

14.13: Psychology and Economics

Prof. Frank Schilbach (MIT)

Preliminary Syllabus for Fall 2017

Instructor: Frank Schilbach

Email: fschilb@mit.edu

Office: E52-560

Office hours by appointment – please sign up [HERE](#).

Lectures: Monday and Wednesday 10:30 am to noon

Course Overview: Behavioral Economics (aka ‘Psychology and Economics’; or ‘Economics and Psychology’) is a growing sub-field of economics that incorporates insights from psychology and other social sciences into economics. The broad goal of these efforts is to make economic models more realistic and to strengthen their predictive power by incorporating previously neglected features such as problems with self control, concerns for others, or aversion to losses. This course discusses recent advances in behavioral economics by reviewing some of the assumptions made in mainstream economic models, and by discussing how human behavior systematically departs from these assumptions, drawing on experiments from psychology and other fields that have been used to learn about preferences, cognition, and behavior. Topics include deviations from the standard model in terms of (i) preferences (present bias, reference dependence, and social preferences), (ii) beliefs (overconfidence, projection bias, and attribution bias), and (iii) decision-making (cognition, attention, and framing), as well as (iv) market and policy reactions to such deviations. Applications will cover a wide range of fields, including labor and public economics, industrial organization, health economics, finance, and development economics. Students participate in surveys and experiments in class, review evidence from lab and field experiments, and examine how the results can be integrated into existing or novel models.

Prerequisites. As the class is considering *deviations* from mainstream models of economics, a solid grasp of these models is essential for mastering the material. As a result, 14.01 or an equivalent introductory microeconomics course is a prerequisite for this class. If you have not taken 14.01, please talk to me after the first lecture to discuss whether this class is suitable for you.

Reading materials. There is no textbook for this course. The fairly detailed lecture slides are meant to be self-explanatory, and they are complemented by a set of readings for each class, as specified in the reading list. These readings will feature in lectures, quizzes, exams and problem sets. If a reading is marked as required, you are responsible for preparing the paper prior to class, which means reading the abstract, introduction and conclusion (not

necessarily the body of the paper), and additional sections of the paper as specified in the reading list.

Class attendance. Given that the class does not follow a textbook, most of the course materials will be based on empirical and theoretical papers from leading academic journals. While lectures notes are extensive, the course material will be difficult to master without attending lectures. Moreover, there will be unannounced short quizzes at the start of approximately six of the lectures throughout the semester. These quizzes will test basic knowledge of starred readings and materials covered in the previous lecture, and they will count toward your grade for the course (see more below). If you pay attention in lectures and do the specified readings before class, the quizzes will be easy for you.

Grading. The class is *not* graded on a curve. It is possible that everyone will do very well, which will make me very happy. However, if you do not put effort into this class, you will likely not do well, i.e. you may receive a C or worse. If we think you are headed for a D or an F, we will try to warn you before the drop date. Your grade in this course will be composed of four components as specified below.

- **Short quizzes (5%).** The quizzes are meant to help you to keep up with the materials of the course throughout the semester. Only your best three (out of approximately four to five) quizzes will count toward your grade.
- **Class participation (10%).** Regular class participation will be rewarded. Both the quantity and quality of your comments in class count toward your participation grade.
- **Problem sets (25%).** There will be six problem sets over the course of the semester, which will cover materials from lecture, readings, and class discussions. You must submit your problem sets in pdf-form using Stellar. Late problem sets will not be accepted, and there won't be any exceptions to this policy. To accommodate for unanticipated events, illness, conflicts in your schedule, or other rational or irrational reasons that may prevent you from submitting the problem set on time, we will automatically drop the problem set with your lowest score.

Note that problem sets are due at 8 pm each day. Please make sure to submit your problem set a bit earlier to account for network issues or other unforeseen problems. Late problem sets will not be accepted for such reasons.

- **Exams (60%).** There will be two closed-book, closed-notes exams of 85 minutes in length each: First, there will be a mid-term exam in class, which will count for 25% of your grade. Second, there will be a cumulative end-term exam (also in class), which will count for 35% of your grade.

