

Economics 142: Behavioral Economics

Spring 2009

Instructor Adam Sanjurjo Economics Annex, 246-0738(9),

asanjurjo@ucsd.edu

Office hours W 1:00-3:00 or by appointment

TA and office hours: Chulyoung Kim (chk002@ucsd.edu), Sequoyah Hall 224, M 10:00-11:30

Description: The course is divided into two parts. The first half, on behavioral decision theory, studies models in which standard economic rationality assumptions are combined with psychologically plausible assumptions on behavior. We consider whether the new models improve ability to predict and understand choice under uncertainty (and certainty), probabilistic judgment, and intertemporal choice. The second half, on behavioral game theory, studies how players model others' decisions in initial responses to games; and how players learn to predict others' decisions via learning in repeated play of analogous games. (Each half leaves out important topics, some covered in Economics 141, Experimental Economics. For example, the first half leaves out overconfidence, procrastination, and self-control; the second leaves out altruism, spite, trust, and reciprocity.)

Prerequisites: Econ 100B or 170B; Econ 100C is recommended but not required.

Organization: Economics 142 meets from 12:00 - 12:50 p.m. on Mondays, Wednesdays, and Fridays in Center Hall room 222. My office hours and the TAs' office hours are listed above and on webct. Your grade will be based on a midterm in class Monday, May 4, the beginning of the sixth week; and a final on Wednesday, June 10 from 11:30 a.m. –2:30 p.m. The midterm will count as one-third of your grade, and the final, which will cover both halves of the class, as two-thirds. Exams will be given only at the scheduled times except for compelling (and fully documented) medical excuses. It is your responsibility to avoid conflicts. During exams you may not use calculators (or other electronic devices), consult notes, books, or your classmates' exam papers. I take violations of academic honesty seriously. Any act of academic dishonesty will be reported to your academic dean, and will lead to a failing grade in the course and possibly dismissal from the university. I will also be posting two optional problem sets, which should be good practice for the exams.

Disclaimer: The materials used throughout this course are largely based on those generously provided to me by Professor Vincent Crawford. However, any mistakes made in posted lecture notes, problem sets, or exams are fully my responsibility.

Texts: There are no required texts. I have ordered copies of two recommended texts for the bookstore, which may be useful to people who are seriously interested in behavioral economics:

(“Advances”) Colin Camerer, George Loewenstein, and Matthew Rabin, editors, *Advances in Behavioral Economics*, Princeton, NJ: Princeton University Press, 2003. “Advances”

(“CC”) Colin Camerer, *Behavioral Game Theory: Experiments on Strategic Interaction*, Princeton, 2003

Copies of these are also on reserve in Geisel Library.

Outline and Readings I have listed many more readings than we can possibly cover in class, in case you wish to read further; the most important readings are marked *. Those few readings for which online access may be difficult are available via email (+); the others should be easy to find at JSTOR (<http://www.jstor.org/jstor/>), Google Scholar, or ScienceDirect. (I may be able to supply some of the readings myself if you cannot download them, but please try before asking me.)

1. Overview of Behavioral Decision Theory

*Matthew Rabin, "A Perspective on Psychology and Economics," *European Economic Review* 46 (2002), pp. 657-685; <http://dx.doi.org/10.1016/S0014-2921%2801%2900207-0>.

*Colin Camerer and George Loewenstein, "Behavioral Economics: Past, Present, Future," Chapter 1 in "Advances"; manuscript at <http://www.hss.caltech.edu/~camerer/ribe239.pdf>

*Daniel Kahneman, "Maps of Bounded Rationality: Psychology for Behavioral Economics," *American Economic Review* 93 (2003), 1449-1475; <http://links.jstor.org/sici?sici=0002-8282%28200312%2993%3A5%3C1449%3AMOBPRF%3E2.0.CO%3B2-%23>

Colin Camerer, pages 617-673 of "Individual Decision Making," Chapter 8 in John Kagel and Alvin Roth, editors, *The Handbook of Experimental Economics*, Princeton, NJ: Princeton University Press, 1995, pp. 587-703

