

# GAMES, STRATEGY, AND POLITICS

Politics V53.0844  
New York University  
Fall 2010

Class: Mon. & Wed., 2:00 - 3:15 PM

TA: Michael Aklin, Rm. 419, Wed., 9 - 11 AM, [michael.aklin@nyu.edu](mailto:michael.aklin@nyu.edu)

S. J. Brams  
19 West 4<sup>th</sup> St., Rm. 309  
(212) 998-8510; [steven.brams@nyu.edu](mailto:steven.brams@nyu.edu)

Office Hrs.: Mon., 3:30 - 6 PM

Applications of game theory—and an alternative strategic theory called “theory of moves”—as well as social-choice theory to a wide variety of strategic situations, principally but not exclusively in politics, will be examined. Uses of strategy in voting in committees and elections, in political campaigns, in the defense and deterrence policies of nations, and in bargaining and coalition-building situations will be among the topics discussed. Secrecy and deception as political strategies will also be analyzed.

Although the applications of strategic thinking will be mainly to American and international politics, strategy in everything from the Bible to sports and business today will be studied, too. Social-choice topics that will be analyzed include the manipulability of different voting systems, problems of achieving proportional representation in parliamentary democracies, and conflicts among different apportionment methods. Fair-division procedures for resolving disputes will also be analyzed.

In addition to the required readings, further readings will be recommended throughout the course for those interested in pursuing particular topics in greater depth. No mathematical training beyond high school mathematics is assumed in the course. The written requirements of the course include a midterm and a final examination plus a short paper on a topic—to which game theory is applicable—that is chosen in consultation with the instructor. Each of the three written requirements will count approximately 30 percent towards your final grade, with homework constituting the remaining 10 percent.

## Required Books

Brams, Steven J. *RATIONAL POLITICS: DECISIONS, GAMES, AND STRATEGY*. Washington, DC/Boston: CQ Press/Academic Press, 1985/1989 (out of print; used copies and bound reproductions in bookstore). **RP**

Brams, Steven J. *THEORY OF MOVES*. Cambridge, UK: Cambridge University Press, 1994. **TOM**

Brams, Steven J., and Alan D. Taylor. *THE WIN-WIN SOLUTION: GUARANTEEING FAIR SHARES TO EVERYBODY*. New York: W.W. Norton, 1999. **WW**

Dixit, Avinash K., and Barry J. Nalebuff. *THE ART OF STRATEGY: A GAME THEORIST'S GUIDE TO SUCCESS IN BUSINESS AND LIFE*. New York: W.W. Norton, 2008. **AS**

### Assignments Due

Sept. 8: **RP**, chs. 1-2; **TOM**, Introduction; **AS**, Introduction and ch. 1  
 Sept. 13: **TOM**, ch. 1; **AS**, chs. 2-3  
 Sept. 20: **TOM**, ch. 2; **AS**, chs. 4-5  
 Sept. 27: **TOM**, ch. 3; **AS**, chs. 6-7  
 Oct. 4: **TOM**, ch. 4; **AS**, ch. 8  
 Oct. 13: **TOM**, chs. 5-6  
 Oct. 18: **TOM**, chs. 7-8  
 Oct. 25: Review and Midterm Examination  
 Nov. 1: **RP**, ch. 3; **AS**, chs. 9-10  
 Nov. 8: **RP**, ch. 4; **AS**, chs. 11-12  
 Nov. 13: **RP**, chs. 5 & 7 (skip ch. 6)  
 Nov. 22: **RP**, chs. 8-9; **AS**, chs. 13-14  
 Nov. 29: 6-8 page paper due; oral reports  
 Dec. 6: **WW**, entire book  
 Dec. 13: Review  
 Dec. 20(?): Final Examination

### Game Theory Texts

Barron, E. N. GAME THEORY: AN INTRODUCTION. Wiley, 2008.

Binmore, Ken. PLAYING FOR REAL: A TEXT ON GAME THEORY. Oxford University Press, 2007.

Camerer, Colin F. BEHAVIORAL GAME THEORY: EXPERIMENTS IN STRATEGIC INTERACTION. Princeton University Press, 2003.

Colomer, Josep P. THE SCIENCE OF POLITICS. Oxford University Press, 2010.

Davis, Morton D. GAME THEORY: A NONTECHNICAL INTRODUCTION, 2<sup>nd</sup> ed. Basic, 1983.

