

University of Toronto (Winter 2018-9)

Behavioural Economics (ECO3100H1S) Syllabus

Instructor:

Yoram Halevy

Office:

Max Gluskin House 307

Contact:

E-mail: yoram.halevy@utoronto.ca

Office hours:

Tuesday 14:00-15:00 or simply drop-in or coordinate by e-mail.

Course time and location:

Thursday: 16:00-18:00, GE 100.

Additional lessons: Monday 17:00-19:00 – I will coordinate at least one week in advance.

Grading:

We will discuss papers in class and you will be required to prepare a research proposal. The research proposal can be in core behavioral economics or can apply the methods to a field.

Course Description:

Behavioral economists study models of human decision making and the interaction among such decision makers in games and markets. As behavioral economists aspire to construct "realistic" models, many of the models are inspired by Psychological and experimental studies.

We will cover the following topics: individual choices under risk and uncertainty; intertemporal choice; other-regarding preferences; bounded rationality in individual decision-making and games; measuring rationality; Procedural rationality; Neuroeconomics/non-choice data, and the mindless-economics debate.

Learning Outcomes:

- Understand the flexibility and limitations of the economic approach to modeling behaviour.
- Know how to use existing behavioural models to understand new economic phenomena.
- Know to design experiments to evaluate a proposed behavioural model.
- Know to evaluate research in Economics and disciplines related to behavioural research.
- Be able to pose a novel research question, design plan to investigate it and conjecture how to answer it.

Pre-requisites:

Students enrolled in this course are expected to have first-year PhD core courses or alternative comparable background. In particular, Economics undergraduate background is *not sufficient*. If you are unsure, do not hesitate to consult me.

Papers:

Subset of the papers below will be assigned and discussed in class.

Prospect Theory:

- Kahneman and Tversky, "Prospect Theory: an Analysis of Decision under Risk", *Econometrica*, 1979
- Tversky and Kahneman, "Advances in Prospect Theory: Cumulative Representation of Uncertainty", *Journal of Risk and Uncertainty*, 1992
- Amos Tversky and Daniel Kahneman, "Loss Aversion in Riskless Choice: A Reference-Dependent Model" *The Quarterly Journal of Economics* Vol. 106, No. 4 (Nov., 1991), pp. 1039-1061
- Kahneman, Knetsch and Thaler, "Experimental Tests of the Endowment Effect and the Coase Theorem", *JPE*, 98 (6), 1990, 1325-1348
- Plott and Zeiler, "The Willingness to Pay-Willingness to Accept Gap, the 'Endowment Effect,' Subject Misconceptions, and Experimental Procedures for Eliciting Valuations", *AER*, 95 (3), 2005, 530-545
- Plott and Zeiler, "Exchange Asymmetries Incorrectly Interpreted as Evidence of Endowment Effect Theory and Prospect Theory?" *AER*, 97(4), 2007, 1449-1466.
- Koszegi and Rabin, *Quarterly Journal of Economics*, 2006
- Freeman, "Preferred Personal Equilibrium and Simple Choices" *JEBO* (2017)
- Freeman, "Expectation-Based Reference-Dependence and Choice under Risk" *EJ* 2018
- Masatlioglu and Raymond, "A Behavioral Analysis of Stochastic Reference Dependence" *AER* 106, 2760-2782, 2016
- Masatlioglu and Ok, "A Canonical Model of Choice with Initial Endowments", *REStud*, 81, 2014, 851-883.
- Ok, Ortleva and Riella, "Revealed (P)Reference Theory", *AER* 2015.
- Rabin, "Risk Aversion and Expected Utility Theory: A Calibration Theorem", *Econometrica*, 2000
- Samuelson, "Risk and Uncertainty: A Fallacy of Large Numbers", *Scientia*, 1963
- Rabin and Thaler, "Anomalies: Risk Aversion", *Journal of Economic Perspectives*, 2001
- Safra and Segal, "Calibration Results for Non-Expected Utility Theories", *Econometrica*, 2008
- Freeman, "Calibration without reduction for non-expected utility", *JET*, 2015
- Erev and Haruvy, "Learning and the Economics of Small Decisions", in: *Handbook of Experimental Economics Vol. 2* Edited by Roth and Kagel, 2009
- Ebert and Strack, "Until the bitter end: on prospect theory in dynamic context," *AER*, 2015
- Steiner and Stewart, "Perceiving Prospects Properly," *AER* 2016

