

G 6492
PLAYING IN THE LAB: LAB EXPERIMENTS ON GAMES.
APPLICATIONS TO POLITICAL ECONOMY.

Goals: This course analyzes the methodology of lab experiments on games, and uses a specific topic in Political Economy—collective decision-making, primarily through voting—as example of how lab experiments studying strategic situations can be designed, what they can test, and what they can achieve.

The course has two threads. On one hand, we will study methodological questions in experimentation. This involves not only discussions of experimental design and procedures, but also the extensions of traditional models developed to accommodate the noisy choices observed in the lab. While we will start from game-theoretic models of rational and self-interested individuals, the experimental results often demand consideration of psychological and sociological factors. We will study how different models of behavioral game-theory strive to provide systematic accounts of the data generated in the lab.

On the other hand, we will focus on the substantive questions of political economy, focusing in particular on collective decision-making, with a strong foundation in theory. The economic choices of a society are coordinated through prices; the political choices through voting. Even outside the political realm, voting is the most common procedure through which groups make collective decisions. It is both a fundamental empirical fact of our social and political lives and a rich source of theoretical questions and paradoxes.

Experiment: Students will take part in one experiment, run in CELSS on September 11th, during class time.

Course Requirements:

The students are required to prepare the draft of an experimental paper. No actual experiment is required, but the paper should include a theoretical model and hypothesis, a detailed experimental design, and the draft of the experimental instructions.

Timing for the paper:

- **Oct 9:** 1-2 page proposal with the question to be studied and a sketch of the experiment.
- **Nov 13:** Relevant literature, initial draft of the model and of the experimental instructions.
- The deadline for the paper is **Dec 14**.

Students are also required to take the online IRB course and test for Human Subject Research (TC0087) and to attend the workshop on programming in ZTree/OTree. (Date to be announced).

REFERENCES

(a) Experimental methods

Falk, A. and J. Heckman, 2009, "Lab Experiments Are a Major Source of Knowledge in the Social Sciences", *Science*, 326, October, 535-538..

Kagel, J. and A. Roth (eds.), 1995, *The Handbook of Experimental Economics*, Vol. 1, Princeton Un. Press: Princeton.

Kagel, J. and A. Roth (eds.), 2016, *The Handbook of Experimental Economics*, Vol. 2, Princeton Un. Press: Princeton..

Plott, C. and V. Smith (eds.), 2008, *The Handbook of Experimental Economics Results*, North Holland: Amsterdam.

Frechette, G. and A. Schotter (eds.) 2015, *Handbook of Experimental Economic Methodology*, Oxford Un. Press, Oxford and New York.

Table of content:

<http://global.oup.com/academic/product/handbook-of-experimental-economic-methodology-9780195328325;jsessionid=1B9982CDA1D00E894C3C3607C712CB13?cc=us&lang=en&#>

Note: several chapters can be found on the web.

(b) Behavioral game theory

Camerer, C., 2003, *Behavioral Game Theory*, Princeton and New York: Princeton University Press and Russell Sage Foundation .

Crawford, V. P., 2002, "Introduction to Experimental Game Theory," *Journal of Economic Theory*, 104(1): 1-15.

Goeree, J., C. Holt and T. Palfrey, 2016, *Quantal Response Equilibrium: A Stochastic Theory of Games*, Princeton University Press: Princeton, N.J.

(c) Experimental political economy

Palfrey, Thomas, 2016, "Experiments in Political Economy", in Kagel, J. and A. Roth (eds.), *The Handbook of Experimental Economics*, Vol. 2, Princeton Un. Press: Princeton.

Casella, A, 2012, *Storable Votes: Protecting the Minority Voice*, Oxford Un. Press: Oxford, UK and New York, NY.

INDICATIVE CLASS SCHEDULE

Introduction (Sept. 4)

Dal Bo', P., A. Foster and L. Putterman, 2010, "Institutions and Behavior: Experimental Evidence on the Effects of Democracy", *American Economic Review*, vol. 100(5), pages 2205-29, December.

Frechette, Guillaume, "Laboratory Experiments: Professionals v/s Students", in Frechette and Schotter, eds., 2015, *Handbook of Experimental Economic Methodology*, Oxford Un. Press.

Casella, A., Introduction to Experiments, notes, in Courseworks.

Experiment and discussion (Sept 11-18)

Bad Policies (Sept 18-Sept 25)

Dal Bo', E., P. Dal Bo' and E. Eyster, 2018, "The Demand for Bad Policy When Voters Underappreciate Equilibrium Effects", *Review of Economic Studies*, 85, 964-998.

Callander, S., 2011, "Searching for Good Policies", *American Political Science Review*, 105, 643-662.

Strulovici, B., 2010, "Learning while Voting: Determinants of Collective Experimentation", *Econometrica*, 78, 933-971.

Freer, M., C. Martinelli, and S. Wang, 2018, "Collective Experimentation: A Laboratory Study", unpublished, George Mason University (in Courseworks).

