Econ 885-12: Psychology and Economics

Todd Sarver

Spring 2024

Dates: January 11 – February 22, 2024
Days and Times: Tuesday and Thursday 10:05–11:20am
Location: Social Sciences 113
Office Hours: Tuesday and Thursday 11:20–11:50am, or by appointment

Course Description: This course will focus on recent papers incorporating psychological biases and cognitive constraints into economics. The aim of the course is to explore the role of these "behavioral" assumptions in generating new and more realistic predictions in a range of economic applications, including investment and insurance decisions, consumption and savings decisions, contract theory, and industrial organization. We will also draw connections with models of risk and time preferences from the decision theory literature. Topics can be adjusted based on student interests, but will likely include some of the following: risk preferences and reference-dependent utility; dynamic inconsistency and time preferences; behavioral IO; belief distortions and selfsignaling; welfare; cognitive constraints and imperfect memory; evolution of preferences.

Prerequisites: Completion of the first-year Economics PhD core courses, or comparable. We will be studying models that extend the standard fully-rational-agent paradigm to incorporate psychological biases and bounded rationality. Therefore, understanding of the standard models and techniques from advanced microeconomics (required) and macroeconomics (recommended) is a critical prerequisite to success in this course.

Evaluation: At this stage, you should ideally be transitioning from test-based assessment to conducting your own research. Following that philosophy, course evaluation will be based on a combination of 3–4 problem sets and a referee report on one of the papers on the reading list or another related paper that we agree upon (details of the referee report assignment are below). Alternatively, if you have an original research idea related to the course, it may be possible for you to submit a draft of your own paper instead of a referee report. The goal is for the requirements of this course to complement, not substitute, the development of your own research ideas.

Referee Report Assignment

As a part of the editorial process, editors solicit referees to write reports on papers that are submitted for publication. These reports help the editor decide whether to publish the paper, and they provide the author(s) with valuable feedback on the paper. A referee report should include:

- 1. Short overview of the model and main results: For this assignment, your summary should be around 3 pages (although they are typically shorter than this for real reports) and should include a discussion of the contributions of the paper in the context of the related literature, as well as the intuition behind the main results. For example, a referee report for a theory paper might sketch the main intuition behind a proof in a simple way, without the full details.
- 2. Summary evaluation of the paper: What is your opinion of the overall quality of the paper and suitability for publication in the journal in question?
- 3. Specific comments: Do the modeling assumptions seem reasonable or do you have suggestions for improvement? Do you think a particular part of the paper is more interesting or relevant? Are there some parts or results that seemed unnecessary? Do you have a suggestion for strengthening a result or improving a proof? Is there a connection with other literature that the author(s) may have overlooked that would enhance the impact of the paper?

Your assignment is to complete a referee report on one of the papers on the reading list (but not one of the papers I will cover in class or a survey paper) or another related paper that we agree upon. Since you will most likely be writing your report on a paper that is already published, the summary evaluation (2) will not be necessary (although I would be happy to hear your opinions). You can focus your report on the overview (1) and comments (3). Specifics:

- Referee reports are typically 3-5 pages long when single or 1.5 spaced using 12 point font.
- You should write your report using a program that allows you to typeset mathematical formula. Word is acceptable, but LaTeX is preferred (either by directly writing the TeX file or using an interface like Scientific Workplace). Learning this language is a good investment, and I am happy to point you to some short guides if you need them.
- You may complete a report individually or work together with one other person.
- Within the **first two weeks of class** you need to have a conversation with me regarding the paper on which you would like to write a report and with whom (if anyone) you will be working. I would like each group to write a report on a different paper, so we will need to coordinate. Please email me or (preferably) catch me during office hours to discuss your interests and possible papers that would be suitable.
- Reports are due by Wednesday, February 28. I'll create an "assignment" in Gradescope where you can submit your report.

Reading List

Below is a fairly long (but by no means comprehensive) list of topics and papers related to Psychology and Economics. We will only have time to cover a small number of them in this module. The following key will be used to indicate the articles most closely related the content of the lectures:

> ★ = Primary reference (main focus in lectures) \Diamond = Secondary reference (also related to lectures)

Of course, we may make some changes as we go based on time constraints for changing tastes. As we proceed, we will also discuss the broader literature and how these papers fit into it.