Dixit, Avinash, David H. Reiley, and Susan Skeath. GAMES OF STRATEGY, 3<sup>rd</sup> ed. W.W. Norton, 2009.

Dutta, Prajit K. STRATEGIES AND GAMES: THEORY AND PRACTICE. MIT Press, 1999.

Fudenberg, Drew, and Jean Tirole. GAME THEORY. MIT Press, 1991.

Geckil, Ilhan Kubilay, and Partrick L. Anderson. APPLIED GAME THEORY AND STRATEGIC BEHAVIOR. CRC Press, 2009.

Gibbons, Robert. GAME THEORY FOR APPLIED ECONOMISTS. Princeton University Press, 1993.

- Gintis, Herbert. THE BOUNDS OF REASON: GAME THEORY AND THE UNIFICATION OF THE BEHAVIORAL SCIENCES. Princeton University Press, 2009.
- Gintis, Herbert. GAME THEORY EVOLVING: A PROBLEM-CENTERED INTRODUCTION TO STRATEGIC MODELING IINTERACTION, 2<sup>nd</sup> ed. Princeton University Press, 2009.
- Gura, Ein Ya, and Michael B. Maschler. INSIGHTS INTO GAME THEORY: AN ALTERNATIVE MATHEMATICAL EXPERIENCE. Cambridge University Press, 2008.
- Hargreaves Heap, Shaun P., and Yanis Varoufakis. GAME THEORY: A CRITICAL TEXT, rev. ed. Routledge, 2004.
- Harrington, Joseph E., Jr. GAMES, STRATEGIES, AND DECISION MAKING. Worth, 2008.
- Lepton-Brown, Kevin, and Yoav Shoham. ESSENTIALS OF GAME THEORY: A CONCISE, MULTIDISCIPLINARY INTRODUCTION. Morgan & Claypod, 2008.
- Luce, R. Duncan, and Howard Raiffa. GAMES AND DECISIONS: A CRITICAL SURVEY. Wiley, 1957.
- Morrow, James D. GAME THEORY FOR POLITICAL SCIENTISTS. Princeton University Press, 1994.
- Nowak, Martin A. EVOLUTIONARY DYNAMICS: EXPLORING THE EQUATIONS OF LIFE. Harvard University Press, 2006.
- Osborne, Martin J. AN INTRODUCTION TO GAME THEORY. Oxford University Press, 2004.
- Rubinstein, Ariel, and Martin J. Osborne. A COURSE IN GAME THEORY. MIT Press, 1994.
- Straffin, Philip D. GAME THEORY AND STRATEGY. Mathematical Association of America, 1993.
- Watson, Joel. STRATEGY: AN INTRODUCTION TO GAME THEORY, 2<sup>ed</sup> ed. W. W. Norton, 2008.

Applications and History of Game Theory and Social-Choice Theory

- Albert, Michael H., and Richard J. Nowakowski (eds.). *GAMES OF NO CHANCE 3*. Cambridge University Press, 2009.
- Ankeny, Nesmith C. *POKER STRATEGY: WINNING WITH GAME THEORY*. Basic, 1981.
- Arrow, Kenneth J., Amartya K. Sen, and Kotaro Suzumura (eds.). *HANDBOOK OF SOCIAL CHOICE AND WELFARE*, vol. 1. North Holland, 2002
- Aumann, Robert J., and Sergiu Hart (eds.). *HANDBOOK OF GAME THEORY WITH ECONOMIC APPLICATIONS*, vols. 1/2/3. North Holland, 1992/1994/2002.
- Austen-Smith, David, and Jeffrey S. Banks. *POSITIVE POLITICAL THEORY I/II: COLLECTIVE PREFERENCE/STRATEGY AND STRUCTURE*. University of Michigan Press, 2000/2005.
- Avenhaus, Rudolf, and I. William Zartman (eds.). *DIPLOMACY GAMES: FORMAL MODELS AND INTERNATIONAL NEGOTIATIONS*. Springer, 2007.
- Axelrod, Robert. *THE EVOLUTION OF COOPERATION*. Basic, 1984.
- Baird, Douglas G., Robert H. Gertner, and Randal C. Picker. *GAME THEORY AND THE LAW*. Harvard University Press, 1994.
- Bates, Robert H., *et al.* *ANALYTIC NARRATIVES*. Princeton University Press, 1998.
- Beck, József. *COMBINATORIAL GAMES: TIC-TAC-TOE THEORY*. Cambridge University Press, 2008.
- Bewerdorff, Jörg. *LUCK, LOGIC, AND WHITE LIES: THE MATHEMATICS OF GAMES*. A. K. Peters, 2005.
- Binmore, K. G. *GAME THEORY AND THE SOCIAL CONTRACT*. Vols 1/2: *PLAYING FAIR/JUST PLAYING*. MIT Press, 1994/1998.
- Binmore, Ken. *RATIONAL DECISIONS*. Princeton University Press, 2009.
- Boorman, Scott A. *THE PROTRACTED GAME: A WEI-CH'I INTREPRETATION OF MAOIST REVOLUTIONARY STRATEGY*. Oxford University Press, 1969.
- Börgers Cristoph. *MATHEMATICS OF SOCIAL CHOICE: VOTING, COMPENSATION, AND DIVISION*. Philadelphia, SIAM. 2010.
- Brams, Steven J. *GAME THEORY AND POLITICS*. Free Press/Dover, 1975/2004.
- Brams, Steven J. *PARADOXES IN POLITICS: AN INTRODUCTION TO THE NONOBVIOUS IN POLITICAL SCIENCE*. Free Press, 1976.
- Brams, Steven J. *THE PRESIDENTIAL ELECTION GAME*. Yale University Press,