Myerson, Roger, 1993, Incentives to Cultivate Favored Minorities under Alternative Voting Systems, *American Political Science Review*, 87, 856-869.

Methodology 1: Quantal Response Equilibrium (Oct 2)

Goeree, J. and C. Holt, 2001, "Ten Little Treasures of Game Theory and Ten Intuitive Contradictions", *American Economic Review*, 91, 1402-1422.

Goeree J., C. Holt, and T. R. Palfrey, 2008, "Quantal Response Equilibrium," in *The New Palgrave Dictionary of Economics*, Palgrave Macmillan, Basingstoke. In Courseworks.

McKelvey, R. and T. R. Palfrey, 1995, "Quantal Response Equilibrium for Normal-Form Games", *Games and Economic Behavior*, 10, 6-38.

McKelvey, R. and T. R. Palfrey, 1996, “A Statistical Theory of Equilibrium in Games”, *Japanese Economic Review*, 47, 186-209.

Goeree, J.K. and C.A. Holt, 2005, “An Explanation of Anomalous Behavior in Models of Political Participation,” *American Political Science Review*, 99, 201-213.

Voting 1: Voter Participation (Oct 9)

Levine and Palfrey 2007, “The Paradox of Voter Participation. A Laboratory Study”, *American Political Science Review*, 101, 143-158.

Feddersen T. and A. Sandroni, 2006, “A Theory of Participation in Elections”, *American Economic Review*, 96, 1271-1282.

Feddersen, T., S. Gailmard and A. Sandroni, 2009, “Moral Bias in Large Elections: Theory and Experimental Evidence”, *American Political Science Review*, 101, 143–58.

Morgan, J. and F. Vardy, 2012, “Mixed Motives and the Optimal Size of Voting Bodies”, *Journal of Political Economy*, 120, 986-1026.

Goeree, J. and J. Großer, 2007, “Welfare Reducing Polls”, *Economic Theory*, 31, 51-68.

Taylor, C. and H. Yildirim, 2010, “Public Information and Electoral Bias”, *Games and Economic Behavior*, 78, 353-375.

Agranov M., J. Goeree, J. Romero, and L. Yariv, 2018, “What Makes Voters Turn Out: The Effects of Polls and Beliefs,” *Journal of the European Economic Association*, 16, 825-856.

Voting 2. Aggregation of preferences. (Oct 16-Oct 23)

Krishna, Vijay and John Morgan, 2015, “Majority Rule and Utilitarian Welfare,” *American Economic Journal: Microeconomics*, 7, 339–375.

Goeree J. and Zhang, 2017, “One Man, One Bid”, *Games and Economic Behavior*, 101, 151-171.

Lalley, S. P. and E.G. Weyl, 2018, “Quadratic Voting”, University of Chicago, unpublished. In Courseworks.

Posner, E. A. and E. G. Weyl, 2015, “Voting Squared: Quadratic Voting in Democratic Politics” *Vanderbilt Law Review*, 68, 441–499.

Casella, A., 2005, “Storable Votes”, *Games and Economic Behavior*, 51, 391-419.

Casella, A., A. Gelman and T. Palfrey, 2006, “An Experimental Study of Storable Votes”, *Games*

and *Economic Behavior*, 57, 123-154.

Casella, A., and L. Sanchez, 2018, "Storable Votes and Quadratic Voting. An Experiment on Four California Initiatives", unpublished, Columbia University (in Courseworks).

Ledyard, John O. and Thomas R. Palfrey, 2002, "The Approximation of Efficient Public Good Mechanisms by Simple Voting Schemes", *Journal of Public Economics*, 83, 153–171.

Jackson, Matthew, and Hugo Sonnenschein, 2007, "Linking Decisions", *Econometrica*, 75, 241-57.

Engelmann, D. and V. Grimm, 2012, "Mechanisms for Efficient Voting with Private Information about Preferences," *Economic Journal*, 210, 1010-1041.

Methodology 2: more models of bounded rationality. Equilibrium models (cursed equilibrium, analogy-based expectation equilibrium), and non (level k, cognitive hierarchy).
(Oct 30 - Nov 13)

Eyster, E. and M. Rabin, 2005, "Cursed Equilibrium," *Econometrica*, 73:1623-1672.

Battaglini, M., R. Morton and T. Palfrey, 2010, "The Swing Voter's Curse in the Lab", *Review of Economic Studies*, 61-89.

Jehiel, P., 2005, "Analogy-based Expectation Equilibrium", *Journal of Economic Theory*, 123, 81-104.

Jehiel, P. and F. Koessler, 2008, "Revisiting games of incomplete information with analogy-based expectations", *Games and Economic Behavior*, 62, 533-557.

Huck, S., P. Jehiel, and T. Rutter, 2011, "Feedback spillover and analogy-based expectations: A multi-game experiment", *Games and Economic Behavior*, 71, 351-365.

Ettinger, D. and P. Jehiel, 2010, "A Theory of Deception", *American Economic Journal: Microeconomics*, 2, 1-20.