NEU under Risk:

- Yaari (ECMA, 1987)
- Chew (ECMA,1983)
- Dekel (JET, 1986)
- Gul (ECMA, 1991)
- Machina (JEP,1987)
- Cerreia-Vioglio, Dillenberger and Ortoleva (ECMA 2015)
- Freeman, Halevy, Kneeland, “Eliciting Risk Preferences Using Choice Lists” (QE 2019).

Ambiguity:

- Ellsberg, “Risk Ambiguity and the Savage Axioms”, *Quarterly Journal of Economics*, 1961
- Schmeidler, “Subjective Probability and Expected Utility without Additivity”, *Econometrica*, 1989
- Schmeidler, “Integral Representation Without Additivity”, Proceedings of the American Mathematical Society, 1986
- Gilboa and Schmeidler, “Maxmin Expected Utility with Non-Unique Prior”, *Journal of Mathematical Economics*, 1989.
- Fox and Tversky, “Ambiguity Aversion and Comparative Ignorance”, *Quarterly Journal of Economics*, 1995
- Halevy and Feltkamp, “A Bayesian Approach to Uncertainty Aversion”, *Review of Economic Studies*, 2005
- Halevy, “Ellsberg Revisited: An Experimental Study”, *Econometrica*, 2007
- Chew, Miao and Zhong, “Partial Ambiguity”, ECMA 2017
- Klibanoff, Marinacci and Mukerji, “ A Smooth Model of Decision Making Under Ambiguity”, *Econometrica*, 2005
- Seo, “Ambiguity and Second Order beliefs”, *Econometrica*, 2009
- Amarante, Halevy and Ozdenoren, “ Uncertainty and Compound Lotteries: Calibration”, mimeo, 2010
- Epstein, “A Paradox for the `Smooth Ambiguity’ Model of Preference”, *Econometrica*, 2010
- Klibanoff, Marinacci and Mukerji, “On the Smooth Ambiguity Model: A Reply”, *Econometrica*, 2012
- Cubitt, de Kuilen and Mukerji, “Discriminating between Models of Ambiguity Attitude: a Qualitative Test” (JEEA, forthcoming).
- Critique (Al-Najjar and Weinstein Economic and Philosophy special issue)
- Application:
 - Survey (Mukerji and Tallon)
 - Asset markets (Epstein and Schneider)
 - Optimal Auctions (Bose, Ozdenoren and Pape TE, 2006)
- Epstein and Halevy, “Ambiguous Correlation,” *Review of Economic Studies* (forthcoming)

Time Preference and Self Control:

Early Papers:

- Koopmans, "Stationary Ordinal Utility and Impatience", *Econometrica*, 1960
- Fishburn and Rubinstein, "Time Preference", *International Economic Review*, 1982
- Strotz, "Myopia and Inconsistency in Dynamic Utility Maximization", *Review of Economic Studies*, 1955
- Pollak, "Consistent Planning", *The Review of Economic Studies*, 1968
- Peleg and Yaari, "On the Consistent Course of Action when Tastes are Changing", *Review of Economic Studies*, 1973
- Phelps and Pollak, "On Second-Best National Saving and Game-Equilibrium Growth", *Review of Economic Studies*, 1968
- Chew Epstein IER 1989
- Epstein Zin ECMA 1989
- Duffie Epstein ECMA 1992
- Chew Epstein JET 1990

Survey:

- Frederick, Loewenstein and O'Donoghue, "Time Discounting and Time Preference: A Critical Review", *Journal of Economic Literature*, 2002

Applications of Quasi-hyperbolic Discounting:

- Laibson, "Golden Eggs and Hyperbolic Discounting", *Quarterly Journal of Economics*, 1997
- O'Donoghue and Rabin, "Doing It Now or Later", *American Economic Review*, 1999

Rubinstein's Critique:

