

PS 132: FORMAL THEORIES IN POLITICAL SCIENCE

Spring 2006

LEEAT YARIV

CLASS MEETINGS

Mondays and Wednesdays, 10:30 - 11:55AM, in 315 Baxter.

PREREQUISITES

Basic knowledge of probability and game theory are necessary.

REQUIREMENTS

Formal requirements will include several problem sets (20%), a mid-term (30%) and a final exam (50%).

CONTACTING ME

Office: 301C Baxter Hall.

Feel free to e-mail me at lyariv@hss.caltech.edu to schedule a time to talk about class material or about your research interests.

COURSE WEBSITE

The syllabus, problem sets, and announcements will be posted on the class website: <http://www.hss.caltech.edu/~lyariv/PS132.htm>

OUTLINE

The goal of the class is to introduce students to tools of formal modeling as well as to provide an overview of the state of the art of models (and some experiments) pertaining to deliberations, political information processing, and voting behavior.

In particular, we will discuss how different institutions affect strategic behavior, how communication affects individual choices, and how political debate can be formally modeled. The interplay between the theoretical predictions and those observed in the field or in the lab will be explored throughout.

The following is a tentative road-map for the class. I am very open to spending more time on topics that students find exciting.

0. Introduction.
1. First defense of majoritarian elections: LLN and Condorcet's jury theorem.
2. Second defense of majoritarian elections: strategic behavior and its experimental validity.
3. Costly voting.
4. Costly information.
5. Deliberative democracy: cheap talk, the revelation principle, and some formal results on voting with communication (restricted through protocols or by the underlying social network, or unrestricted).
6. The media as a form of deliberations – polls, political advertising and its connections to categorization.
7. Rhetoric and language.
8. Attention and memory.

READING LIST

1. LLN and Condorcet's Jury Theorem

Condorcet, Marquis de. (1785), *Essai sur l'application de l'analyse à la probabilité des décisions rendues à la probabilité des voix*. Paris: De l'imprimerie royale, translated in 1976 to "Essay on the Application of Mathematics to the Theory of Decision-Making." in *Condorcet: Selected Writings*, ed. Keith M. Baker. Indianapolis, IN: Bobbs-Merrill.

Feller, W. [1968], *An Introduction to Probability Theory and Its Applications*, Volume I, Third Edition, John Wiley & Sons.

Young, H. P. [1988], "Condorcet's Theory of Voting," *American Political Science Review*, 82(4), 1231-1244 (JSTOR).

2. Strategic Voting and its Experimental Validity

*Austen-Smith, D. and Banks, J. [1996], "Information Aggregation, Rationality, and the Condorcet Jury Theorem," *The American Political Science Review*, Vol. 90, No. 1., 34-45 (JSTOR).

Battaglini, M., Morton, R., and Palfrey, T. [2006], "The Swing Voter's Curse in the Laboratory," mimeo, (available at: <http://www.princeton.edu/~mbattagl/swingvoter.pdf>).

Dekel, E. and Piccione, M. [2000], "Sequential Voting Procedure in Symmetric Binary Elections," *Journal of Political Economy*, Vol. 108, No. 1, 34-55 (JSTOR).

*Feddersen, T. and Pesendorfer, W. [1996], "The Swing Voter's Curse," *American Economic Review*, Vol. 86, No. 3, 408-424 (JSTOR).

Feddersen, T. J. and Pesendorfer, W. [1997], "Voting Behavior and Information Aggregation in Elections with Private Information," *Econometrica*, Vol. 65, No. 5, 1029-1058 (JSTOR).

Feddersen, T. J. and Pesendorfer, W. [1998], "Convicting the Innocent: The Inferiority of Unanimous Jury Verdicts," *American Political Science Review*, Vol. 92, No. 1, 23-35 (JSTOR).

Feddersen, T. J. and Pesendorfer, W. [1999], "Abstention in Elections with Asymmetric Information and Diverse Preferences," *American Political Science Review*, Vol. 93, No. 2, 381-398 (JSTOR).

Fey, M. and Kim, J. [2002], "The Swing Voter's Curse: Comment," *American Economic Review*, Vol. 92, No. 4, 1264-1268 (JSTOR).

*Guarnaschelli, S., McKelvey, R. C., and Palfrey, T. R. [2000], "An Experimental Study of Jury Decision Rules," *American Political Science Review*, Vol. 94, No. 2, 407-423.

Myerson, R. [1998], "Extended Poisson Games and the Condorcet Jury Theorem," *Games and Economic Behavior*, Vol. 25, 111-131.

