

University of Mannheim
Chair of Political Economy
Prof. Dr. Thomas J. Bräuning

Game Theory II

Syllabus Fall 2017

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Course Description

This course is a continuation of the intro into Game Theory and covers advanced topics in game theory with a particular emphasis on the link of theories, methods and empirics. At the core, we discuss techniques used to analyze settings of imperfect information and much emphasis will be put on how to set up, evaluate and interpret these models. Topics covered include normal form games with incomplete information and Bayesian equilibrium, stochastic games and Markov-perfect equilibrium, signaling games and cheap talk, information transmission, agency models, network models, comparative statics, monotone comparative statics, fix point problems and structural estimation. Emphasis will be placed on prominent applications of those concepts in political science, in both comparative and international politics.

The course outline has been designed by myself and Tilko Swalve (who will be the instructor in two or so sessions). Yet, as this is a seminar, the course allows students to pursue areas of individual interest in more depth, and therefore the course content is to some extent determined based on the interests of students.

Organization

I will teach from lecture notes most of the times but I would like to encourage students to take the chance and prepare materials or papers on the syllabus (or related papers) in a way that they can present and explain what's going on there to other students. In such a session I would possibly do the intro, talk about key ideas and present one or two models. We would then have a student presentation of a second (or third) paper. It's up to you how you do it (focusing on intuition or maths, using slides or the blackboard, etc). As we are a big crowd this will not work out if anyone presents. So volunteers are very much welcomed! Think about it and let me know ASAP.

We hold a mini workshop in the final two session. Each student presents an idea for or a draft of a model for the problem she or he is currently working on. There is no expectation to do super fancy things. Quite to the contrary, we should strive for the simplest model that captures your intuition. If we allow for 30 min. for each presentation, we most likely have to start earlier on these days. Just to let you know.

For the term paper, a five or so page outline will do it.

Resources

We will make most of the readings available online. However, you may want to obtain a copy of one of the following books:

Tadelis, S. (2013). *Game theory: an introduction*. Princeton, N.J.: Princeton University Press

Gehlbach, S. (2013). *Formal models of domestic politics*. Analytical methods for social research. New York, NY: Cambridge University Press

Fudenberg, D. & Tirole, J. (2004). *Game theory*. Cambridge, Mass.: MIT Press

Schedule

Sep	05	Introduction: Some Basic Concepts – Reconsidered and Extended
Sep	12	Useful Math Tools and Comparative Statics
Sep	19	Spatial Model I: Convergence, Divergence and the Citizen-Candidate Model
Sep	26	Spatial Model II: <i>cont'd</i> & Valence Models
Oct	03	Public Holidays
Oct	10	Agency Model I: Moral Hazard & Adverse Selection
Oct	17	Agency Model II Career Concerns & Pandering
Oct	24	Media Bias
Oct	31	Public Holidays
Nov	07	Structural Estimation
Nov	14	Networks
Nov	21	Markov Perfect Equilibrium OR Information Aggregation in Committees (TBD)
Nov	28	Modeling Workshop I
Dec	05	Modeling Workshop II

There are other topics that alternatively could be covered in section 3: quantal response equilibrium, global games, or mechanism design

Prepare all readings with a '*'. The rest are recommended texts.

Sep 5, Introduction: Some Basic Concepts – Reconsidered and Extended

In this introductory session, we review some basic concepts, e.g. best response correspondences, mixed strategies, and finding equilibria in continuous strategy spaces. We consider finding equilibria as a fixed point problem, look at some fix point theorems and prove Nash's existence theorem.