- Rubinstein, "A theorist's view of experiments", *European Economic Review*, 2001
- Rubinstein, "Economics and Psychology? The Case of Hyperbolic Discounting", *International Economic Review*, 2003

Time and Risk:

- Halevy, "Strotz meets Allais: Diminishing Impatience and the Certainty Effect", *American Economic Review*, 2008
- Chakraborty, Halevy and Saito, "The Relation Between Behavior under Risk and over Time" (working paper).
- Halevy, "Diminishing Impatience: Disentangling Time Preference from Uncertain Lifetime", (working paper, 2005)
- Baucells and Heukamp, "Probability and Time Tradeoff", MS, 2012
- Epper and Fehr-Duda "Missing Link" (working paper)

- Chakraborty, “Present Bias” (working paper)
- DeJarnette, Dillenberger, Gottlieb and Ortoleva, “Time Lotteries and Stochastic Impatience” (working paper)
- Dillenberger, Gottlieb and Ortoleva, “Stochastic Impatience and the Separation of Time and Risk Preferences” (working paper)
- Gabaix and Laibson, “Myopia and Discounting” (working paper)

Preference over menus:

- Kreps, “A Representation Theorem for ‘preference for Flexibility’”, *Econometrica*, 1979
- Dekel, Lipman and Rustichini, “Representing Preferences with A Unique Subjective State Space”, *Econometrica*, 2001
- Dekel, Lipman, Rustichini and Sarver: “Representing Preferences with A Unique Subjective State Space: A Corrigendum”, *Econometrica*, 2007
- Gul and Pesendorfer, “Temptation and Self Control”, *Econometrica*, 2001
- Gul and Pesendorfer, “Self-Control and the Theory of Consumption”, *Econometrica*, 2004
- Dekel and Lipman, “Costly self-Control and Random Self-Indulgence” *Econometrica* 2012

Dual-Self:

- Thaler and Shafrin, “An Economic Theory of Self-Control”, *JPE* 1981
- Fudenberg and Levine, “A Dual Self Model of Impulse Control”, *American Economic Review*, 2006
- Fudenberg and Levine, “Risk, Delay and Convex Self-Control Costs”, *AEJ: Micro* 2011

Recent papers:

- Galperti and Strulovici, “A theory of intergenerational altruism” *ECMA* 2017
- Montiel and Strzalecki, “Axiomatization and Measurement of Quasi-hyperbolic Discounting”, *QJE* 2014

Experimental Papers:

- Andersen Harrison Lau Rutstrom (*ECMA* 2008)
- Andreoni Sprenger Estimating Time Preference (*AER* 2012)
 - Chakraborty, Calford, Fenig and Halevy (*ExpEco*, 2017)
- Andreoni and Sprenger Risk Preferences are not Time Preferences (*AER* 2012)
 - Cheung (*AER* 2015)
 - Epper and Fehr-Duda (*AER* 2015)
 - Miao and Zhong (*AER* 2015)
- Halevy, Time Consistency: Stationarity and Time Invariance (*ECMA* 2015)

- Augenblick, Niederle and Sprenger, (QJE 2015)
- Attema, Bleichrodt, Gao, Huang, Wakker (AER, 2016)

Other-Regarding Preferences:

- Geanakoplos, Pearce and Stacchetti, “Psychological Games and Sequential Rationality”, *Games And Economic Behavior*, 1989
- Rabin, “Incorporating Fairness into Game Theory and Economics”, *American Economic Review*, 1993
- Dufwenberg and Kirchsteiger, “A Theory of Sequential Reciprocity”, *Games and Economic Behavior*, 2004
- Battigalli and Dufwenberg, “Dynamic Psychological Games”, *Journal of Economic Theory*, 2009
- Levine, “Modeling Altruism and Spitefulness in Experiments”, *Review of Economic Dynamics*, 1998
- Fehr and Schmidt, “A Theory of Fairness Competition and Cooperation”, *Quarterly Journal of Economics*, 1999
- Binmore and Shaked, “Experimental Economics: Where next?”, *Journal of Economic Behavior and Organization*, 2010
- Fehr and Schmidt, “The Economics of Fairness, Reciprocity and Altruism – Experimental Evidence and New Theories”, in: *Handbook of the Economics of Giving, Altruism and Reciprocity*, vol 1, 2006
- Halevy and Peters, “Behavioral Bargaining” (working paper)