1978/2007.

- Brams, Steven J. **BIBLICAL GAMES: GAME THEORY AND THE HEBREW BIBLE.** MIT Press, 1980/2003.
- Brams, Steven J. **SUPERIOR BEINGS: IF THEY EXIST, HOW WOULD WE KNOW? GAME-THEORETIC IMPLICATIONS OF OMNISCIENCE, OMNIPOTENCE, IMMORTALITY, AND INCOMPREHENSIBILITY.** Springer, 1983/2007.
- Brams, Steven J. **SUPERPOWER GAMES: APPLYING GAME THEORY TO SUPERPOWER CONFLICT.** Yale University Press, 1985.
- Brams, Steven J. **NEGOTIATION GAMES: APPLYING GAME THEORY TO BARGAINING AND ARBITRATION.** Routledge, 1990/2003.
- Brams, Steven J. **MATHEMATICS AND DEMOCRACY: DESIGNING BETTER VOTING AND FAIR-DIVISION PROCEDURES.** Princeton University Press, 2008.
- Brams, Steven J., and Peter C. Fishburn. **APPROVAL VOTING.** Birkhäuser Boston, 1983/2007.
- Brams, Steven J., and D. Marc Kilgour. **GAME THEORY AND NATIONAL SECURITY.** Basil Blackwell, 1988.
- Brams, Steven J., and Alan D. Taylor. **FAIR DIVISION: FROM CAKE-CUTTING TO DISPUTE RESOLUTION.** Cambridge University Press, 1996.
- Brandenburger, Adam, and Barry J. Nalebuff. **CO-OPETITION.** New York: Doubleday, 1996.
- Case, James. **COMPETITION: THE BIRTH OF A NEW SCIENCE.** Hill and Wang, 2007.
- Chwe, Michael Suk-Young. **RATIONAL RITUAL: CULTURE, COORDINATION, AND COMMON KNOWLEDGE.** Princeton University Press, 2001.
- Cox, Gary W. **MAKING VOTES COUNT: STRATEGIC COORDINATION IN THE WORLD'S ELECTORAL SYSTEMS.** Cambridge University Press, 1997.
- Downs, Anthony. **AN ECONOMIC THEORY OF DEMOCRACY.** Harper, 1957.
- Elster, Jon. **EXPLAINING SOCIAL BEHAVIOR: MORE NUTS AND BOLTS FOR THE SOCIAL SCIENCES.** Cambridge University Press, 2007.
- Farquharson, Robin. **THEORY OF VOTING.** Yale University Press, 1969.

