 2013).

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