Questions regarding grading. You should direct any questions regarding grading first to your TA. Importantly, you must submit your exam or problem set no more than one week after the assignment has been handed back. To have your grading be reconsidered, take the following steps:

- (1) Take the material to the TA along with a note describing specifically what you believe the problem to be. Include your email address in this note.

- (2) After the TA has contacted you by email, schedule an in-person meeting to discuss the issue.

Getting help outside of class. If you have questions regarding the class material or problem sets, there are four ways to get help:

- (i) Use the course website. We will have threaded discussions there (monitored by the TA and professor as needed) for all problem sets and class topics. You should get a pretty quick response and a good answer.
- (ii) Drop in during TA office hours.
- (iii) Go to Prof. Schilbach's office hours.
- (iv) Ask questions during recitation and in class.

Please try to avoid sending us your class-related questions by email (except for personal class-related matters). The discussion forum is a more efficient way for us to communicate with you, and this way of communicating also benefits your classmates.

Tentative Schedule. Below is a tentative schedule for the semester, along with the corresponding reading materials for each class. Class topics and readings are subject to revision, i.e. some topics might be revised or even dropped altogether if time runs short. Starred readings are required – please read these papers before coming to class. I will announce in each class which paper(s) to read for the subsequent class(es).

Non-starred readings are *not* required, but they may help you understand the materials covered in lectures or problem sets. That is, you might want to consult these papers in case you'd like to deepen your understanding of the material covered in class (or perhaps you'd just like to find out more!), but we will not test you on the content of these papers beyond the parts that are covered in class.

General Books of Interest (not required)

- Kahneman et al. (1982): *Judgment Under Uncertainty: Heuristics and Biases*
- Kahneman and Tversky (2000): *Choices, Values and Frames*
- Kahneman (2011): *Thinking, Fast and Slow*
- Ross and Nisbett (1991): *The Person and the Situation: Perspectives of Social Psychology*
- Cialdini (1993): *Influence, the Psychology of Persuasion*
- Thaler and Sunstein (2008): *Nudge: Improving Decisions about Health, Wealth, and Happiness*
- Ariely (2009): *Predictably Irrational: The Hidden Forces that Shape our Decisions*
- Mullainathan and Shafir (2013): *Scarcity: Why Having Too Little Means so Much*

Introduction and Overview (two lectures)

- * Rabin (2002): *A Perspective on Psychology and Economics*
- Mullainathan and Thaler (2000): *Behavioral Economics*
- DellaVigna (2009): *Psychology and Economics: Evidence from the Field*
- Rabin (1998): *Psychology and Economics*
- Rabin (2013): *Incorporating Limited Rationality into Economics*

Time Preferences (three lectures)

- * Frederick et al. (2002): *Time Discounting and Time Preference: A Critical Review*
- Akerlof (1991): *Procrastination and Obedience*
- Laibson (1997): *Golden Eggs and Hyperbolic Discounting*
- * O'Donoghue and Rabin (1999): *Doing it Now or Later*
- O'Donoghue and Rabin (2001): *Choice and Procrastination*
- Bryan et al. (2010): *Commitment Devices*
- * Ariely and Wertenbroch (2002): *Procrastination, Deadlines, and Performance*
- Ashraf, Karlan and Yin (2006): *Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines*
- Schilbach (2015): *Alcohol and Self-Control: A Field Experiment in India*
- Kaur, Kremer and Mullainathan (2015): *Self-Control at Work*
- Milkman et al. (2014): *Holding the Hunger Games Hostage at the Gym*
- Sadoff et al. (2015): *Dynamic Inconsistency in Food Choice: Experimental Evidence from a Food Desert*
- Herschfield (2011): *Future Self-continuity: How Conceptions of the Future Self Transform Intertemporal Choice*
- DellaVigna and Malmendier (2006): *Paying Not To Go To the Gym*
- Gruber and Koszegi (2001): *Is Addiction 'Rational'? Theory and Evidence*