- Felsenthal, Dan S., and Moshé Machover. THE MEASUREMENT OF VOTING POWER: THEORY AND PRACTICE, PROBLEMS AND PARADOXES. Edward Elgar, 1998.
- Fisher, Len. ROCK, PAPER, SCISSORS: GAME THEORY IN EVERYDAY LIFE. Basic, 2008.
- Gaertner, Wulf. A PRIMER IN SOCIAL CHOICE THEORY. Oxford University Press, 2006.
- Garfinkel, Michelle R., and Setergios Skaperdas (eds.). THE POLITICAL ECONOMY OF CONFLICT AND APPROPRIATION. Cambridge University Press, 1997.
- Gilboa, Itzhak. RATIONAL CHOICE. MIT Press, 2010.
- Gilboa, Itzhak, and David Schmeidler. A THEORY OF CASE-BASED DECISIONS. Cambridge University Press, 2001.
- Grillidi Cortona, Pietro. EVALUATION AND OPTIMIZATION OF ELECTORAL SYSTEMS. SIAM, 1999.
- Hanley, Nick, and Henk Folmer (eds.). GAME THEORY AND THE ENVIRONMENT. Edward Elgar, 1998.
- Hinich, Melvin J., and Michael C. Munger. ANALYTICAL POLITICS. Cambridge University Press, 1997.
- Hodge, Jonathan K., and Richard E. Klima. THE MATHEMATICS OF VOTING AND ELECTIONS: A HANDS-ON APPROACH. American Mathematical Society, 2005.
- Howard, Nigel. PARADOXES OF RATIONALITY: THEORY OF METAGAMES AND POLITICAL BEHAVIOR. MIT Press, 1971.
- Kaminski, Marek M. GAMES PRISONERS PLAY: THE TRAGICOMIC WORLDS OF POLISH PRISON. Princeton University Press, 2004.
- Konrad, Kai A. STRATEGY AND DYNAMICS IN CONTESTS. Oxford University Press, 2009.
- Kuhn, Harold W. (ed.). CLASSICS IN GAME THEORY. Princeton University Press, 1997.
- Laruelle, Annick, and Federico Valenciano. VOTING AND COLLECTIVE DECISION-MAKING. Cambridge University Press, 2008.
- Levin, Simon A. (ed.). GAMES, GROUPS, AND THE GLOBAL GOOD. Springer,

- 2009.
- McCain, Roger A. GAME THEORY AND PUBLIC POLICY. Edward Elgar, 2009.
- McDonald, John. THE GAME OF BUSINESS. Doubleday, 1975.
- McLean, Iain, and Arnold B. Urken (eds.). CLASSICS OF SOCIAL CHOICE. University of Michigan Press, 1995.
- Mailath, George J., and Larry Samuelson. REPEATED GAMES AND REPUTATIONS: LONG-RUN RELATIONSHIPS. Oxford University Press, 2006.
- Mérol, László. MORAL CALCULATIONS: GAME THEORY, LOGIC, AND HUMAN FRAILTY. Copernicus/Springer-Verlag, 1998.
- Milgrom, Paul. PUTTING AUCTION THEORY TO WORK. Cambridge University Press, 2004.
- Mor, Ben D. DECISION AND INTERACTION IN CRISIS: A MODEL OF INTERNATIONAL CRISIS BEHAVIOR. Praeger, 1993.
- Moulin, Hervé J. FAIR DIVISION AND COLLECTIVE WELFARE. MIT Press, 2003
- Mueller, Dennis C. PUBLIC CHOICE III. Cambridge University Press, 2003.
- Muzzio, Douglas. WATERGATE GAMES: STRATEGIES, CHOICES, OUTCOMES. New York University Press, 1982.
- Myerson, Michael I. POLITICAL NUMERACY: MATHEMATICAL PERSPECTIVES ON OUR CHAOTIC CONSTITUTION. W.W. Norton, 2002.
- Nasar, Sylvia. A BEAUTIFUL MIND. Simon and Schuster, 1998.
- Nisan, Noam, *et al.* (eds.). ALGORITHMIC GAME THEORY. Cambridge University Press, 2007.
- Nurmi, Hannu. VOTING PARADOXES AND HOW TO DEAL WITH THEM. Springer-Verlag, 1999.
- Nurmi, Hannu. MODELS OF POLITICAL ECONOMY. Routledge, 2006.
- O'Neill, Barry. HONOR, SYMBOLS, AND WAR. University of Michigan Press, 1999.
- Ostrom, Elinor. GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION. Cambridge University Press, 1990.
- Parsons, Simon, Piotr Gmytrasiewicz, and Michael Wooldridge (eds.). GAME THEORY