Matthew Rabin, "Psychology and Economics," *Journal of Economic Literature* 36 (1998), pp. 11-46; <http://links.jstor.org/sici?sici=0022-0515%28199803%2936%3A1%3C11%3APAE%3E2.0.CO%3B2-B>

Daniel Kahneman, "A Psychological Perspective on Economics," *American Economic Review Papers and Proceedings* 93 (2003), pp. 162-168; <http://links.jstor.org/sici?sici=0002-8282%28200305%2993%3A2%3C162%3AAPPOE%3E2.0.CO%3B2-5>

2. Choice under Uncertainty (or Certainty)

a. Classical Expected Utility Model

*J. Marschak, "Scaling of Utilities and Probability," in Martin Shubik, editor, *Game Theory and Related Approaches to Social Behavior*, New York: John Wiley and Sons, 1964
<http://dss.ucsd.edu/~vcrawfor/ScalingOfUtilities.pdf> (open and use pdf menu to rotate image one quarter turn)

*Mark Machina, "Expected Utility Hypothesis," in John Eatwell, Murray Milgate, and Peter Newman, editors, *The New Palgrave: A Dictionary of Economics*, London: Macmillan Press and New York: Stockton Press, 1987, vol. 2, pp. 232-239
<http://dss.ucsd.edu/~vcrawfor/ExpectedUtilityHypothesis.pdf>

Paul Samuelson, "Comments on the Favorable-Bet Theorem," *Economic Inquiry* 12 (1974), pp. 345-55; reprinted in his *Collected Scientific Papers*, vol. IV, pp. 550-560

Paul Samuelson, "Risk and Uncertainty: A Fallacy of Large Numbers," *Scientia* 98 (1963), pp. 108-113; reprinted in his *Collected Scientific Papers*, vol. I, pp. 153-158

b. Loss Aversion, Reference Dependence, and Prospect Theory

- *Colin Camerer, “Three cheers--psychological, theoretical, empirical--for loss-aversion,” *Journal of Marketing Research*, 42 (May 2005), 129-133
<http://www.hss.caltech.edu/~camerer/lossaversionJMR2.doc>
- *Daniel Kahneman, Jack Knetsch, and Richard Thaler, “Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias,” *Journal of Economic Perspectives* 5 (1991), pp. 193-206;
<http://links.jstor.org/sici?sici=0895-3309%28199124%295%3A1%3C193%3AATEELA%3E2.0.CO%3B2-V>
- *Matthew Rabin and Richard Thaler, “Anomalies: Risk Aversion,” *Journal of Economic Perspectives* 15 (2001), pp. 219-232; <http://links.jstor.org/sici?sici=0895-3309%28200124%2915%3A1%3C219%3AARA%3E2.0.CO%3B2-B>
- *Jeremy Siegel and Richard Thaler, “Anomalies: The Equity Premium Puzzle,” *Journal of Economic Perspectives* 11 (1997), pp. 193-205; <http://links.jstor.org/sici?sici=0895-3309%28199724%2911%3A1%3C191%3AATEPP%3E2.0.CO%3B2-0>
- *+Botond Köszegi and Matthew Rabin, “A Model of Reference-Dependent Preferences,” *Quarterly Journal of Economics* 121 (2006), pp. 1133-1165;
<http://www.mitpressjournals.org/doi/pdf/10.1162/qjec.121.4.1133>
- Charles Plott and Kathryn Zeiler, “The Willingness to Pay-Willingness to Accept Gap, the ‘Endowment Effect,’ Subject Misconceptions, and Experimental Procedures for Eliciting Valuations,” *American Economic Review* 95 (2005), pp. 530-45; available through Ingenta Connect on campus: <http://uclibs.org/PID/31653>.
- Colin Camerer, “Prospect Theory in the Wild: Evidence from the Field,” in D. Kahneman and A. Tversky, editors, *Choices, Values, and Frames*, Cambridge: Cambridge University Press, 2002; Chapter 5 in “Advances”; <http://www.hss.caltech.edu/SSPapers/wp1037.pdf>.
- Justin Sydnor, “Abundant Aversion to Moderate Risk: Evidence from Homeowners Insurance,” manuscript <http://wsomfaculty.case.edu/sydnor/deductibles.pdf>
- Colin Camerer, Linda Babcock, George Loewenstein, and Richard Thaler, “Labor Supply of New York City Cabdrivers: One Day at a Time,” *Quarterly Journal of Economics* 112 (1997), pp. 407-441; Chapter 19 in “Advances”; <http://links.jstor.org/sici?sici=0033-5533%28199705%29112%3A2%3C407%3ALSONYC%3E2.0.CO%3B2-J>
- +Botond Köszegi and Matthew Rabin, “Reference-Dependent Risk Attitudes,” *American Economic Review*, 97 (2007), 1047-1073; available soon through Ingenta Connect on campus: <http://uclibs.org/PID/31653>.
- Colin Camerer, “Taxi Drivers and Beauty Contests” (amusing optional reading)
<http://www.hss.caltech.edu/%7Ecamerer/Camerer%20Feature.pdf>