Emotions, Visceral Factors, Projection Bias (two lectures)

- * Read and van Leeuwen (1998): *Predicting Hunger: The Effects of Appetite and Delay on Choice*
- Badger et al. (2007): *Altered States: The Impact of Immediate Craving on the Valuation of Current and Future Opioids*

- Lerner et al. (2015): *Emotion and Decision Making*
- Card and Dahl (2011): *Family Violence and Football: The Effect of Unexpected Emotional Cues on Violent Behavior*
- * Loewenstein et al. (2003): *Projection Bias in Predicting Future Utility*
- Conlin et al. (2007): *Projection Bias in Catalog Orders*
- Busse et al. (2015): *The Psychological Effect of Weather on Car Purchases*
- * Haggag and Pope (2016): *Attribution Bias in Economic Decision Making*
- Loewenstein (1996): *Out of Control: Visceral Influences on Behavior*

Risk Preferences (two lectures)

- * Tversky and Kahneman (1979): *Prospect Theory: An Analysis of Decision under Risk*
- Rabin (2000): *Risk Aversion and Expected-Utility Theory: A Calibration Theorem*
- Sydnor (2010): *(Over)insuring Modest Risk*
- Rabin and Thaler (2001): *Anomalies: Risk Aversion*

Reference-Dependent Preferences (two lectures)

- * Camerer (2001): *Prospect Theory in the Wild: Evidence from the Field*
- * Carmon and Ariely (2000): *Focusing on the Forgone: How Value Can Appear So Different to Buyers and Sellers*
- Genesove and Mayer (2001): *Loss Aversion and Seller Behavior: Evidence from the Housing Market*
- Camerer et al. (1997): *Labor Supply of New York City Cabdrivers: One Day at a Time*

Social Preferences (two lectures)

- * Bandiera et al. (2005): *Social Preferences and the Response to Incentives: Evidence from Personnel Data*
- * Rao (2013): *Familiarity Does Not Breed Contempt: Diversity, Discrimination and Generosity in Delhi Schools*

Attention (two lectures)

- * Chetty et al. (2009): *Salience and Taxation: Theory and Evidence*
- Thaler (1985): *Mental Accounting and Consumer Choice*
- Hanna et al. (2014): *Learning Through Noticing: Theory and Evidence from a Field Experiment*

Beliefs and Learning (two lectures)

- * Oster et al. (2013): *Optimal Expectations and Limited Medical Testing: Evidence from Huntington's Disease*

Frames, defaults, and nudges (two lectures)

- * Madrian and Shea (2001): *Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior*
- Carroll et al. (2009): *Optimal Defaults and Active Decisions*
- Chetty et al. (2014): *Active vs. Passive Decisions and Crowd-Out in Retirement Savings Accounts*
- Thaler and Benartzi (2004): *Save More TomorrowTM: Using Behavioral Economics to Increase Employee Saving*

Poverty Through the Lens of Psychology (two lectures)

- Banerjee et al. (2015): *A Multi-faceted Program Causes Lasting Progress for the Very Poor: Evidence from Six Countries*
- Sendhil Mullainathan (2005): *Development Economics through the Lens of Psychology*
- * Mani et al. (2013): *Poverty Impedes Cognitive Function*
- Haushofer and Fehr (2014): *On the Psychology of Poverty*
- * Schilbach, Mullainathan and Schofield (2016): *The Psychological Lives of the Poor*
- Shah et al. (2015): *Scarcity Frames Value*

Happiness (one lecture)

- * Kahneman and Thaler (2006): *Anomalies: Utility Maximization and Experienced Utility*
- Stevenson and Wolfers (2008): *Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox*
- Schkade and Kahneman (1998): *Does Living in California Make People Happy? A Focusing Illusion in Judgments of Life Satisfaction*
- Kahneman (1994): *New Challenges to the Rationality Assumption*

Policy (one lecture)

