Behavioural Decision Making I: Attention, Experience and Influence

2020-2021 Academic Year
Master of Research in Economics, Finance and Management

1. Description of the subject

- Behavioural Decision Making I: Attention, Experience and Influence
- Code: 32587
- Total credits: 6 ECTS — Workload: 150 hours
- Term: 2nd
- Type of subject: Optative
- Department of Economics and Business
- Teaching team: Gael Le Mens / Mikhail Spektor

2. Teaching guide

Introduction

People routinely make choices in complex environments they do not fully understand. In such settings, they cannot consciously evaluate the available alternatives on all their attributes and then make a utility-maximizing choice. Nevertheless, people still make choices and bear the consequences of these choices. How do they manage to do this?

In this research seminar, you will learn the foundations of the academic field that focuses on this question: Behavioral Decision Making. The field has been pivotal in the development of behavioral economics and recent Nobel Laureates who contributed to it include Daniel Kahneman (2002) and Richard Thaler (2017).

On the topic of judgment formation and decision making, we will introduce a complementary perspective to those taught in traditional and behavioral economics courses. After taking this course, you will have acquired new conceptual frameworks and tools that are useful for the generation of innovative research ideas in fields such as micro-economics, applied and political economics, finance, or management. This course is also relevant if you plan to work in the industry in areas in which understanding and predicting how consumers and citizens will react to the introduction of new policies, technologies, services or products is important.

This course puts an emphasis on different aspects of experience and how it affects (social) valuations and individual choices in different domains, from games against nature to behavior in social networks.

This class can be taken by MSc students from the GSE and by MRES students. It can be taken **individually**, as a pair of courses together with Behavioral Decision Making II, or as part of the **behavioral economics and decision-making track**. More information on this track is provided below, in section 4.

Teaching methodology

The course has a research focus and will mostly be conducted in seminar style. The professors will provide introductions and explanations of key ideas throughout the course, but most sessions will consist of discussions of research papers led by the students. Typically, each session will involve the discussion of one or two papers. For each paper, one student will be in charge of presenting the paper and another student will be the discussant, which involves commenting on the paper and introducing critical points to discuss. Then the whole class will participate in the discussion, and all students will be expected to come to class prepared to discuss the papers. Each student will be the presenter and the discussant at least once, depending on the number of students. The professors will moderate the discussions and make sure that they cover all the relevant points of each paper.

As preparation for the choice prediction competition (see below), the professors will dedicate a part of the course to an overview of relevant techniques related to choice modeling. As a course requirement, the students need to know at least one data-analysis language of their choice (or be willing to acquire the necessary knowledge in their free time) at a level comparable to what would be required for an econometrics course.

Content

1. **Reinforcement learning and evaluative judgment**

   In many settings, people tend to repeat positive experiences and avoid negative experiences. We will show how this basic feature of human behavior leads to systematic judgment biases such as prejudice and behavioral patterns such as risk-aversion.

   Core reading: Denrell, J. (2005). Why most people disapprove of me: experience sampling in impression formation. *Psychological Review*, *112*(4), 951–978.

2. **Information search in decisions under uncertainty:**

   We will discuss different modes of information acquisition in decisions under uncertainty and how these modes affect individual choices.

   Core reading: Hertwig, R., & Erev, I. (2009). The description-experience gap in risky choice. *Trends in Cognitive Sciences*, *13*, 517–523.

3. **Computational and neural underpinnings of choices**

   We will draw on literature from the field of *Neuroeconomics* to look at how concepts relevant for choices (such as value and the environment) are represented computationally.

   Core reading:

   Daw, N. D., Gershman, S. J., Seymour, B., Dayan, P., & Dolan, R. J. (2011). Model-based influences on humans' choices and striatal prediction errors. *Neuron*, *69*(6), 1204–1215.

4. **Judgments based on samples**

   We will discuss how people form beliefs about probability distributions (e.g. wealth distribution) based on their experience of the social environment in which they find themselves.

   Core reading: Galesic, M., Olsson, H., & Rieskamp, J. (2018). A sampling model of social judgment. *Psychological review*, 125(3), 363.

5. **Reinforcement by the crowd on social media**

   We will discuss how 'likes' provided by our connections on social media or our followers on twitter affect our attitudes and what we post online.

   Core reading: Schöll, N., Gallego, A., Le Mens, G. How Social Media Feedback Contributes to Gender Differences in Online Discourse. *Working Paper*.

6. **Mental representations of alternatives**

   We will learn how we create abstract mental representations to store our experiences in memory (concepts) and how these affect perception, inferences and predictions.

   Core reading: Hannan, Michael T., Gaël Le Mens, Greta Hsu, Balázs Kovács, Giacomo Negro, László Pólos, Elizabeth Pontikes, and Amanda J. Sharkey. *Concepts and Categories: Foundations for Sociological and Cultural Analysis*. Columbia University Press, 2019. Chapters 2, 3, 4.

7. **Multi-attribute, multi-alternative context effects:**

   We will learn about behavioral phenomena that arise when multiple choice alternatives are described on more than one attribute.