* Tadelis, S. (2013). *Game theory: an introduction*. Princeton, N.J.: Princeton University Press, Ch. 6.4

Border, K. C. (1985). *Fixed point theorems with applications to economics and game theory*. Cambridge: Cambridge University Press

Sep 12, Useful Math Tools and Comparative Statics

We introduce some mathematical tools and concepts that will turn out to be useful for determining and study the behavior of equilibria: implicit differentiation, implicit function theorem, envelope theorem, comparative statics, single-crossing property, monotone comparative statics, monotone likelihood ratio property, maximum theorem

Sydsæter, K. & Hammond, P. J. (2008). *Essential mathematics for economic analysis*. Harlow ; Munich [u.a.]: Financial Times Prentice Hall, 3 edition

Sundaram, R. K. (2011). *A first course in optimization theory*. Cambridge: Cambridge University Press, 19 edition

* Ashworth, S. & Bueno de Mesquita, E. (2006b). Monotone comparative statics for models of politics. *American Journal of Political Science*, 50(1), 214–231

* Meltzer, A. & Richard, S. (1981). A rational theory of the size of government. *The Journal of Political Economy*, 89(5), 914–927

Sep 19, Spatial Models I: Convergence, Divergence, and Citizen-Candidate Model

We consider conditions for existence of equilibria and 'convergence or divergence' of positions in the spatial model of candidate or party competition: classical Downs-Hotelling model, extension to multiple dimensions, multiparty competition, and policy-seeking candidates (Wittman-Calvert model), introduce uncertainty: probabilistic voting models (Hinich mean voter theorem), aggregate uncertainty (Calvert model, Roemer model), and a multiparty multi-dimensional probabilistic model (Lin et al. model). We also look at the citizen-candidate model in which voter do not 'affect but select policies'.

* Gehlbach, S. (2013). *Formal models of domestic politics*. Analytical methods for social research. New York, NY: Cambridge University Press, chap. 1 & 2

* Calvert, R. L. (1985). Robustness of the Multidimensional Voting Model: Candidate Motivations, Uncertainty, and Convergence. *American Journal of Political Science*, 29(1), 69–95

Lin, T.-M., Enelow, J. M., & Dorussen, H. (1999). Equilibrium in multicandidate probabilistic spatial voting. *Public Choice*, 98(1), 59–82

* Besley, T. & Coate, S. (1997). An economic model of representative democracy. *The quarterly journal of economics*, 112(1), 85–

Historic

Downs, A. (1957). *An Economic Theory of Democracy*. Harper and Row

Wittman, D. (1977). Candidates with policy preferences: A dynamic model. *Journal of Economic Theory*, 14(1), 180–189

Lindbeck, A. & Weibull, J. W. (1987). Balanced-budget redistribution as the outcome of political competition. *Public Choice*, 52(3), 273–297

Citizen candidate model / empirical

Chattopadhyay, R. & Dufo, E. (2004). Women as policy makers: Evidence from a randomized policy experiment in india. *Econometrica*, 72(5), 1409–1443

Lee, D. S., Moretti, E., & Butler, M. (2005). Do voters affect or elect policies? evidence from the u. s. house. *Quarterly Journal of Economics*, 119(3), 807–859

Sep 26, Spatial Models II: cont'd & Valence

How do voters vote? While one strand of literature has focused on the importance of policy positions, a second strand has pointed to the importance of non-policy, valence attributes of candidates like competence, integrity, incumbency or experience. Connecting these literatures, valence models seek to understand how voters vote and how valence affects candidate/party competition when valence is fixed (that is exogenous) or agents can invest in costly valence (that is valence is endogenous).

* Ansolabehere, S. & Snyder, J. M. (2000). Valence Politics and Equilibrium in Spatial Election Models. *Public Choice*, 103(3/4), 327–336

* Serra, G. (2010). Polarization of what? A model of elections with endogenous valence. *The Journal of Politics*, 72(2), 426–437

Ashworth, S. & De Mesquita, E. B. (2009). Elections with platform and valence competition. *Games and Economic Behavior*, 67(1), 191–216

Peress, M. (2010). The spatial model with non-policy factors: A theory of policy-motivated candidates. *Social Choice and Welfare*, 34(2), 265–294

Multi-candidate / multi-party

Schofield, N. (2007). The Mean Voter Theorem: Necessary and Sufficient Conditions for Convergent Equilibrium. *Review of Economic Studies*, 74(3), 965–980