3. Probabilistic Judgment

- *Amos Tversky and Daniel Kahneman, “Judgment under Uncertainty: Heuristics and Biases,” *Science* 185 (1974), pp. 1124 – 1131; <http://links.jstor.org/sici?sici=0036-8075%2819740927%293%3A185%3A4157%3C1124%3AJUHHAB%3E2.0.CO%3B2-M>
- Colin Camerer, pages 590-616 of “Individual Decision Making,” Chapter 8 in John Kagel and Alvin Roth, editors, *The Handbook of Experimental Economics*, Princeton, NJ: Princeton University Press, 1995, pp. 587-703
- Mahmoud El-Gamal and David Grether, “Are People Bayesian? Uncovering Behavioral

- Strategies,” *Journal of the American Statistical Association*, 90 (1995), pp. 1137-1145; <http://links.jstor.org/sici?sici=0162-1459%28199512%2990%3A432%3C1137%3AAPBUBS%3E2.0.CO%3B2-P>
- Matthew Rabin, “Inference by Believers in the Law of Small Numbers,” *Quarterly Journal of Economics* 117 (2002), pp. 775 – 816; <http://www.mitpressjournals.org/doi/pdf/10.1162/003355302760193896>
- Matthew Rabin and Dimitri Vayanos, “The Gambler’s and Hot-Hand Fallacies in a Dynamic-Inference Model,” manuscript, 2005; <http://elsa.berkeley.edu/~rabin/HotHand8.pdf>
- Linda Babcock and George Loewenstein, “Explaining Bargaining Impasse: The Role of Self-Serving Biases,” *Journal of Economic Perspectives* 11 (1997), pp. 109-126; Chapter 11 in “Advances”; <http://links.jstor.org/sici?sici=0895-3309%28199724%2911%3A1%3C109%3AEBITRO%3E2.0.CO%3B2-T>
- Henry Blodget, “Wall Street self-defense: Born Suckers: The Greatest Wall Street Danger of All: You,” *Slate*, December 14, 2004 (amusing optional reading) <http://dss.ucsd.edu/~vcrawfor/WallStreetBiases.html>
- Leonard Mlodinow, “Meet Hollywood’s Latest Genius: Then again, in 6 months he could be a loser. Box-office success is more random than you may think,” *LA Times*, July 2, 2006 (amusing optional reading) <http://dss.ucsd.edu/~vcrawfor/la-tm-random27jul02,1,1850294,full.story.html>