1 Puzzles and Paradoxes for Expected Utility

1.1 Paradoxes Related to Linearity of Risk Preferences

◊ M. J. Machina (1987): "Choice Under Uncertainty: Problems Solved and Unsolved," Economic Perspectives, 1, 121–154 [survey]

M. Allais (1953): "Le Comportement de l'Homme Rationnel devant le Risque: Critique des Postulats et Axioms de l'Ecole Americaine," *Econometrica*, 21, 503–546

★ D. Kahneman and A. Tversky (1979): "Prospect Theory: An Analysis of Decision Under Risk," *Econometrica*, 47, 263–292 [Sections 1–2]

1.2 Attitudes toward Small and Large Risks

J. Pratt (1964): "Risk Aversion in the Small and in the Large," Econometrica, 32, 122–136

U. Segal and A. Spivak (1990): "First Order versus Second Order Risk Aversion," *Journal of Economic Theory*, 51, 111–125

★ M. Rabin (2000): "Risk Aversion and Expected-Utility Theory: A Calibration Theorem," Econometrica, 68, 1281–1292

R. Mehra and E. Prescott (1985): "The Equity Premium: A Puzzle," *Journal of Monetary Economics*, 15, 145–161

◊ N. R. Kocherlakota (1996): "The Equity Premium: It's Still a Puzzle," Journal of Economic Literature, 34, 42–71

J. H. Cochrane (2005): Asset Pricing, 2nd ed., Princeton, NJ: Princeton University Press [Chapter 21: Equity Premium Puzzle]

2 More General Models of Choice under Risk

2.1 Prospect Theory and Reference-Dependent Utility

Fixed (Exogenous) Reference Points

P. P. Wakker (2010): *Prospect Theory for Risk and Ambiguity*, Cambridge, United Kingdom: Cambridge University Press [book]

D. Kahneman, J. L. Knetsch, and R. H. Thaler (1991): "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias," *The Journal of Economic Perspectives*, 5, 193–206 [survey]

N. Barberis and R. Thaler (2003): "A Survery of Behavioral Finance," in *Handbook of the Economics of Finance*, ed. by G. M. Constantinides, M. Harris, and R. Stulz, vol. 1, Elsevier [survey]

H. M. Markowitz (1952): "The Utility of Wealth," Journal of Political Economy, 60, 151–158

- ★ D. Kahneman and A. Tversky (1979): "Prospect Theory: An Analysis of Decision Under Risk," *Econometrica*, 47, 263–292 [Sections 3–4]
- ◊ A. Tversky and D. Kahneman (1992): "Advances in Prospect Theory: Cumulative Representation of Uncertainty," Journal of Risk and Uncertainty, 5, 297–323

Y. Masatlioglu and E. A. Ok (2005): "Rational choice with status quo bias," *Journal of Economic Theory*, 121, 1–29

N. Barberis and M. Huang (2008): "Stocks as Lotteries: The Implications of Probability Weighting for Security Prices," *American Economic Review*, 98, 2066–2100

Y. Masatlioglu and E. A. Ok (2014): "A Canonical Model of Choice with Initial Endowments," *Review of Economic Studies*, 81, 851–883

Endogenous Reference Points

- ★ B. Kőszegi and M. Rabin (2006): "A Model of Reference-Dependent Preferences," Quarterly Journal of Economics, 121, 1133–1165
- ◊ B. Kőszegi and M. Rabin (2007): "Reference-Dependent Risk Attitudes," American Economic Review, 97, 1047–1073

B. Kőszegi and M. Rabin (2009): "Reference-dependent consumption plans," *American Economic Review*, 99, 909–936

E. Ok, P. Ortoleva, and G. Riella (2015): "Revealed (P)Reference Theory," *American Economic Review*, 105, 299–321

★ Y. Masatlioglu and C. Raymond (2016): "A Behavioral Analysis of Stochastic Reference Dependence," *American Economic Review*, 106, 2760–2782

