

## **ECON 1820: Behavioral Economics**

**Spring 2015**

**Brown University**

### **Course Description**

Within economics, the standard model of behavior is that of a perfectly rational, self interested utility maximizer with unlimited cognitive resources. In many cases, this provides a good approximation to the types of behavior that economists are interested in. However, over the past 30 years, experimental and behavioral economists have documented ways in which the standard model is not just wrong, but is wrong in ways that are important for economic outcomes. Understanding these behaviors, and their implications, is one of the most exciting areas of current economic inquiry.

The aim of this course is to provide a grounding in the main areas of study within behavioral economics, including temptation and self control, fairness and reciprocity, reference dependence, bounded rationality and choice under risk and uncertainty. For each area we will study three things:

1. The evidence that indicates that the standard economic model is missing some important behavior
2. The models that have been developed to capture these behaviors
3. Applications of these models to (for example) finance, labor and development economics

As well as the standard lectures, homework assignments, exams and so on, you will be asked to participate in economic experiments, the data from which will be used to illustrate some of the principals in the course. There will also be a certain small degree of classroom ‘flipping’, with a portion of many lectures given over to group problem solving. Finally, an integral part of the course will be a research proposal that you must complete by the end of the course, outlining a novel piece of research that you would be interested in doing.

This course will count as a ‘mathematical economics’ course for the APMA/Economics, Mathematical Economics and CS/Economics concentrations.

### **Prerequisites**

Students will be expected to be familiar with the material in ECON 1110 (or, ideally, ECON 1130). The course will make heavy use of mathematical tools, so MATH 0060 or above is also required. Game theory (ECON 1870) would also be useful, but is not required.

### **Assessment**

Assessment will be based on 4 items:

- 20% Homework: There will be approximately 10 assignments over the semester, and these will be relatively tough.
- 20% Midterm
- 30% Final
- 30% Research proposal. Students will be expected to write a 10-15 page research proposal on one of the topics covered in the course. The proposal could be the description of a new an experiment, or the outline of a new model. A key part of the proposal will be a review of the current literature with respect to your proposal – explaining the way in which your research is novel relative to what has been done before. The writers of the best proposal will have the opportunity to run their experiment for real, or to develop their model into a full research paper. Depending on enrollment, proposals may be organized in groups.

### **Course Materials**

By and large, the course will be based on academic papers (which are available online) and lecture notes (which I will make available). However, there are four books that you may find useful. The first is “Lecture Notes in Microeconomic Theory” By Ariel Rubinstein, which is available for free download. The second is “Notes on the Theory of Choice” by David Kreps, which is a deceptively simple book that provides a fantastic introduction to classical decision theory. The third is “Advances in Behavioral Economics” by Colin Camerer, George Loewenstein and Matthew Rabin, three of the big hitters in behavioral economics. Finally there is “The Handbook of Experimental Economics” by John Kagel and Alvin Roth. Note that I am not suggesting that you need to buy any of these books, as they are expensive.

### **Administrative Details**

The class will meet in Building for Environmental Research & Teaching 015 between 1.00 and 2.20 on Tuesdays and Thursdays

Sections with the teaching assistant John McNeill will take place on Wednesdays at 12:00 in Smith-Buonanno G12 and 3:00 in Smith-Buonanno G18. The same materiel will be covered in each section. Sections will generally be used to discuss the homework from the previous week. They are not mandatory, but I strongly advise you to go to them

Mark's office hours are 2.00pm – 4.00pm on Wednesdays in 303c Robinson Hall (though feel free to get in touch outside these times if you need help).

John’s office hours are 1.30pm – 3.30pm on Mondays in the basement of Robinson Hall.

### *Homework Schedule*

Homework will be set on the Tuesday of each week, and will be due in the following Tuesday.

### *Contact Details*

## Mark Dean

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- Phone (401) 863-2097
- Website: www.econ.brown.edu/fac/Mark\_Dean/ (lecture notes will be posted here)

## John McNeill

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## **Topics**

In the course we will cover the following topics. NOTE: The readings are suggested but not mandatory.

Introduction (1 lecture): Why do we need behavioral economics? A guide to what the course (and behavioral economics in general) can and cannot teach you

- “Psychology and Economics” Matthew Rabin , Journal of Economic Literature 1998
- “Amos Tversky and the Ascent of Behavioral Economics.” David Laibson and Richard Zeckhauser. Journal of Risk and Uncertainty 1998.
- “Psychology and Economics: Evidence from the Field” Stefano DellaVigna, Journal of Economic Literature 2009

Utility Maximization (3 lectures): The most basic model in all of economics is that people make choices to maximize their utility. How can we test this model, and does it provide a good description of behavior? We will also discuss the relationship between ‘utility’ and ‘happiness’