4. Intertemporal Choice

- *George Loewenstein and Richard Thaler, “Anomalies: Intertemporal Choice,” *Journal of Economic Perspectives* 3 (1989), pp. 181-193; <http://links.jstor.org/sici?sici=0895-3309%28198923%293%3A4%3C181%3AAIC%3E2.0.CO%3B2-K>
- *David Laibson, “Golden Eggs and Hyperbolic Discounting,” *Quarterly Journal of Economics* 112 (1997), pp. 443-478; Chapter 15 in “Advances”; <http://links.jstor.org/sici?sici=0033-5533%28199705%29112%3A2%3C443%3AGEAHD%3E2.0.CO%3B2-D>
- Shane Frederick, George Loewenstein, and Ted O’Donoghue, “Time Discounting and Time Preference: A Critical Review,” *Journal of Economic Literature* 40 (2002), pp. 351-401; Chapter 6 in “Advances”; <http://www.hss.caltech.edu/~camerer/NYU/03-LowensteinODonoghueFrederick+.pdf>; at JSTOR
- Ted O’Donoghue and Matthew Rabin, “Doing it now or later,” *American Economic Review* 89 (1999), 103–124; Chapter 7 in “Advances”; <http://links.jstor.org/sici?sici=0002-8282%28199903%2989%3A1%3C103%3ADINOL%3E2.0.CO%3B2-E>
- Ted O’Donoghue and Matthew Rabin, “Choice and Procrastination,” *Quarterly Journal of Economics* 116 (2001), 121-160; <http://links.jstor.org/sici?sici=0033-5533%28200102%29116%3A1%3C121%3ACAP%3E2.0.CO%3B2-%23>
- Carl Zimmer, “Time in the Animal Mind,” *New York Times*, 3 April 2007 (amusing optional reading) <http://dss.ucsd.edu/~vcrawfor/03time.html>

5. Overview of Behavioral Game Theory

- *CC, Chapter 1, “Introduction”; Appendix 1.1, “Basic Game Theory”; and Appendix 1.2, “Experimental Design”; http://dss.ucsd.edu/~vcrawfor/Camerer_Ch1intro.pdf
- *VC, Sections 1, “Introduction”; 2, “Theoretical Frameworks and Unresolved Questions”; 3, “Experimental Designs”; and 7, “Conclusion”
- (“VC”) is Vincent Crawford, “Theory and Experiment in the Analysis of Strategic Interaction,”

Chapter 7 in David Kreps and Ken Wallis, Editors, *Advances in Economics and Econometrics: Theory and Applications, Seventh World Congress*, Vol. I, Cambridge 1997; Chapter 12 in “Advances”; manuscript at <http://dss.ucsd.edu/~vcrawfor/ShortTh&Exp.pdf>.

Great Summer Reading: Thomas Schelling, *The Strategy of Conflict*, Oxford 1960 or Harvard 1980

6. Theory and evidence on initial responses to games

6a. Iterated dominance and equilibrium in simultaneous-move games

*CC, Chapter 5, “Dominance-Solvable Games”

*VC, Section 4, “Dominance and Iterated Dominance”; manuscript at

<http://dss.ucsd.edu/~vcrawfor/ShortTh&Exp.pdf>

Adam Brandenburger, “Knowledge and Equilibrium in Games,” *Journal of Economic Perspectives* 6 (1992), 83-101; <http://links.jstor.org/sici?sici=0895-3309%28199223%296%3A4%3C83%3AKAEIG%3E2.0.CO%3B2-S>

Rosemarie Nagel, “Unraveling in Guessing Games: An Experimental Study,” *American Economic Review* 85 (1995), 1313-1326; <http://links.jstor.org/sici?sici=0002-8282%28199512%2985%3A5%3C1313%3AUIGGAE%3E2.0.CO%3B2-V>

Colin Camerer, “Taxi Drivers and Beauty Contests” (amusing optional reading)

<http://www.hss.caltech.edu/%7Ecamerer/Camerer%20Feature.pdf>

Miguel Costa-Gomes and Vincent Crawford, “Cognition and Behavior in Two-Person Guessing Games: An Experimental Study,” *American Economic Review* 96 (December 2006), 1737-1768; at <http://dss.ucsd.edu/~vcrawfor/#Guess>

Camerer, Colin, Ho, Teck-Hua and Chong, Juin Kuan, “A Cognitive Hierarchy Model of Games,” *Quarterly Journal of Economics* 119 (2004), 861-898; <http://www.hss.caltech.edu/~camerer/qjefinal6.pdf>

Vincent Crawford and Nagore Iriberri, “Fatal Attraction: Focality, Naivete, and Sophistication in Experimental Hide-and-Seek Games,” *American Economic Review*, 97 (2007), in press 2005; at <http://dss.ucsd.edu/~vcrawfor/#Hide>