- Thaler and Sunstein (2003): *Libertarian Paternalism*

References

- Akerlof, George A.**, “Procrastination and Obedience,” *American Economic Review, Papers and Proceedings*, 1991, *81* (2), 1–19.
- Ariely, Dan**, *Predictably Irrational: The Hidden Forces that Shape our Decisions*, New York: Harper, 2009.
- **and Klaus Wertenbroch**, “Procrastination, Deadlines, and Performance: Self-Control by Precommitment,” *Psychological Science*, 2002, *13* (3), 219–224.
- Ashraf, Nava, Dean Karlan, and Wesley Yin**, “Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines,” *Quarterly Journal of Economics*, 2006, *121* (2), 635–672.
- Badger, Gary, Warren K. Bickel, Louis A. Giordano, Eric A. Jacobs, George Loewenstein, and Lisa Marsch**, “Altered States: The Impact of Immediate Craving on the Valuation of Current and Future Opioids,” *Journal of Health Economics*, 2007, *26*, 865–876.
- Bandiera, Oriana, Iwan Barankay, and Imran Rasul**, “Social Preferences and the Response to Incentives: Evidence from Personnel Data,” *Quarterly Journal of Economics*, 2005, *120* (3), 917–962.
- Banerjee, Abhijit, Nathanael Goldberg, Dean Karlan, Pariente William Osei Robert, Jeremy Shapiro, Bram Thuysbaert, and Christopher Udry**, “A Multifaceted Program Causes Lasting Progress for the Very Poor: Evidence from Six Countries,” *Science*, 2015, *348* (6236), 772–788.
- Bryan, Gharad, Dean Karlan, and Scott Nelson**, “Commitment Devices,” *Annual Review of Economics*, 2010, *2*, 671–698.
- Busse, Meghan R., Devin G. Pope, Jaren C. Pope, and Jorge Silva-Risso**, “The Psychological Effects of Weather on Car Purchases,” *Quarterly Journal of Economics*, 2015, *130* (1), 371–414.
- Camerer, Colin**, “Prospect Theory in the Wild: Evidence from the Field,” in Daniel Kahneman and Amos Tversky, eds., *Choices, Values, and Frames*, Cambridge: Cambridge University Press, 2001, chapter 16.
- **, Linda Babcock, George Loewenstein, and Richard Thaler**, “Labor Supply of New York City Cabdrivers: One Day at a Time,” *Quarterly Journal of Economics*, 1997, *112* (2), 407–441.
- Card, David and Gordon Dahl**, “Family Violence and Football: The Effect of Unexpected Emotional Cues on Violent Behavior,” *Quarterly Journal of Economics*, 2011, *126*, 103–143.
- Carmon, Ziv and Dan Ariely**, “Focusing on the Forgone: How Value Can Appear So Different to Buyers and Sellers,” *Journal of Consumer Research*, 2000, *27* (3), 360–370.

