Preface

*Human life is one long decision tree – Sterelny*

Neuroeconomics is a relatively new field which seeks to ground microeconomic theory regarding how the brain processes multiple alternatives in economic decision-making. As the study of the biological microfoundations of economic cognition and behavior, neuroeconomic research necessitates the investigation of neurobiology but not necessarily a departure from classical economic assumptions and theory. Following years of effort, neuroeconomics began in earnest as an interdisciplinary field in the 1990s combining neuroscience, experimental and behavioral economics, and cognitive and social psychology.

As a social phenomenon, neuroeconomics includes three distinct disciplines: behavioral economics, functional neuroanatomy, and computational learning theory. Since much neuroeconomic research today tends to focus on only one or two of these influences, the (sub)field appears to remain ununified, especially to the layperson. Paul M. Glimcher is considered the field’s foremost methodological architect and in his 2009 book, *Neuroeconomics: Decision-Making and the Brain*, Glimcher and his colleagues cover a wide range of major topics related to neuroeconomics such as neoclassical and experimental economics, cognitive neuroscience, non-cooperative games, rational and irrational economic behavior, the neurobiology of judgment, decisions under uncertainty, emotion, and social preferences.

Since these key areas are already covered by established theorists, the purpose of our book is to provide some additional insights into neuroeconomics not normally covered such as conspicuous consumption, behavioral finance and neuroaccounting, media economics, the central language hypothesis in decision-making, mind mapping, and erratic decisions.

Chapter 1 presents the fundamentals of neuroeconomics, thus describing the concept of neuroeconomics; neuroimaging applications; neuroeconomics and loss aversion; neuroeconomics and temporal discounting; neuroeconomics of decision making in humans and animals; neuroeconomics, behavioral economics, and irrationality; neuroeconomics and utility theory; neural systems in economic decision making; neural systems in reward system; neural systems in cognitive control system; game theory, strategic interaction, and neuroeconomic studies; and the types of evidence about economic behavior.

Chapter 2 covers the development of neuroeconomics as a relative new sub-discipline in the fields of economics and behavioral science. After comparing paradigms of both classical and behavioral economics, the problem of the “conscious and rational consumer” is addressed in relation to more passive views of consumerism in neuroeconomics. Pointing out the most recent trends in neuroeconomics, the chapter also addresses the historical development of the discipline of neuroeconomics as an independent
field of research within the fields of media and economics. The problem of new marketing strategies as well as the evolvement of neuroeconomics as an independent discipline in the age of digitalization is presented while considering the changing nature of the media industry.

Chapter 3 examines the rational, emotional, and neural foundations of economic preferences. Classical economics assumes that 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 swayed by emotional and psychological factors leading to inconsistent, intransitive and irrational decisions that fail to maximize utility and minimize cost and go beyond self-interest alone. 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. 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.

Chapter 4 explores the potentially ground-breaking connection between neuroeconomics and the Central Language Hypothesis (CLH) which refers to the language placed within the subconscious mind of an individual. The CLH forwards that in the brains of bilingual and multilingual people, one language is more suppressive as it dominates reflexes, emotions, and senses. This central language (CL) is located at the centre of the limbic cortex of the brain. Therefore, when there is a stimulus on the limbic cortex (e.g., fear, anxiety, sadness), the brain produces the central language. The chapter begins with an Introduction followed by a Theoretical Framework. The next section discusses the neurolinguistic projection of the central language and includes the survey and the results used in this study. The Discussion section provides additional information regarding the questionnaire and the CLH, followed by Future Research Directions, Implications, and finally the Conclusion.

Chapter 5 analyzes cooperation attitude as a driver of contemporary socio-economic societies and organizations. The term of cooperation and culture begins the chapter and refers to intercultural competence becoming a core competence in multiethnic organizations. Furthermore, based on the assumption that diffusion of cultures occurs, initiated by globalization, there is a concept of gene-culture co-evolution studies. Next, the cooperation as a social value in strategic human resources management is considered. Cooperation from a neuroeconomics perspective is then discussed. The chapter closes by examining further research implications and then providing the conclusion.

Chapter 6 discusses why individual managers in the same organization who are faced with same environmental changes may differently interpret threat and opportunity aspects of these changes. The chapter also links outcomes of such interpretation to investigate different types of organizational actions. Finally, the chapter further explores how the manager’s experience and characteristics of the environment affect forms of reasoning in interpretation process and performance of subsequent organizational actions.