2.2 Non-Expected Utility in Decision Theory

Rank-Dependent Utility

J. Quiggin (1982): "A Theory of Anticipated Utility," Journal of Economic Behavior and Organization, 3, 323–343

M. E. Yaari (1987): "The Dual Theory of Choice under Risk," Econometrica, 55, 95-115

- ◊ S. H. Chew, E. Karni, and Z. Safra (1987): "Risk Aversion in the Theory of Expected Utility with Rank Dependent Probabilities," *Journal of Economic Theory*, 42, 370–381
- ◊ U. Segal (1987): "Some Remarks on Quiggin's Anticipated Utility," Journal of Economic Behavior and Organization, 8, 145–154

U. Segal (1988): "Probabilistic Insurance and Anticipated Utility," Journal of Risk and Insurance, 55, 287–297

U. Segal (1989): "Anticipated Utility: A Measure Representation Approach," Annals of Operations Research, 19, 359–373

E. Diecidue and P. P. Wakker (2001): "On the Intuition of Rank-Dependent Utility," *Journal of Risk and Uncertainty*, 23, 281–298

M. Abdellaoui (2002): "A Genuine Rank-Dependent Generalization of the Von Neumann-Morgenstern Expected Utility Theorem," *Econometrica*, 70, 717–736

Betweenness and Disappointment Aversion

S. H. Chew (1983): "A Generalization of the Quasilinear Mean with Applications to the Measurement of Income Inequality and Decision Theory Resolving the Allais Paradox," *Econometrica*, 51, 1065–1092

E. Dekel (1986): "An Axiomatic Characterization of Preferences under Uncertainty: Weakening the Independence Axiom," *Journal of Economic Theory*, 40, 304–318

◊ F. Gul (1991): "A Theory of Disappointment Aversion," *Econometrica*, 59, 667–686

S. Cerreia-Vioglio, D. Dillenberger, and P. Ortoleva (2020): "An Explicit Representation for Disappointment Aversion and Other Betweenness Preferences," *Theoretical Economics*, 15, 1509–1546

Other Useful Non-Expected-Utility Models

C. Starmer (2000): "Developments in Non-Expected Utility Theory: The Hunt for a Descriptive Theory of Choice under Risk," *Journal of Economic Literature*, 38, 332–382 (2000) [survey] D. Dillenberger (2010): "Preferences for One-Shot Resolution of Uncertainty and Allais-Type Behavior," *Econometrica*, 78, 1973–2004

- S. Cerreia-Vioglio, D. Dillenberger, and P. Ortoleva (2015): "Cautious Expected Utility and the Certainty Effect," *Econometrica*, 83, 693–728
- ★ T. Sarver (2018): "Dynamic Mixture-Averse Preferences," *Econometrica*, 86, 1347–1382

Local Expected-Utility Theory

M. J. Machina (1982): "Expected Utility' Analysis without the Independence Axiom," *Econometrica*, 50, 277–323

S. Cerreia-Vioglio, F. Maccheroni, and M. Marinacci (2016): "Stochastic Dominance Analysis without the Independence Axiom," *Management Science*, 63, 1097–1109

2.3 Background Risk and Narrow Framing

S. Benartzi and R. H. Thaler (1995): "Myopic Loss Aversion and the Equity Premium Puzzle," *Quarterly Journal of Economics*, 110, 73–92

N. Barberis, M. Huang, and T. Santos (2001): "Prospect Theory and Asset Prices," *Quarterly Journal of Economics*, 116, 1–53

N. Barberis and M. Huang (2001): "Mental Accounting, Loss Aversion, and Individual Stock Returns," *Journal of Finance*, 56, 1247–1292

N. Barberis, M. Huang, and R. H. Thaler (2006): "Individual Preferences, Monetary Gambles, and Stock Market Participation: A Case for Narrow Framing," *American Economic Review*, 96, 1069–1090

Z. Safra and U. Segal (2008): "Calibration Results for Non-Expected Utility Theories," *Econometrica*, 76, 1143–1166

3 Time-Inconsistent Preferences

3.1 Changing Tastes and Present Bias

S. Frederick, G. Loewenstein, and T. O'Donoghue (2002): "Time Discounting and Time Preference: A Critical Review," *Journal of Economic Literature*, 40, 351–401 [survey]