Crawford V., M. A. Costa-Gomes, and N. Iriberri, 2013, "Structural Models of Nonequilibrium Strategic Thinking: Theory, Evidence, and Applications," *Journal of Economic Literature*, 51, 5-62.

Nagel, Rosemarie. 1995. "Unraveling in Guessing Games: An Experimental Study." *American Economic Review*, 85(5): 1313-1326.

Grosskopf B. and R. Nagel, 2008, "The two-person beauty contest", *Games and Economic Behavior*, 62:93–99, 2008.

Georganas, S., P. J. Healy, and R. Weber, 2015, "On the Persistence of Strategic Sophistication", *Journal of Economic Theory*, 159, 369-400
(WP: http://healy.econ.ohio-state.edu/papers/Georganas_Healy_Weber-LevelKTests.pdf)

Burchardi, K. B., and S. P. Penczynski, 2014, "Out Of Your Mind: Eliciting Individual Reasoning in One Shot Games, *Games and Economic Behavior*, 84, 39-57.
(WP: <http://www.penczynski.de/attach/Outofyourmind.pdf>)

Kneeland, T., 2015, "Identifying Higher-Order Rationality", *Econometrica*, 83, 2065-2079.

Camerer, C., T.-H. Ho, and J.-K. Chong, 2004, "A Cognitive Hierarchy Model of Games," *Quarterly Journal of Economics* 119:861-898.

Voting 3: Aggregation of information (Nov 23 - Nov 30)

Austen-Smith, David and Jeffrey Banks, 1996, "Information Aggregation, Rationality and the Condorcet Jury Theorem", *American Political Science Review*, 90, 34-45.

McLennan, Andrew, 1998, "Consequences of the Condorcet Jury Theorem for Beneficial Information Aggregation by Rational Agents", *American Political Science Review*, 92: 413-418.

Feddersen, Timothy and Wolfgang Pesendorfer, 1998, "Convicting the Innocent: The Inferiority of Unanimous Jury Verdicts under Strategic Voting", *American Political Science Review*, 92, 23-35.

Feddersen, Timothy and Wolfgang Pesendorfer, 1997, "Voting Behavior and Information Aggregation in Elections with Private Information", *Econometrica*, 65, 1029-1058.

Coughlan, Peter J., 2000, "In Defense of Unanimous Jury Verdicts: Mistrials, Communication, and Strategic Voting", *American Political Science Review*, 94, 375-393.

Guarnaschelli, S, R. McKelvey and T. Palfrey, 2000, "An Experimental Study of Jury Decision Rules", *American Political Science Review*, 94: 407-23.

Goeree J. and L. Yariv, 2010, "An Experimental Study of Collective Deliberation", *Econometrica*, 79: 893-921.

Esponda, I and M. Vespa, 2014, "Hypothetical Thinking and Information Extraction in the Laboratory," *American Economic Journal: Microeconomics*, 6, 180-202.

Voting 4. Vote buying and vote trading (Dec. 4)

McKelvey, Richard and Peter Ordeshook, 1980, "Vote trading: An Experimental Study", *Public Choice*, 35, 151-184.

Casella, A., A. Llorente-Saguer, and T. Palfrey, 2012, “Competitive Equilibrium in Markets for Votes”, *Journal of Political Economy*, 120, 593-658.

Casella, A., T. Palfrey, and S. Turban, 2014, “Vote Trading with and without Party Leaders”. *Journal of Public Economics*, 112(C), 115-128.

Casella, A. and T. Palfrey, 2018, “Trading Votes for Votes: A Dynamic Theory”, and “Trading Votes for Votes: Experimental Evidence”, 2018. In Courseworks.

Dekel, Eddie and Asher Wolinsky, 2012, “Buying Shares and/or Votes for Corporate Control”, *Review of Economic Studies*, 79, 196–226.

Dekel, Eddie, Matt Jackson, and Asher Wolinsky, 2008, “Vote Buying: General Elections”, *Journal of Political Economy*, 116, 351–380.

Dekel, Eddie, Matt Jackson, and Asher Wolinsky, 2009, “Vote Buying: Legislatures and Lobbying”, *Quarterly Journal of Political Science*, 4, 103–128.

Methodology 3: Statistical methods (when??)

Gillen, B. E. Snowberg and L. Yariv, 2018, “Experiments with Measurement Errors: Techniques with Applications to the Caltech Cohort Study”, *Journal of Political Economy*, forthcoming. (WP: <http://people.hss.caltech.edu/~snowberg/papers/Gillen%20Snowberg%20Yariv%20Measurement%20Error%20NBER.pdf>)

Bajari P., and A. Hortacısu, 2005, "Are Structural Estimates of Auction Models Reasonable? Evidence from Experimental Data," *Journal of Political Economy*, 113(4):703-741.

Haile, P., A. Hortacsu, and G. Kosenok, 2008, “On the Empirical Content of Quantal Response Equilibrium”, *American Economic Review*, 98, 180-200.