- Carroll, Gabriel D., James J. Choi, David Laibson, Brigitte C. Madrian, and Andrew Metrick**, “Optimal Defaults and Active Decisions,” *Quarterly Journal of Economics*, 2009, *124* (4), 1639–1674.
- Chetty, Raj, Adam Looney, and Kory Kroft**, “Salience and Taxation: Theory and Evidence,” *American Economic Review*, 2009, *99* (4), 1145–1177.
- , **John N. Friedman, Soren Leth-Petersen, Torben Heien Nielsen, and Tore Olsen**, “Active vs. Passive Decisions and Crowd-Out in Retirement Savings Accounts,” *Quarterly Journal of Economics*, 2014, *129* (3), 1141–1219.
- Cialdini, Robert B.**, *Influence, the Psychology of Persuasion*, New York: William Morrow Publishing Company, 1993.
- Conlin, Michael, Ted O’Donoghue, and Timothy J. Vogelsang**, “Projection Bias in Catalog Orders,” *American Economic Review*, 2007, *97* (4), 1217–1249.
- DellaVigna, Stefano**, “Psychology and Economics: Evidence from the Field,” *Journal of Economic Literature*, 2009, *47*(2), 315–372.
- and **Ulrike Malmendier**, “Paying Not To Go To the Gym,” *American Economic Review*, 2006, *96* (3).
- Frederick, Shane, George Loewenstein, and Ted O’Donoghue**, “Time Discounting and Time Preference: A Critical Review,” *Journal of Economic Literature*, 2002, *XL* (2), 351–401.
- Genesove, David and Christopher Mayer**, “Loss Aversion and Seller Behavior: Evidence from the Housing Market,” *Quarterly Journal of Economics*, 2001, *116* (4), 1233–1260.
- Gruber, Jonathan and Botond Koszegi**, “Is Addiction ‘Rational’? Theory and Evidence,” *Quarterly Journal of Economics*, 2001, *116* (4), 1261–1303.
- Haggag, Kareem and Devin Pope**, “Attribution Bias in Economic Decision Making,” *mimeo*, 2016.
- Hanna, Rema, Sendhil Mullainathan, and J. Schwartzstein**, “Learning Through Noticing: Theory and Evidence from a Field Experiment,” *Quarterly Journal of Economics*, 2014, *129* (3), 1311–1353.
- Haushofer, Johannes and Ernst Fehr**, “On the Psychology of Poverty,” *Science*, 2014, *344* (6186), 862–867.
- Hershfield, Hal E.**, “Future Self-Continuity: How Conceptions of the Future Self Transform Intertemporal Choice,” *Annals of the New York Academy of Sciences*, 2011, *1235*, 30–43.
- Kahneman, Daniel**, “New Challenges to the Rationality Assumption,” *Journal of Institutional and Theoretical Economics*, 1994, *150*, 18–36.
- , *Thinking, Fast and Slow*, New York: Farrar, Straus and Giroux, 2011.

- **and Amos (eds.) Tversky**, *Choices, Values and Frames*, New York: Russell Sage Foundation: Cambridge University Press, 2000.
- **and Richard H. Thaler**, “Anomalies: Utility Maximization and Experienced Utility,” *Journal of Economic Perspectives*, 2006, *20* (1), 221–234.
- **, Paul Slovic, and Amos Tversky**, *Judgment Under Uncertainty: Heuristics and Biases*, New York: Cambridge University Press, 1982.
- Kaur, Supreet, Michael Kremer, and Sendhil Mullainathan**, “Self-Control at Work,” *Journal of Political Economy*, 2015, *Forthcoming*.
- Laibson, David**, “Golden Eggs and Hyperbolic Discounting,” *Quarterly Journal of Economics*, 1997, *112* (2), 443–478.
- Lerner, Jennifer, Ye Li, Piercarlo Valdesolo, and Karim S. Kassam**, “Emotion and Decision Making,” *Annual Review of Psychology*, 2015, *66* (33), 1–33.25.
- Loewenstein, George**, “Out of Control: Visceral Influences on Behavior,” *Organizational Behavior and Human Decision Processes*, 1996, *65* (3), 272–292.
- **, Ted O’Donoghue, and Matthew Rabin**, “Projection Bias in Predicting Future Utility,” *Quarterly Journal of Economics*, 2003, *118* (4), 1209–1248.
- Madrian, Brigitte C. and Dennis F. Shea**, “Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior,” *Quarterly Journal of Economics*, 2001, *116* (4), 1149–1187.
- Mani, Anandi, Sendhil Mullainathan, Eldar Shafir, and Jiaying Zhao**, “Poverty Impedes Cognitive Function,” *Science*, 2013, *341* (6149), 976–980.
- Milkman, Katherine, Julia A. Minson, and Kevin G.M. Volpp**, “Holding the Hunger Games Hostage at the Gym: An Evaluation of Temptation Bundling,” *Management Science*, 2014, *60* (2), 283–299.
- Mullainathan, Sendhil and Eldar Shafir**, *Scarcity: Why Having Too Little Means So Much*, Time Books, Henry Holt and Co. LLC, 2013.
- **and Richard H. Thaler**, “Behavioral Economics,” *National Bureau of Economic Research*, 2000, (w7948).
- O’Donoghue, Ted and Matthew Rabin**, “Doing It Now or Later,” *American Economic Review*, 1999, *89* (1), 103–124.
- **and —**, “Choice and Procrastination,” *Quarterly Journal of Economics*, 2001, *116* (1), 121–160.
- Oster, Emily, Ira Shoulson, and E. Ray Dorsey**, “Optimal Expectations and Limited Medical Testing: Evidence from Huntington’s Disease,” *American Economic Review*, 2013, *103* (2), 804–830.