Chapter 7 explains the relationship between economic decision making and emotion in connection with the relationship between economic decision making and the prefrontal cortex. How diverse regions of the brain are coordinated to produce objective-directed decision is the essence of neuroeconomics. Indeed, the latter is a formal framework to describe the involvement of numerous brain regions including frontal, cingulate, parietal cortex, and striatum in economic and financial decision-making processes.

Chapter 8 covers the different types of games, the approaches applied to predict games’ outcomes, and general analysis of strategic choices. The chapter underscores key aspects of auction and competitive bidding. As a facet of neuroeconomics, game theory can highly complement the comprehension of
human decision making processes. Although the model has somewhat been difficult to many readers, this chapter attempts to present game theory with high level of precision for easy understanding.

Chapter 9 focuses on Functional Magnetic Resonance Imaging (fMRI) as a very effective tool in neuromarketing. Conjoint analysis cards shortens the time required to evaluate attributes related to factors such as fMRI costs, subject fatigue, and participant concentration. Orthogonal matrices keep the amount of conjoint cards to a minimum and shorten the time spent in the fMRI tube to lower costs. Conjoint analysis and fMRI are helpful and strong methods as combined to analyze customer needs and desires.

Chapter 10 questions the applicability of the Efficient Market Hypothesis (EMH) for the analysis of financial markets. The overall goal is to analyze methods of forecasting future prices of financial assets, basing on the concept of the fractal market structure and long-term memory of past prices. Fractals in the financial markets are interpreted either as investors with different investment horizons, or as a configuration of the price movement on chart. The chapter will shed light on the fractal structure of financial markets, nonlinear methods of analysis of financial markets, plasticity and long-term memory to long-term investment horizons of financial markets, fractal analysis of financial markets, and new approaches to forecast prices of financial assets, which eliminate shortcomings of the linear paradigm.

Chapter 11 study substantiates the importance of improving management effectiveness of meso-economic systems in current economic conditions and the features of mesoeconomy as a management object which defines the high complexity of decision making at the mesolevel. A cognitive approach, and an approach involving the integration of the On-Line Analytical Processing (OLAP) and Data Mining (DM) technologies with methods of a multi-criteria assessment of alternative, in particular methods of Multi-Attribute Utility Theory (MAUT) are considered in the chapter. Cognitive mapping of interaction between state and business in a meso-economic system are included as a case-study.

Chapter 12 presents an empirical case study concerned with the implementation and use of an electronic property tax collection system in Bangalore (India) developed between 1998 and 2008 to critically examine the role of government in encouraging fiscal compliance from the theoretical perspective of the ‘Ecology of Games’.

Chapter 13 explores the implications of behavioral research in accounting and its new stream: neuroaccounting for behavioral finance. It is argued that accounting should be considered by behavioral finance researchers because the product of accounting in form of reports, statements and different analyses represents not only economic standing of a company, but also those behind the scenes including accountants and other participants of accounting processes.

Chapter 14 is focused on the possibilities of game theory as a tool of strategists to interpret practical strategic decision-making situations. Simultaneously, there is a need to simplify presentation of game theory and consider the possibilities of mixed strategies. Practical game situations are relatively complex since even the rules of the game might change during the decision-making process. This chapter shows some practical examples how to describe the strategic game situations in a manner that is relatively easy to understand.

Chapter 15 examines trends and patterns of conspicuous consumption behavior in Asian culture. Purchases of global brands are increasingly popular among affluent society not only in Western countries but also in other parts of the world. Global brands are normally associated with luxury brands from all categories of consumption goods such as cosmetics, handbangs, electronic goods, cell phones and accessories, computers, clothing, watches, shoes, and many more. Previous studies have found that Western countries have clearly stated several key factors for consumers to purchase such luxury brands. Consumers from the Asian market are expected to engage in conspicuous consumption behavior to
purchase global brands due to the market demands and increasing income level. The study explores the concept of conspicuous consumption and material value in non-Western culture since this concept is widely studied in Western culture. By examining the conspicuous and materialism, the chapter explain why people are motivated to engage with luxury consumption especially among Asian countries.

Economics is ultimately a decision science, but the term “decision-making” means a wider bio-behavioral process incorporating both passive and active functions encompassing a broad range of cognitive complexity. We hope this book has provided some additional “food-for-thought” regarding the connection between neuroeconomics and decision-making for further research and discourse among academicians as well as practitioners.

Bryan Christiansen
PryMarke LLC, USA

Ewa Lechman
Gdansk University of Technology, Poland

REFERENCES