3. Costly Voting

*Borgers, T. [2004], "Costly Voting," *American Economic Review*, Vol. 94, No. 1, 57-66 (Caltech library).

*Goeree, J. K. and Großer, J. [2006], "Welfare Reducing Polls," *Economic Theory*, forthcoming (available at: <http://www.hss.caltech.edu/~jkg/welfarereducingpolls.pdf>).

Krasa, S. and Polborn, M. [2004], "Is Mandatory Voting Better than Voluntary Voting?," mimeo (available at: <https://netfiles.uiuc.edu/polborn/www/costlyvoting.pdf>).

Palfrey, T. and Levine, D. [2005], "The Paradox of Voter Participation? A Laboratory Study," mimeo (available at: <http://levine.sscnet.ucla.edu/papers/turnout6.pdf>).

*Palfrey, T. and Rosenthal, H. [1985], "Voter Participation and Strategic Uncertainty," *American Political Science Review*, Vol. 79, No. 1, 62-78 (JSTOR).

4. Costly Information

Downs, A. [1957], *An Economic Theory of Democracy*, Harper-Collins Publishers.

Gerardi, D. and Yariv, L. [2004], "Information Acquisition in Committees," mimeo (LY's website).

Gershkov, A. and Szentes, B. [2004], "Optimal Voting Schemes with Costly Information Acquisition," mimeo (available at: <http://home.uchicago.edu/~szentes/votingp.pdf>).

*Persico, N. [2004], "Committee Design with Endogenous Information," *The Review of Economic Studies*, Vol. 71, No. 1, 165-194 (Caltech library).

*Martinelli, C. [2004], "Would Rational Voters Acquire Costly Information?," forthcoming in *Journal of Economic Theory* (available at <http://ciep.itam.mx/~martinel/rationalvoters.pdf>).

5. Deliberative Democracy

5a. Initial Attempts and Tools

*Austen-Smith, D. and Banks, J. S. [2000], "Cheap Talk and Burned Money," *Journal of Economic Theory*, Vol. 91, 1-16.

*Crawford, V. and Sobel, J. [1982], "Strategic Information Transmission," *Econometrica*, Vol. 50, 1431-1451 (JSTOR).

Elster, J. [1998], *Deliberative Democracy*, Cambridge University Press.

*Myerson, R. [1991], *Game Theory: Analysis of Conflict*, Cambridge University Press, Chapter 6.

5b. Communication through Voting and Polls

*Coughlan, P. [2000], "In Defense of Unanimous Jury Verdicts: Mistrials, Communication, and Strategic Voting," *American Political Science Review*, Vol. 94, No. 2, 375-393 (JSTOR).

*Fey, M. [1997], "Stability and Coordination in Duverger's Law: A Formal Model of Preelection Polls and Strategic Voting," *American Political Science Review*, Vol. 91, 135-147 (JSTOR).

Martinelli, C. [2002], "Simple Plurality versus Plurality Runoff with Privately Informed Voters," *Social Choice and Welfare*, Vol. 19, 901-920 (working paper version available at: <http://ftp.itam.mx/pub/academico/inves/martinelli/00-04.pdf>).

*Piketty, T. [2000], "Voting as Communicating," *The Review of Economic Studies*, Vol. 67, 169-191 (JSTOR).

5c. Unstructured Communication

Austen-Smith, D. and Feddersen, T. [2002], "Abstention and Voting Rules," mimeo (available at:

<http://www.kellogg.northwestern.edu/faculty/fedderse/homepage/papers/DeliberationWP2-11-08-02.pdf>).

*Chwe, M. [1999], "Minority Voting Rights Can Maximize Majority Welfare." *American Political Science Review*, Vol. 93, 85-97 (JSTOR).

*Gerardi, D. and Yariv, L. [2005], "Deliberative Voting," mimeo (LY's website).

Hafer, C. and Landa, D. [2004], "Deliberations as Self-Discovery and Institutions for Political Speech," mimeo (available at: <http://www.nyu.edu/gsas/dept/politics/faculty/hafer/DeliberationFinal.pdf>).

5d. The Effects of Social Networks on Communication

Fowler, J. [2005], "Turnout in a Small World," in Alan Zuckerman, ed., *Social Logic of Politics*, Temple University Press, 269-287 (available at: http://jhffowler.ucdavis.edu/turnout_in_a_small_world.pdf).

Huckfeldt, R. [2005], "Unanimity, Discord, and the Diffusion of Public Opinion: How Opinion Variance Affects Political Communication among Citizens," (available at: <http://psfaculty.ucdavis.edu/huckfeldt/mw05.pdf>).