R. H. Strotz (1955): "Myopia and Inconsistency in Dynamic Utility Maximization," *Review of Economic Studies*, 23, 165–180

R. A. Pollak (1968): "Consistent Planning," Review of Economic Studies, 35, 201–208

E. S. Phelps and R. A. Pollak (1968): "On Second-Best National Saving and Game-Equilibrium Growth," *Review of Economic Studies*, 35, 185–199

B. Peleg and M. E. Yaari (1973): "On the Existence of a Consistent Course of Action when Tastes are Changing," *Review of Economic Studies*, 40, 391–401

- ★ D. Laibson (1997): "Golden Eggs and Hyperbolic Discounting," Quarterly Journal of Economics, 112, 443–478
- ◊ C. Harris and D. Laibson (2001): "Dynamic Choices of Hyperbolic Consumers," *Econometrica*, 69, 935–957

S. Morris (2002): "Continuous Consumption Rules with Non-Exponential Discounting," working paper

C. Harris and D. Laibson (2003): "Hyperbolic Discounting and Consumption," in Advances in Economics and Econometrics: Theory and Applications, Eighth World Congress, ed. by M. Dewatripont, L. P. Hansen, and S. Turnovsky, vol. 1, Cambridge University Press, 258–297

F. Gul and W. Pesendorfer (2005): "The Revealed Preference Theory of Changing Tastes," *Review of Economic Studies*, 72, 429–448

A. Banerjee and S. Mullainathan (2010): "The Shape of Temptation: Implications for the Economic Lives of the Poor," working paper

C. Harris and D. Laibson (2013): "Instantaneous gratification," *Quarterly Journal of Economics*, 128, 205–248

B. D. Bernheim, D. Ray, and Ş. Yeltekin (2015): "Poverty and Self-Control," *Econometrica*, 83, 1877–1911

Chakraborty (2021): "Present Bias," ECMA.

Noor and Takeoka (2022): "Optimal Discounting," ECMA.

3.2 Temptation and Self-Control

B. L. Lipman and W. Pesendorfer (2013): "Temptation," in *Advances in Economics and Econometrics: Tenth World Congress*, ed. by D. Acemoglu, M. Arellano, and E. Dekel, vol. 1, Cambridge University Press [survey]

★ F. Gul and W. Pesendorfer (2001): "Temptation and Self-Control," *Econometrica*, 69, 1403–1435

P. Krusell, B. Kuruşçu, and A. A. Smith (2002): "Time Orientation and Asset Prices," *Journal of Monetary Economics*, 49, 107–135

F. Gul and W. Pesendorfer (2004): "Self-Control and the Theory of Consumption," *Econometrica*, 72, 119–158

M. Amador, I. Werning, and G.-M. Angeletos (2006): "Commitment vs. Flexibility," *Econo*metrica, 74, 365–396

D. Fudenberg and D. K. Levine (2006): "A Dual-Self Model of Impulse Control," *American Economic Review*, 96, 1449–1476

F. Gul and W. Pesendorfer (2007a): "Harmful Addiction," *Review of Economic Studies*, 74, 147–172

J. Noor (2007): "Commitment and Self-Control," Journal of Economic Theory, 135, 1–34

E. Ozdenoren, S. W. Salant, and D. Silverman (2012): "Willpower and the Optimal Control of Visceral Urges," *Journal of the European Economic Association*, 10, 342–368

P. Krusell, B. Kuruşçu, and A. A. Smith (2010): "Temptation and Taxation," *Econometrica*, 78, 2063–2084

J. Noor (2011): "Temptation and Revealed Preference," Econometrica, 79, 601–644

3.3 Naivete

- ★ T. O'Donoghue and M. Rabin (1999): "Doing it Now or Later," American Economic Review, 89, 103-124
- ★ T. O'Donoghue and M. Rabin (2001): "Choice and Procrastination," Quarterly Journal of Economics, 116, 121–160
 - S. N. Ali (2011): "Learning Self-Control," Quarterly Journal of Economics, 126, 857–893