- “Lecture Notes in Microeconomic Theory” by Ariel Rubinstein Chapters 1-3
- “Notes on the Theory of Choice”, David Kreps, Chapter 1-3
- “Who is (More) Rational” Syngjoo Choi, Shachar Kariv, Wieland Muller and Dan Silverman, NBER working paper 16791 2011
- “The Money Pump as a Measure of Revealed Preference” Fede Echenique, SangMok Lee and Matt Shum, Journal of Political Economy 2011
- “Choice under conflict: the dynamics of deferred decision.” Tversky, A., & Shafir, E. Psychological Science, 1992
- “When Choice is Demotivating: Can One Desire Too Much of a Good Thing?”, Iyengar, S. S., M. R. Lepper, Journal of Personality and Social Psychology, 2000
- "The Endowment Effect, Loss Aversion, and Status Quo Bias: Anomalies," Kahneman, Daniel & Knetsch, Jack L & Thaler, Richard H, Journal of Economic Perspectives, 1991

- “The Causes of Preference Reversal” Amos Tversky, Paul Slovic and Daniel Kahneman American Economic Review, 1990
- “Adding Asymmetrically Dominated Alternatives: Violations of Regularity and the Similarity Hypothesis,” Huber, Joel, John W. Payne, and Christopher P. Puto, Journal of Consumer Research, 1982
- “What Do You Think Would Make You Happier? What Do You Think You Would Choose?” Benjamin, Daniel J., Ori Heffetz, Miles S. Kimball, and Alex Rees-Jones , American Economic Review, 2012

Bounded Rationality (5 lectures): Economic models typically assume that decision makers have no important constraints on their ability to make rational decisions. What happens if we relax that assumption? We will focus on the possibility that the decision maker may not be fully aware of the alternatives they are choosing between and may have to pay cognitive costs in order to become better informed (models of ‘rational inattention’). We will also consider the role of ‘saliency’, which may make aspects of the decision problem more apparent to the decision maker. Finally we will consider applications to firm behavior and to policies aimed at ‘nudging’ people towards better decisions

- “Modelling Bounded Rationality” Ariel Rubinstein, MIT press 1998
- "Maps of bounded rationality: psychology for behavioral economics". Kahneman, Daniel 2003. The American Economic Review
- “Poverty Impedes Cognitive Function.” Mani, Anandi, Mullainathan, Sendhil, Shafir, Eldar, and Jiaying Zhao. 2013. Science, 341: 976-980.
- "Stochastic Choice and Consideration Sets," Paola, Manzini & Marco, Mariotti, SIRE Discussion Papers 2013-28, 2013
- "Revealed Attention" Y. Masatlioglu, D. Nakajima and E. Ozbay, American Economic Review, 2012
- "Consideration Sets and Competitive Marketing," Kfir Eliaz & Ran Spiegler Review of Economic Studies, 2011
- “Search and Satisficing” Andrew Caplin, Mark Dean and Daniel Martin, American Economic Review, 2011
- “Testing models of consumer search using data on web browsing and purchasing behavior.” Babur De Los Santos, Ali Hortacsu, and Matthijs R. Wildenbeest. American Economic Review, 2012
- “Rational inattention to discrete choices: A new foundation for the multinomial logit model.” Filip Matejka and Alisdair McKay. CERGE-EI Working Papers wp442, 2011
- “Strategic pricing and rational inattention to quality.” Daniel Martin, Mimeo, New York University, 2013.

- "Salience and Consumer Choice", Pedro Bordalo, Nicola Gennaioli and Andrei Shleifer, Mimeo, 2012
- "On the strategic use of attention grabbers," Spiegel, Ran & Eliaz, Kfir, Theoretical Economics, 2011
- "Libertarian Paternalism is not an Oxymoron", Thaler, Richard H. and Cass R. Sunstein, Conference Series; [Proceedings], Federal Reserve Bank of Boston, 2003
- "Optimal Defaults and Active Decisions," Gabriel D. Carroll & James J. Choi & David Laibson & Brigitte C. Madrian & Andrew Metrick, The Quarterly Journal of Economics, 2009
- "From Intentions to Actions: A Model and Experimental Evidence of Inattentive Choice", Mimeo, Dmitry Taubinsky, 2013

Temptation and Self Control (5 lectures): Problems of temptation are ubiquitous: obesity, undersaving, smoking and drug use all appear to be related to a breakdown in self control. We discuss two approaches to modeling temptation, related to demand for commitment and preferences over time. We will discuss theoretical and empirical applications of these models to work contracts and firm behavior.

- "Procrastination, Deadlines, and Performance: Self-Control by Precommitment," Ariely, Dan, and Wertenbroch, Klaus. Psychological Science, 2002
- "Temptation and Self-Control" Faruk Gul and Wolfgang Pesendorfer, Econometrica, 2001
- "Golden Eggs and Hyperbolic Discounting", Laibson, David. Quarterly Journal of Economics 1997
- "Contracting with Diversely Naive Agents," Kfir Eliaz & Ran Spiegel, Review of Economic Studies, 2006
- "Commitment Devices", Bryan, Gharad and Karlan, Dean S. and Nelson, Scott, Annual Review of Economics, 2012
- "Paying Not To Go To The Gym", Della Vigna, S. and Malmendier, U., American Economic Review 2006
- "Self-Control at Work" Supreet Kaur, Michael Kremer and Sendhil Mullainathan, 2014, Journal of Political Economy.