6b. Backward induction, subgame-perfectness, and forward induction in extensive-form games

*VC, Sections 4.2, “Ultimatum and alternating-offers bargaining”; 5.1, “Signaling games”; and 6.3, “Simultaneous coordination revisited”; manuscript at

<http://dss.ucsd.edu/~vcrawfor/ShortTh&Exp.pdf>

CC, Section 4.2, “Structured Bargaining”; Chapter 5, “Dominance-Solvable Games”; and Section 7.2, “Asymmetric Players: Battle of the Sexes”

T. Randolph Beard and Richard Beil, “Do People Rely on the Self-interested Maximization of Others? An Experimental Test,” *Management Science* 40 (1994), 252-262; at JSTOR

Alvin Roth, Vesna Prasnikar, Masahiro Okuno-Fujiwara, and Shmuel Zamir, “Bargaining and Market Behavior in Jerusalem, Ljubljana, Pittsburgh, and Tokyo: An Experimental Study,” *American Economic Review* 81 (1991), 1068-1095; at JSTOR

6c. Selection among multiple strict equilibria via structure, framing, fairness, or complexity

*VC, Section 5, “Simultaneous Coordination”; manuscript at

<http://dss.ucsd.edu/~vcrawfor/ShortTh&Exp.pdf>

CC, Section 4.1, “Unstructured Bargaining”; Chapter 7, “Coordination”

Judith Mehta, Chris Starmer, and Robert Sugden, “The Nature of Salience: An Experimental

- Investigation of Pure Coordination Games,” *American Economic Review* 84 (1994), 658-674; at JSTOR
- Vincent Crawford, Uri Gneezy, and Yuval Rottenstreich, “The Power of Focal Points is Limited: Even Minute Payoff Asymmetry May Yield Large Coordination Failures,” manuscript, 2007; <http://dss.ucsd.edu/~vcrawfor/MS20050181CrawfordGneezyRottenstreichResubmission.pdf>
- Vincent Crawford “Adaptive Dynamics in Coordination Games,” *Econometrica* 63 (January 1995), 103-143: Section 2 (pp. 106-109, especially footnote 8); <http://dss.ucsd.edu/~vcrawfor/Crawford95EMT.pdf>
- Alvin Roth, "Bargaining Phenomena and Bargaining Theory," Chapter 2 (pp. 14-41) in Roth (ed.), *Laboratory Experimentation in Economics: Six Points of View*, Cambridge, 1987
- Alvin Roth, "Toward a Focal-Point Theory of Bargaining," Chapter 12 (pp. 259-268) in Roth, (ed.), *Game-Theoretic Models of Bargaining*, Cambridge, 1985

7. Equilibrium selection via learning

- *VC, Section 6, “Dynamic Evidence” ; manuscript at <http://dss.ucsd.edu/~vcrawfor/ShortTh&Exp.pdf>
- John Van Huyck, Joseph Cook, and Raymond Battalio (1997): “Adaptive Behavior and Coordination Failure,” *Journal of Economic Behavior and Organization* 32, 483-503; http://erl.tamu.edu/jvh_gtee/os3.pdf; <http://www.sciencedirect.com/science/article/B6V8F-3SX27P7-1/2/5d738d78ba1557a7a2046cabd96661c6>
- Vincent Crawford, “Learning Dynamics, Lock-in, and Equilibrium Selection in Experimental Coordination Games,” in Ugo Pagano and Antonio Nicita, editors, *The Evolution of Economic Diversity*, London and New York: Routledge, 2001, 133-163; UCSD Discussion Paper 97-19; at <http://dss.ucsd.edu/~vcrawfor/ucsd9719.pdf>
- Vincent Crawford "Adaptive Dynamics in Coordination Games," *Econometrica* 63 (January 1995), 103-143; <http://dss.ucsd.edu/~vcrawfor/Crawford95EMT.pdf>
- Vincent Crawford and Bruno Broseta, "What Price Coordination? The Efficiency-enhancing Effect of Auctioning the Right to Play,” *American Economic Review* 88 (March 1998), 198-225; <http://dss.ucsd.edu/~vcrawfor/CrawBro98AER.pdf>