Schofield, N. & Sened, I. (2006). *Multiparty democracy: Elections and legislative politics*. Cambridge: Cambridge University Press

Adams, J., Merrill III, S., & Grofman, B. (2005). *A unified theory of party competition: A cross-national analysis integrating spatial and behavioral factors*. Cambridge: Cambridge University Press

Bräuninger, T. & Giger, N. (2016). Strategic ambiguity of party positions in multi-party competition. *Political Science Research and Methods*, XXX(X), 1–22

Empirical

Stone, W. J. & Simas, E. N. (2010). Candidate valence and ideological positions in U.S. House elections. *American Journal of Political Science*, 54(2), 371–388

Oct 10, Agency Model I: Moral Hazard and Adverse Selection

A central question in the economic literature on contracts concerns the relationship between principals and agents. How do contracts shape the relationship between principals and agents? The answer has direct relevance for political agency that is the relationship between electors and politicians under democratic rule. We consider seminal agency problems, moral hazard, adverse selection, and information asymmetry to study accountability of those elected. In a second session, we look at more specific issues focusing on pandering and career concern models.

* Gehlbach, S. (2013). *Formal models of domestic politics*. Analytical methods for social research. New York, NY: Cambridge University Press, Ch. 7

* Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, 87(3), 355–374

Besley, T. (2006). *Principled Agents? The Political Economy of Good Government*. The Lindahl Lectures. Oxford University Press, Ch. 3

Historic

Barro, R. (1973). The Control of Politicians: An Economic Model. *Public Choice*, 14, 19–42

Ferejohn, J. (1986). Incumbent Performance and Electoral Control. *Public Choice*, 50(1), 5–25

Fearon, J. (1999). Electoral Accountability and the Control of Politicians: Selecting Good Types versus Sanctioning Poor Performance. In A. Przeworski, S. C. Stokes, & B. Manin (Eds.), *Democracy, Accountability and Representation* chapter 2. Cambridge University Press

Oct 17, Agency Model II: Career Concerns and Pandering

Pandering

* Canes-Wrone, B., Herron, M., & Shotts, K. (2001). Leadership and Pandering: A Theory of Executive Policymaking. *American Journal of Political Science*, 45(3), 532–550

Fox, J. & Shotts, K. (2009). Delegates or Trustees? A Theory of Political Accountability. *Journal of Politics*, 71(4), 1225–1237

Prat, A. (2005). The Wrong Kind of Transparency. *The American Economic Review*, 95(3), 862–877

Majumdar, S. & Mukand, S. (2004). Policy Gambles. *The American Economic Review*, 94(4), 1207–1222

Maskin, E. & Tirole, J. (2004). The Politician and the Judge: Accountability in Government. *American Economic Review*, 94(4), 1034–1054

Morris, S. (2001). Political Correctness. *Journal of Political Economy*, 109(2), 231–265

Ashworth, S. (2012). Electoral Accountability: Recent Theoretical and Empirical Work. *Annual Review of Political Science*, 15, 183–201

Career Concerns

- * Ashworth, S. (2005). Reputational Dynamics and Political Careers. *The Journal of Law, Economics, & Organization*, 21(2), 441–466

Ashworth, S. & Bueno de Mesquita, E. (2006a). Delivering the goods: Legislative particularism in different electoral and institutional settings. *Journal of Politics*, 68(1), 168–179

Ashworth, S. & Bueno de Mesquita, E. (2008). Electoral Selection, Strategic Challenger Entry, and the Incumbency Advantage. *Journal of Politics*, 70(4), 1006–1025

Bueno de Mesquita, E. & Stephenson, M. C. (2007). Regulatory quality under imperfect oversight. *American Political Science Review*, 101(3), 605–620

Ashworth, S. & Bueno de Mesquita, E. (2014). Is Voter Competence Good for Voters?: Information, Rationality, and Democratic Performance. *American Political Science Review*, 108(3), 565–587

Historic

Holmström, B. (1999). Managerial incentive problems: A dynamic perspective. *Review of Economic Studies*, 66, 169–182

Oct 24, Media Bias

Accountability heavily relies on voter information about politicians, information that to a large extent is provided by the media. Is there ideological or partisan media bias? Many would agree albeit the question of whether the bias is conservative or liberal is object of considerable debate. What about competition in media markets? Does it provide more information and thus reduce media slant, or does it result in market segregation and increase bias?