Measures of Choice Consistency

- Afriat, “Efficiency estimation of production function”, 1972, *IER*, 13 (3), 568-598.
- Afriat, “On a System of Inequalities in Demand Analysis: and extension of the classical method”, *International Economic Review*, 14 (2), 1973.
- Bronars, “The Power of Nonparametric Tests of Preference Maximization”, *ECMA*, 55 (3), 1987, 693-698.
- Beatty and Crawford, “How demanding is the Revealed Preference Approach to Demand”, *AER*, 101 (October 2011), 2782-2795.
- Varian, “Goodness-of-fit in optimizing models”, *Journal of Econometrics*, 1990, 125-140
- Echenique, Lee, Shum, “The Money-Pump as a measure of Revealed Preference Violations”, *JPE*, 119 (6), (2011), 1201-1223
- Andreoni and Miller, “Giving according to GARP: an experimental test of the consistency of preferences for altruism”, *ECMA*, 70 (2), 737-753, 2002.
- Choi, Kariv, Muller, Silverman, “Who is (More) Rational?” *AER*, 104 (6), 1518-1550, 2014
- Halevy, Persitz and Zrill, “Parametric Recoverability of Preferences”, *JPE* (2018)
- Halevy and Mayraz, “Models of Rationality: Act versus Rule-Based Decisions”

Level-k Thinking:

- Stahl and Wilson, "Experimental Evidence on Players' models of other players", *Journal of Economic Behavior and Organization*, 1994
- Stahl and Wilson, "On Players' Models of Other Players: Theory and Experimental Evidence", *Games and Economic Behavior*, 1995
- Nagel, "Unraveling in Guessing Games: An Experimental Study", *American Economic Review*, 1995
- Camerer, Ho, Chong, "A Cognitive Hierarchy Model of Games", *Quarterly Journal of Economics*, 2004
- Wang, Spezio, Camerer, "Pinocchio's Pupil: Using Eyetracking and Pupil Dilation to Understand Truth-telling in Deception in Sender-Receiver Games", *American Economic Review*, 2010
- Georganans, Healy and Weber On the Persistence of Strategic Sophistication (JET, 2015)
- Alaoui and Penta (REStud, 2016)
- Kneeland, "Identifying Higher-Order Rationality" (ECMA 2015)
- Friedenber, Kneeland and Kets "Is bounded rationality driven by limited ability"?

Models of Bounded Rationality:

- Manzini, Paola and Marco Mariotti, "Sequentially Rationalizable Choice", *American Economic Review*, 2007
- Masatlioglu, Yusufcan, Daisuke Nakajima and Erkut Y. Ozbay, "Revealed Attention", *American Economic Review*, 2012.
- Caplin and Dean (TE 2011) + Caplin, Dean and Martin (AER 2011)
- Ortoleva, Pietro, "Modeling the Change in Paradigm: Non-Bayesian Reactions to Unexpected News", *American Economic Review*, 2012.
- Agranov and Ortoleva "Stochastic Choice and Preferences for Randomization" (JPE, 2017)
- Matejka and McKay "Rational Inattention to Discrete Choices: A new foundation for the multinomial logit model" (AER, 2015)
- Caplin and Dean "Revealed Preference, Rational Inattention, and Costly Information Acquisition" (AER, 2015)

Replication:

- Camerer *et al* Science, 2016

Critique:

- Rubinstein, "Dilemmas of an Economic Theorist", *Econometrica*, 2006
- Rubinstein, "Discussion of 'Behavioral Economics'" in *Advances in Economics and Econometrics, Theory and Applications*, ninth World Congress of the Econometric Society
- Gul and Pesendorfer, "The Case for Mindless Economics"
- Pesendorfer, "Behavioral Economics Comes of Age", 2006
- Fudenberg, "Advances Beyond *Advances in Behavioral Economics*", *Journal of Economic Literature*, 2006

- Al Roth's critique page:
<http://web.stanford.edu/~alroth/critiques%20of%20experimental%20econ.html>