*Jackson, M. and Yariv, L. [2006], "Diffusion on Social Networks," forthcoming in *Economie Publique* (LY's website).

*Newman, M. E. J. [2003], "The Structure and Function of Complex Networks," *SIAM Review*, Vol. 45, 167-256 (available at: <http://www-personal.umich.edu/~mejn/courses/2004/cscs535/review.pdf>).

6. The Media as a Form of Deliberations

*Gerber, A. S., and Green, D. P. [2000], "The Effects of Canvassing, Direct Mail, and Telephone Contact on Voter Turnout: A Field Experiment," *American Political Science Review*, Vol. 94, 653-63.

*Imai, K. [2005], "Do Get-Out-The-Vote Calles Reduce Turnout? The Importance of Statistical Methods for Field Experiments," *American Political Science Review*, Vol. 99, No. 2 (available at: <http://www.princeton.edu/~kimai/research/files/matching.pdf>).

Iyengar, S. and McGuire, W. J. [1993], *Explorations in Political Psychology*, Duke University Press.

*Mullainathan, S. and Shleifer, A. [2005], "The Market for News," forthcoming in *American Economic Review* (available at: http://post.economics.harvard.edu/faculty/shleifer/papers/marketfornews_090904.pdf).

Nickersen, D. W., Friedrichs, R. D., and King, D. [2006], "Partisan Mobilization Campaigns in the Field: Results from a Statewide Turnout Experiment in Michigan," forthcoming in *Political Research Quarterly* (available at: http://www.iop.harvard.edu/pdfs/king_nickerson_2005.pdf).

7. Rhetoric and Language

7a. Concepts and Categories

*Aragones, E., Gilboa, I., Postlewaite, A., and Schmeidler, D. [2005], "Fact Free Learning," *American Economic Review*, Vol. 95, 1355-1368 (available at: <http://www.econ.upenn.edu/~Eapostlew/paper/pdf/factfree.pdf>).

Azrieli, Y. and Lehrer, E. [2004], "Categorization generated by prototypes -- an axiomatic approach," mimeo (available at: http://www.math.tau.ac.il/~lehrer/Papers/Categorization_13.pdf).

*Jackson, M. and Fryer, R. [2004], "A Categorical Model of Cognition and Biased Decision-Making," mimeo (available at: <http://www.hss.caltech.edu/~jacksonm/categ.pdf>)

Mullainathan, S. [2002], "Thinking Through Categories," mimeo.

Tversky, A. [1977], "Features of Similarity," *Psychological Review*, 84, 327-352.

7b. Dimensionality

*Chwe, M. [2002], "Rationally Constructing the Dimensions of the Public Sphere," mimeo, UCLA (available at: <http://www.chwe.net/michael/co.pdf>)

*DeMarzo, P. M., Vayanos, D., and Zwiebel, J. [2003], "Persuasion Bias, Social Influence, and Unidimensional Opinions," *Quarterly Journal of Economics*, Vol. 118, No. 3, 909-968 (available at: <http://faculty-gsb.stanford.edu/demarzo/papers/persuasion.pdf>).

*Spector, D. [2000], "Rational Debate and One-Dimensional Conflict," *Quarterly Journal of Economics*, Vol. 115 (1), 181-200.

7c. Framing

Benford, R. D. and Snow, D. A. [2000], "Framing Processes and Social Movements," *Annual Review of Sociology*, Vol. 26, 611-639 (available at: <http://arjournals.annualreviews.org/doi/abs/10.1146/annurev.soc.26.1.611>)

Druckman, James N. [2001], "Using Credible Advice to Overcome Framing Effects," *Journal of Law, Economics and Organizations*, Vol. 17, No. 1, 62-82.

Margolis, E. and Laurence, S. [1999], *Concepts: Core Readings*, MIT Press.

8. Attention and Memory

Gabaix, X., Laibson, D. I., Moloche, G., and Weinberg, S. [2004], "Information Acquisition: Experimental Analysis of a Boundedly Rational Model," forthcoming in *American Economic Review* (available at: http://econ-www.mit.edu/faculty/download_pdf.php?id=235).

Iyengar, S. and McGuire, W. J. [1993], *Explorations in Political Psychology*, Duke University Press.

Mullainathan, S. [2002], "A Memory Based Model of Bounded Rationality," *Quarterly Journal of Economics*, Vol. 117, No. 3, 735-774 (available at: <http://post.economics.harvard.edu/faculty/mullainathan/papers/memory.pdf>).

*Wilson, A. [2003], "Bounded Memory and Biases in Information Processing," mimeo.