D. Laibson (2015): "Why Don't Present-Biased Agents Make Commitments?," American Economic Review, 105, 267–72

★ D. S. Ahn, R. Iijima, Y. Le Yaouanq, and T. Sarver (2019): "Behavioural Characterizations of Naivete for Time-Inconsistent Preferences," *Review of Economic Studies*, 86, 2319–2355

D. S. Ahn, R. Iijima, and T. Sarver (2020): "Naivete About Temptation and Self-Control: Foundations for Recursive Naive Quasi-Hyperbolic Discounting," *Journal of Economic Theory*, 189, 105087

D. Laibson (2018): "Private Paternalism, the Commitment Puzzle, and Model-Free Equilibrium," American Economic Review P&P, 108, 1–21

3.4 Experimental Evidence and Empirical Applications

S. DellaVigna (2009): "Psychology and Economics: Evidence from the Field," *Journal of Economic Literature*, 47, 315–372 [survey]

D. Ariely and K. Wertenbroch (2002): "Procrastination, Deadlines, and Performance: Self-Control by Precommitment," *Psychological Science*, 13, 219–224

N. Ashraf, D. Karlan, and W. Yin (2006): "Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines," *Quarterly Journal of Economics*, 121, 635–672

S. DellaVigna and U. Malmendier (2006): "Paying Not to Go to the Gym," American Economic Review, 96, 694–719

G. D. Carroll et al. (2009): "Optimal Defaults and Active Decisions," *Quarterly Journal of Economics*, 124, 1639–1674

X. Giné, D. Karlan, and J. Zinman (2010): "Put your Money where your Butt Is: a Commitment Contract for Smoking Cessation," *American Economic Journal: Applied Economics*, 2, 213–235

E. Duflo, M. Kremer, and J. Robinson (2011): "Nudging Farmers to Use Fertilizer: Theory and Experimental Evidence from Kenya," *American Economic Review*, 101, 2350–2390

S. Kaur, M. Kremer, and S. Mullainathan (2015): "Self-Control at Work," *Journal of Political Economy*, 123, 1227–1277

N. Augenblick, M. Niederle, and C. Sprenger (2015): "Working over Time: Dynamic Inconsistency in Real Effort Tasks," *Quarterly Journal of Economics*, 130, 1067–1115

S. Toussaert (2018): "Eliciting Temptation and Self-Control Through Menu Choices: A Lab Experiment," *Econometrica*, 86, 859–889

N. Augenblick and M. Rabin (2019): "An Experiment on Time Preference and Misprediction in Unpleasant Tasks," *Review of Economic Studies*, 86, 941–975

4 Behavioral Industrial Organization

◊ R. Spiegler (2011): Bounded Rationality and Industrial Organization, New York: Oxford University Press [book]

G. Ellison (2006): "Bounded Rationality in Industrial Organization," in Advances in Economics and Econometrics: Theory and Applications, Ninth World Congress, ed. by R. Blundell, W. K. Newey, and T. Persson, vol. 2, New York: Cambridge University Press, 142–174 [survey]

B. Kőszegi (2014): "Behavioral Contract Theory," *Journal of Economic Literature*, 52, 1075–1118 [survey]

Grubb (2015): "Overconfident Consumers in the Marketplace," JEP [survey]

4.1 Contracting with Time-Inconsistent and Naive Agents

S. DellaVigna and U. Malmendier (2004): "Contract Design and Self-Control: Theory and Evidence," *Quarterly Journal of Economics*, 119, 353–402

K. Eliaz and R. Spiegler (2006): "Contracting with Diversely Naive Agents," *Review of Economic Studies*, 73, 689–714

P. Heidhues and B. Koszegi (2010): "Exploiting Naivete about Self-Control in the Credit Market," *American Economic Review*, 100, 2279–2303

P. Heidhues and B. Kőszegi (2017): "Naivete-Based Discrimination," *Quarterly Journal of Economics*, 132, 1019–1054

Gottlieb and Zhang (2021): "Long-Term Contracting with Time-Inconsistent Agents," ECMA.