- AND DECISION THEORY IN AGENT-BASED SYSTEMS. Kluwer, 2002.
- Poundstone, William. PRISONER'S DILEMMA: JOHN VON NEUMANN, GAME THEORY, AND THE PUZZLE OF THE BOMB. Doubleday, 1992.
- Ray, Debraj. A GAME-THEORETIC PERSPECTIVE ON COALITION FORMATION. Oxford University Press, 2007.
- Regenwetter, Michel, *et al.* BEHAVIORAL SOCIAL CHOICE: PROBABILISTIC MODELS, STATISTICAL INFERENCE, AND APPLICATIONS. Cambridge University Press, 2006.
- Riker, William H. THE THEORY OF POLITICAL COALITIONS. Yale University Press, 1962.
- Riker, William H. LIBERALISM AGAINST POPULISM: A CONFRONTATION BETWEEN THE THEORY OF DEMOCRACY AND THE THEORY OF SOCIAL CHOICE. Freeman, 1982.
- Riker, William H. THE ART OF POLITICAL MANIPULATION. Yale University Press, 1986.
- Riker, William H. THE STRATEGY OF RHETORIC. Yale University Press, 1996.
- Robertson, Jack, and William Webb. CAKE-CUTTING ALGORITHMS: BE FAIR IF YOU CAN. A K Peters, 1998.
- Robinson, David, and David Goforth. THE TOPOLOGY OF THE 2 X 2 GAME: A NEW PERIODIC TABLE. Routledge, 2005.
- Saari, Donald G. DISPOSING DICTATORS, DEMYSTIFYING VOTING PARADOXES: SOCIAL CHOICE ANALYSIS. Cambridge University Press, 2008.
- Schelling, Thomas C. MICROMOTIVES AND MACROBEHAVIOR. Norton, 1978.
- Schelling, Thomas C. THE STRATEGY OF CONFLICT. Harvard University Press, 1960.
- Schofield, Norman. ARCHITECTS OF POLITICAL CHANGE: CONSTITUTIONAL QUANDRIES AND SOCIAL CHOICE THEORY. Cambridge University Press, 2006.
- Schofield, Norman, and Itai Sened. MULTIPARTY DEMOCRACY: ELECTIONS AND LEGISLATIVE POLITICS. Cambridge University Press, 2006.
- Shepsle, Kenneth A., and Mark S. Bonchek. ANALYZING POLITICS: RATIONALITY, BEHAVIOR, AND INSTITUTIONS. W. W. Norton, 1997.

- Sigmund, Karl. THE CALCULUS OF SELFISHNESS. Princeton University Press, 2010.
- Simeone, Bruno, and Friedrich Pukelsheim (eds.). MATHEMATICS AND DEMOCRACY: RECENT ADVANCES IN VOTING SYTEMS AND COLLECTIVE CHOICE. Springer, 2006.
- Szpiro, Geoge G. NUMBERS RULE: THE VEXING MATHEMATICS OF DEMOCRACY, FROM PLATO TO THE PRESENT. Princeton University Press, 2010.
- Taylor, Alan D., and Allison M. Pacelli. MATHEMATICS AND POLITICS: STRATEGY, VOTING, POWER AND PROOF, 2<sup>nd</sup> ed. Springer, 2008.
- Taylor, Alan D. SOCIAL CHOICE AND THE MATHEMATICS OF MANIPULATION. Cambridge University Press, 2005.
- Taylor, Alan D., and William S. Zwicker. SIMPLE GAMES: DESIRABILITY RELATIONS, TRADING, PSEUDOWEIGHTINGS. Princeton University Press, 1999.
- Tsebelis, George. NESTED GAMES: RATIONAL CHOICE IN COMPARATIVE POLITICS. University of California Press, 1990.
- Vajda, Steven. MATHEMATICAL GAMES AND HOW TO PLAY THEM. Ellis Horwood, 1992.
- Weintraub, E. Roy (ed.). TOWARD A HISTORY OF GAME THEORY. Duke University Press, 1992.
- Wittman, Donald. THE MYTH OF DEMOCRATIC FAILURE: WHY POLITICAL INSTITUTIONS ARE EFFICIENT. University of Chicago Press, 1995.
- Wydick, Bruce. GAMES IN ECONONMIC DEVELOPMENT. Cambridge University Press, 2008.
- Young, Peyton. EQUITY IN THEORY AND PRACTICE. Princeton University Press, 1994.
- Zagare, Frank C. THE GAMES OF JULY: EXPLAINING THE GREAT WAR. University of Michigan Press, 2010.
- Zagare, Frank C., and D. Marc Kilgour. PERFECT DETERRENCE. Cambridge University Press, 2000.