Risk And Uncertainty (5 lectures): In many cases we have to make choices amongst alternatives that lead to risky and uncertain outcomes. We will begin by describing the standard model of 'expected utility maximization, before introducing some of the experimental evidence which suggests that these models are flawed, focusing on probability weighting, ambiguity aversion, and overoptimism. We will introduce models that can account for these behaviors, and consider applications to insurance and pricing

- “Lecture Notes in Microeconomic Theory” by Ariel Rubinstein Chapter 7
- “Notes on the Theory of Choice”, David Kreps, Chapter 4-7
- "Developments in Non-expected Utility Theory: The Hunt for a Descriptive Theory of Choice under Risk," Chris Starmer, Journal of Economic Literature, 2000
- "Prospect Theory: An Analysis of Decision under Risk", Kahneman, Daniel, and Amos Tversky, Econometrica, 1979
- “Ellsberg Revisited: An Experimental Study," Yoram Halevy, Econometrica, 2007
- "Overconfidence and Excess Entry: An Experimental Approach," Camerer, C. and Lovallo, D, American Economic Review, 1999
- “Rational Overoptimism (and Other Biases)”, Van den Steen, E, American Economic Review, 2004
- “Selling to Overconfident Consumers,” Grubb, Michael D, American Economic Review, 2009.

Reference Dependent Preferences (2 lectures): Several sources of evidence suggest that people tend to judge the value of alternatives relative to some reference point. People tend to be ‘loss averse’, weighting losses larger than gains. We will present evidence for reference dependent behavior, and models that have been used to capture reference dependence

- "The Endowment Effect, Loss Aversion, and Status Quo Bias: Anomalies," Kahneman, Daniel & Knetsch, Jack L & Thaler, Richard H, Journal of Economic Perspectives, 1991
- “Prospect Theory in the Wild: Evidence from the Field,” Camerer C., chap. 16 in D. Kahneman and A. Tversky, eds., Choices, Values, and Frames, 2000
- "A Model of Reference-Dependent Preferences," Botond Koszegi and Matthew Rabin, 2006; The Quarterly Journal of Economics, MIT Press, vol. 121(4), pages 1133-1165, November)
- “Contracts as Reference Points,” Hart, O. and Moore, J , Quarterly Journal of Economics,.2006

Other Regarding Preferences (2 lectures): Typically, economic models ignore motivations such as fairness and reciprocity. However, evidence suggests that these concerns are important in the laboratory and the field. We discuss this evidence, and introduce two models of ‘other regarding’ preferences, based on inequality aversion and fairness

- "Differences in Ultimatum Game Experiments: Evidence from a Meta-Analysis", Oosterbeek, Hessel, Randolph Sloof, and Gijs van de Kuilen (2004), Experimental Economics 2004

- "A Theory Of Fairness, Competition, And Cooperation" Ernst Fehr & Klaus M. Schmidt, Quarterly Journal of Economics, 1999
- "Incorporating Fairness Into Game Theory and Economics." Rabin, Matthew, The American Economic Review.1993
- "Understanding Social Preferences With Simple Tests," Gary Charness & Matthew Rabin, The Quarterly Journal of Economics, 2002
- "Social Preferences and the Response to Incentives: Evidence from Personnel Data," Oriana Bandiera & Iwan Barankay & Imran Rasul, The Quarterly Journal of Economics, 2005

### **Approximate Timeline**

1. **22<sup>rd</sup> Jan: Introduction and Overview:**
2. **27<sup>th</sup> Jan: Utility maximization 1**
3. **29<sup>th</sup> Jan: Utility maximization 2**
4. **3<sup>rd</sup> Feb: Utility maximization 3**
5. **5<sup>th</sup> Feb: Bounded Rationality 1**
6. **10<sup>th</sup> Feb: Bounded Rationality 2**
7. **12<sup>th</sup> Feb: Bounded Rationality 3**
8. **19<sup>th</sup> Feb: Bounded Rationality 4**
9. **24<sup>th</sup> Feb: Bounded Rationality 5**
10. **26<sup>th</sup> Feb: Temptation and Self Control 1**
11. **3<sup>rd</sup> March: Temptation and Self Control 2**
12. **5<sup>th</sup> March: Temptation and Self Control 3**
13. **10<sup>th</sup> March: Temptation and Self Control 4**
14. **12<sup>th</sup> March: Temptation and Self Control 5**
15. **17<sup>th</sup> March: Catch up and Summary**
16. **19<sup>th</sup> March: Midterm**
17. **31<sup>st</sup> March: Risk and Uncertainty 1**
18. **2<sup>rd</sup> April: Risk and Uncertainty 2**
19. **7<sup>th</sup> April: Risk and Uncertainty 3**

20. **9<sup>th</sup> April: Risk and Uncertainty 4**
21. **14<sup>th</sup> April: Risk and Uncertainty 5**
22. **16<sup>th</sup> April: Reference Dependence 1**
23. **21<sup>st</sup> April: Reference Dependence 2**
24. **23<sup>rd</sup> April: Other Regarding Preferences 1**
25. **28<sup>th</sup> April: Other Regarding Preferences 2**
26. **30<sup>th</sup> April: Optional Class TBD**
27. **9<sup>th</sup> May: Final**