4.2 Contracting with Agents with Other Belief Biases

G. Ellison (2005): "A Model of Add-on Pricing," *Quarterly Journal of Economics*, 120, 585–637

★ X. Gabaix and D. Laibson (2006): "Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets," *Quarterly Journal of Economics*, 121, 505–540

R. Spiegler (2006): "Competition over Agents with Boundedly Rational Expectations," *Theoretical Economics*, 1, 207–231

◊ M. D. Grubb (2009): "Selling to Overconfident Consumers," American Economic Review, 99, 1770–1807

M. D. Grubb and M. Osborne (2015): "Cellular Service Demand: Biased Beliefs, Learning, and Bill Shock," *American Economic Review*, 105, 234–271

Grubb (2015): "Consumer Inattention and Bill-Shock Regulation," RESTUD.

4.3 Other Topics in Behavioral Industrial IO

F. Herweg, D. Müller, and P. Weinschenk (2010): "Binary Payment Schemes: Moral Hazard and Loss Aversion," *American Economic Review*, 100, 2451–2477

5 Other Topics

5.1 Salience Theory and Regret Theory

P. Bordalo, N. Gennaioli, and A. Shleifer (2012): "Salience Theory of Choice Under Risk," *Quarterly Journal of Economics*, 127, 1243–1285

P. Bordalo, N. Gennaioli, and A. Shleifer (2013): "Salience and Consumer Choice," *Journal of Political Economy*, 121, 803–843

Bordalo, Gennaioli, and Shleifer (2016): "Competition for Attention," RESTUD.

Lanzani (2021): "Correlation Made Simple: Applications to Salience and Regret Theory," $QJ\!E.$

5.2 Causal Misperceptions (using Directed Acyclic Graphs)

Spiegler (2016): "Bayesian Networks and Boundedly Rational Expectations," QJE.

Eliaz and Spiegler (2020): "A Model of Competing Narratives," AER.

Spiegler (2020): "Behavioral Implications of Causal Misperceptions," Annual Review of Economics [survey]

Eliaz, Galperti, and Spiegler (2022): "False Narratives and Political Mobilization," working paper.

5.3 Equilibrium Concepts with Biased Beliefs

Eyster and Rabin (2005): "Cursed Equilibrium," ECMA.

Jehiel (2005): "Analogy-Based Expectation Equilibrium," JET.

Jehiel and Koessler (2008): "Revisiting Games of Incomplete Information with Analogy-Based Expectations," GEB.

Esponda (2008): "Behavioral Equilibrium in Economies with Adverse Selection," AER.

Esponda and Pouzo (2016): "Berk-Nash Equilibrium: A Framework for Modeling Agents with Misspecified Models," *ECMA*.

Heller and Winter (2020): "Bias-Belief Equilibrium," AEJ:Micro.

5.4 Rational Explanations for Apparent Biases

Dasgupta and Maskin (2005): "Uncertainty and Hyperbolic Discounting," AER.

E. Kamenica (2008): "Contextual Inference in Markets: On the Informational Content of Product Lines," *American Economic Review*, 98, 2127–2149

J.-P. Benoît and J. Dubra (2011): "Apparent Overconfidence," Econometrica, 79, 1591–1625

J. B. Miller and A. Sanjurjo (2018): "Surprised by the Hot Hand Fallacy? A Truth in the Law of Small Numbers," *Econometrica*, 86, 2019–2047

5.5 Attention and Choice Set Dependence

Y. Masatlioglu, D. Nakajima, and E. Y. Ozbay (2012): "Revealed Attention," *American Economic Review*, 102, 2183–2205

B. Kőszegi and A. Szeidl (2013): "A Model of Focusing in Economic Choice," *Quarterly Journal of Economics*, 128, 53–104

P. Manzini and M. Mariotti (2014): "Stochastic Choice and Consideration Sets," *Econometrica*, 82, 1153–1176

5.6 Psychological Games and Interdependent Preferences

J. Geanakoplos, D. Pearce, and E. Stacchetti (1989): "Psychological Games and Sequential Rationality," *Games and Economic Behavior*, 1, 60–79