- * Gentzkow, M. & Shapiro, J. (2006). Media bias and reputation. *Journal of Political Economy*, 114(2), 280–316

- * Duggan, J. & Martinelli, C. (2011). A Spatial Theory of Media Slant and Voter Choice. *Review of Economic Studies*, 78(2), 640–666

Mullainathan, S. & Shleifer, A. (2005). The market for news. *American Economic Review*, 95(4), 1031–1053

Strömberg, D. (2015). Media and politics. *Annual Review of Economics*, 7, 173–205

Puglisi, R. & Snyder, J. M. (2015). Empirical studies of media bias. *Handbook of Media Economics*, 1, 647 – 667. *Handbook of Media Economics*

Empirical

Snyder, J. M. J. & Stromberg, D. (2010). Press coverage and political accountability. *Journal of Political Economy*, 118(2), 355–408

Chiang, C.-F. & Knight, B. (2011). Media bias and influence: Evidence from newspaper endorsements. *The Review of Economic Studies*, 78(3), 795–820

Nov 07, Structural Estimation

* Ellickson, P. B. & Misra, S. (2011). Estimating discrete games. *University of Rochester, Working Paper*

* Gentzkow, M. & Shapiro, J. (2010). What drives media slant? Evidence from U.S. daily newspapers. *Econometrica*, 78, 35–71

Historic

Signorino, C. S. (2003). Structure and uncertainty in discrete choice models. *Political Analysis*, 11(4), 316–344

McKelvey, R. D. & Palfrey, T. R. (1995). Quantal response equilibria for normal form games. *Games and Economic Behavior*, 10, 638

Clinton, J., Jackman, S., & Rivers, D. (2004). The statistical analysis of roll call data. *American Political Science Review*, 98(2), 355–370

Nov 14, Networks

* Patty, J. W. & Penn, E. M. (2014). Sequential decision making and information aggregation in small networks. *Political Science Research and Methods*, 2(2), 243–271

Galeotti, A., Ghiglino, C., & Squintani, F. (2013). Strategic information transmission networks. *Journal of Economic Theory*, 148(5), 1751 – 1769

Nov 21, Markov Perfect Equilibrium OR Information Aggregation in Committees (TBA)

Markov Perfect Equilibrium

* Fudenberg, D. & Tirole, J. (2004). *Game theory*. Cambridge, Mass.: MIT Press

* Acemoglu, D. & Robinson, J. A. (2000). Why did the west extend the franchise? growth, inequality and democracy in historical perspective. *Quarterly Journal of Economics*, 115, 1167–1199

Information Aggregation in Committees

Austen-Smith, D. (1990). Information Transmission in Debate. *American Journal of Political Science*, 34(1), 124–152

Austen-Smith, D. & Banks, J. S. (1996). Information Aggregation, Rationality, and the Condorcet Jury Theorem. *The American Political Science Review*, 90(1), 34–45

Austen-Smith, D. (2002). Costly signaling and cheap talk in models of political influence. *European Journal of Political Economy*, 18(2), 263–280

Austen-Smith, D. & Feddersen, T. J. (2006). Deliberation, Preference Uncertainty, and Voting Rules. *The American Political Science Review*, 100(2), 209–217

Feddersen, T. & Pesendorfer, W. (1998). Convicting the Innocent: The Inferiority of Unanimous Jury Verdicts under Strategic Voting. *The American Political Science Review*, 92(1), 23–35

Nov 28, Modeling Workshop I (starts earlier)

Dec 5, Modeling Workshop II (starts earlier)