   Core reading: Rieskamp, J., Busemeyer, J. R., & Mellers, B. A. (2006). Extending the bounds of rationality: Evidence and theories of preferential choice. *Journal of Economic Literature*, *44*, 631–661

8. **Concepts and categories affect valuation**

We will discuss a theory of how concepts affect valuation of choice alternatives in settings where the attributes of the alternatives are unclear, or ambiguous.
Core reading: Hannan, Michael T., Gaël Le Mens, Greta Hsu, Balázs Kovács, Giacomo Negro, László Pólos, Elizabeth Pontikes, and Amanda J. Sharkey. *Concepts and Categories: Foundations for Sociological and Cultural Analysis*. Columbia University Press, 2019. Chapter 12.

9. **Response times in economic decision making:**
   We will look at response in decision making, what information about the choice process they convey and how agents use response times in economic settings.
   Core reading:
   Colonius, H., & Marley, A. A. J. (2015). Decision and choice: Random utility models of choice and response time. In *International Encyclopedia of the Social & Behavioral Sciences* (pp. 901–905). Elsevier.

10. **Attentional processes involved in decision making:**
    Attention plays a crucial role in the decision-making process. We will consider implications of attentional phenomena on theories of decision-making and vice versa.
    Core reading: Krajbich, I., Armel, C., & Rangel, A. (2010). Visual fixations and the computation and comparison of value in simple choice. *Nature Neuroscience, 13*, 1292–1298.

Assessment and Grading System

The evaluation of the course will consist of two main components:

a) *Participation in class (30%):* As described in the methodology section, each student will be required to lead the discussion of a paper and to act as a discussant at least once, depending on the number of students. Additionally, the students will be expected to come to class prepared to discuss the papers and will be encouraged to participate in all the discussions conducted in class.
b) *Final assignment "Choice prediction competition" (70%):* This is a modeling and programming assignment in which students will have to apply the theoretical knowledge practically and predict behavior of individuals using a model or combination of models of their choice. This will be run as a prediction competition in which the individual student with the best model will obtain a grade bonus.
   The instructors will first run a behavioral experiment that is similar to one of the studies discussed in class. The experimental data will be split into a training set and a test set. Students will be provided with a comprehensive description of the instructions that were shown to the participants, a description of the task faced by the participants, and with the training set, on which they can test their decision model(s) and estimate their model parameters. The goal is to submit a single model that obtains the best predictive performance on the *test* set. Students will have to their code and their predictions so that the instructors can assess the out-of-sample predictive accuracy of the model. Students will have to write a short paper in which they describe their submitted model, the reasons for their modeling choice, and the anticipated performance of their model. The assignment grade will depend both on the paper and the rank in the prediction competition.

There will be no exam in this course.

3. Bio of Instructors

Gaël Le Mens is a Full Professor in the Department of Economics and Business at UPF. His research focuses on learning by individuals and organizations. Several his papers explain how individuals might develop and maintain inaccurate beliefs because they rely on the biased samples of information they obtain from their experiences. In related projects on the dynamics of social processes, he has examined the development of technological trajectories, the evolution of cultural tastes and their consequences for organizational viability, the evolution of organizational inertia and dynamics of organizational failure. He is the holder of a €1.2M ERC Consolidator grant on belief and attitude change. Gaël's research has been published in top scientific journals such as Psychological Review, the Proceedings of the National Academy of Science of the USA (PNAS), Cognition, Behavioral and Brain Sciences, Organization Science and Administrative Science Quarterly. Popular accounts have appeared in the New York Times, the Times (London), WSJ.com, FT.com, USA Today, ABCNews.com, Focus and other in-print and online periodicals. He has taught graduate courses at UPF, INSEAD, London Business School, ESADE, and the University of Lugano in Switzerland. He has given invited lectures at Stanford, MIT and IESE.

Mikhail Spektor is an Assistant Professor in the Department of Economics and Business at the UPF. His main line of research focuses on the processes underlying individual decision making, in particular when choices violate classical notions of economic rationality. He investigates how individuals learn about the properties of choice alternatives and how value is represented. His research on these topics has been published in leading scientific journals, including *Psychological Review, Psychological Science,* and *eLife*.

4. Behavioral economics and decision-making track.

Fall term (September – December)

- Topics in Economic Theory: Behavioral Decision Theory (I and II, taught by Larbi Alaoui and Jose Apesteguia).

Winter term (January – March)

- Behavioral Decision Making I: Attention, Experience and Influence (taught by Gaël Le Mens and Mikhail Spektor)

Spring term (April – June)

- Behavioral Decision Making II: The Psychology of Economics Decisions (taught by Daniel Navarro-Martinez).
- Experimental Economics (taught by Rosemarie Nagel)

These courses cover different, and complementary, approaches to analyzing decision making. Topics in Economic Theory: Behavioral Decision Theory (I and II) falls within behavioral economics and decision theory, and focuses on modeling behavioral phenomena that do not fall within standard rational choice theory. Behavioral Decision Making I: Attention, Experience and Influence focuses on how attentional processes, past experiences, the social environment, and recommendation systems affect beliefs and preferences. Behavioral Decision Making II: The Psychology of Economics Decisions draws from research in both behavioral economics and psychology to investigate topics such as preference reversals, self-control, the role of emotions in decision making, and choice architecture. Experimental Economics teaches methods used in the field of experimental economics and discusses experiments that focus on interactive situations.