M. Rabin (1993): "Incorporating Fairness into Game Theory and Economics," *American Economic Review*, 83, 1281–1302

E. Fehr and K. M. Schmidt (1999): "A Theory of Fairness, Competition, and Cooperation," *Quarterly Journal of Economics*, 114, 817–868

D. Dillenberger and P. Sadowski (2012): "Ashamed to be Selfish," *Theoretical Economics*, 7, 99–124

5.7 Utility from Beliefs

J. Ely, A. Frankel, and E. Kamenica (2015): "Suspense and Surprise," *Journal of Political Economy*, 123.1, 215–260

F. Gul, P. Natenzon, and W. Pesendorfer (2021): "Random Evolving Lotteries and Intrinsic Preference for Information," *Econometrica*, forthcoming

Duraj and He (2024): "Dynamic Information Preference and Communication with Diminishing Sensitivity Over News," working paper.

5.8 Influencing Own Beliefs: Self-Deception and Self-Signaling

J. D. Carrillo and T. Mariotti (2000): "Strategic Ignorance as a Self-Disciplining Device," *Review of Economic Studies*, 67, 529–544

R. Bénabou and J. Tirole (2002): "Self-Confidence and Personal Motivation," *Quarterly Journal of Economics*, 117, 871–915

R. Bénabou and J. Tirole (2004): "Willpower and Personal Rules," *Journal of Political Economy*, 112, 848–886

O. Compte and A. Postlewaite (2004): "Confidence-Enhanced Performance," *American Economic Review*, 94, 1536–1557

M. K. Brunnermeier and J. A. Parker (2005): "Optimal Expectations," *American Economic Review*, 95, 1092–1118

R. Bénabou and J. Tirole (2011): "Identity, Morals, and Taboos: Beliefs as Assets," *Quarterly Journal of Economics*, 126, 805–855

5.9 Welfare

T. O'Donoghue and M. Rabin (2003): "Studying Optimal Paternalism, Illustrated by a Model of Sin Taxes," *American Economic Review*, 93, 186–191

C. Camerer et al. (2003): "Regulation for Conservatives: Behavioral Economics and the Case for 'Asymmetric Paternalism'," University of Pennsylvania Law Review, 151, 1211–1254

B. D. Bernheim and A. Rangel (2009): "Beyond Revealed Preference: Choice-Theoretic Foundations for Behavioral Welfare Economics," *Quarterly Journal of Economics*, 124, 51–104

F. Gul and W. Pesendorfer (2007b): "Welfare without Happiness," American Economic Review, 97, 471–476

F. Gul and W. Pesendorfer (2008): "The Case for Mindless Economics," in *The Foundations* of *Positive and Normative Economics: A Handbook*, ed. by A. Caplin and A. Schotter, Oxford University Press

G. de Clippel (2014): "Behavioral Implementation," American Economic Review, 104, 2975–3002

5.10 Miscellaneous

R. H. Thaler (1999): "Mental Accounting Matters," Journal of Behavioral Decision Making, 12, 183–206

W. Pesendorfer (2006): "Behavioral Economics Comes of Age: A Review Essay on Advances in Behavioral Economics," *Journal of Economic Literature*, 44, 712–721 [survey]

Ahn and Ergin (2010): "Framing Contingencies," ECMA.

G. de Clippel and K. Eliaz (2012): "Reason-Based Choice: A Bargaining Rationale for the Attraction and Compromise Effects," *Theoretical Economics*, 7, 125–162

X. Gabaix (2014): "A Sparsity-Based Model of Bounded Rationality," *Quarterly Journal of Economics*, 129, 1661–1710

F. Gul, W. Pesendorfer, and T. Strzalecki (2017): "Coarse Competitive Equilibrium and Extreme Prices," *American Economic Review*, 107, 109–37

E. Farhi and X. Gabaix (2020): "Optimal Taxation with Behavioral Agents," *American Economic Review*, 110, 298–336

F. Ostrizek and D. Shishkin (2019): "Screening with Frames," working paper.

Chen Lian (2019): "A Theory of Narrow Thinking," working paper.