- Rabin, Matthew**, “Psychology and Economics,” *Journal of Economic Literature*, 1998, *36* (1), 11–46.
- , “Risk Aversion and Expected-Utility Theory: A Calibration Theorem,” *Econometrica*, 2000, *68* (5), 1281–1292.
- , “A Perspective on Psychology and Economics,” *European Economic Review*, 2002, *46* (4-5), 657–685.
- , “Incorporating Limited Rationality into Economics,” *Journal of Economic Literature*, 2013, *51* (2), 528–543.
- **and Richard Thaler**, “Anomalies – Risk Aversion,” *Journal of Economic Perspectives*, 2001, *15* (1), 219–232.
- Rao, Gautam**, “Familiarity Does Not Breed Contempt: Diversity, Discrimination and Generosity in Delhi Schools,” *mimeo*, 2013.
- Read, Daniel and Barbara van Leeuwen**, “Predicting Hunger: The Effects of Appetite and Delay on Choice,” *Organizational Behavior and Human Decision Processes*, 1998, *76* (2), 189–205.
- Ross, Lee and Richard E. Nisbett**, *The Person and the Situation: Perspectives of Social Psychology*, Philadelphia: Temple University Press, 1991.
- Sadoff, Sally, Anya Samek, and Charles Sprenger**, “Dynamic Inconsistency in Food Choice: Experimental Evidence from a Food Desert,” *mimeo*, 2015.
- Schilbach, Frank**, “Alcohol and Self-Control : A Field Experiment in India,” *mimeo*, 2015.
- , **Sendhil Mullainathan, and Heather Schofield**, “The Psychological Lives of the Poor,” *American Economic Review Papers and Proceedings*, 2016, *106* (5), 435–440.
- Schkade, David and Daniel Kahneman**, “Does Living in California Make People Happy? A Focusing Illusion in Judgments of Life Satisfaction,” *Psychological Science*, 1998, *9* (5), 340–346.
- Shah, Anuj, Sendhil Mullainathan, and Eldar Shafir**, “Scarcity Frames Value,” *Psychological Science*, 2015, *26* (4), 402–412.
- Stevenson, Betsey and Justin Wolfers**, “Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox,” *Brookings Papers on Economic Activity*, 2008, *Spring*, 1–102.
- Sydnor, Justin**, “(Over)insuring Modest Risks,” *American Economic Journal: Applied Economics*, 2010, *2* (4), 177–199.
- Thaler, Richard and Cass Sunstein**, “Libertarian Paternalism,” *American Economic Review (Papers and Proceedings)*, 2003, *93* (2), 175–179.
- Thaler, Richard H.**, “Mental Accounting and Consumer Choice,” *Marketing Science*, 1985, *4*, 199–214.

- **and Cass R. Sunstein**, *Nudge: Improving Decisions about Health, Wealth and Happiness*, New Haven: Yale University Press, 2008.
 - **and Shlomo Benartzi**, “Save More TomorrowTM: Using Behavioral Economics to Increase Employee Saving,” *Journal of Political Economy*, 2004, 112 (S1), S164–S187.
- Tversky, Amos and Daniel Kahneman**, “Prospect Theory: An Analysis of Decision under Risk,” *Econometrica*, 1979, 47, 263–292.