POLS 8030 Dr. Keith Dougherty
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Spatial Voting Theory

This course provides a rigorous introduction to spatial voting theory and its application to studies of legislative process, judicial politics, parliamentary procedure, and political parties. Topics include the median voter theorem, properties of the majority preference relationship, multidimensional voting, and a brief introduction to the empirical estimation of ideal points. The emphasis of the course is on theory – i.e. the logic behind spatial voting games and the conclusions that follow – not on the empirics. Think of the course as a game theory course specifically applied to spatial voting models, with a few days on empirical applications and estimation of ideal points. Although we will use examples and applications from political science and international affairs, the emphasis of this course is on developing *methodological skills* rather than substantive knowledge. No prior knowledge of game theory or spatial voting models is needed. However, I will assume that students have sufficient aptitude for abstract reasoning and enough algebra to move at a fairly quick pace. I also assume that you have a basic knowledge of R, which we will use to estimate ideal points from voting data and make neat graphs. My goal is to get your theoretical training up to the level of your excellent statistical training. Specifically, the course should enable you to:
  • Think logically and rigorously.
  • Construct and analyze simple spatial voting games for your own research.
  • Gain familiarity with several well-known theorems and papers in spatial voting theory.
  • Provide a push-button approach to the empirical estimmtion of ideal points.

The only way to learn mathematics is through practice. **Most of your learning in this course will occur when you are attempting to solve problems on your own.** Solving problems will involve more than simply replicating the examples in class or in the textbooks, which can be frustrating—just like real research. But once you have struggled with and worked out the solutions yourself, your analytical skills will greatly improve. **I highly recommend that you partner with at least one other student in the class and pick one or two problems a week, from the text, that you and your partner will work through. You can also work together on homeworks and compare answers to see if you are on track.** Do those side problems on the weeks you do not have homeworks.

Grading

Your grade consists of seven homework assignments, which will help you practice the analytical techniques introduced in class, help you use R to estimate ideal points, and encourage you to apply our models to your own research. Each is worth roughly 15% of your overall grade. You must attempt to work through *as much of the homeworks as possible on your own*, and then work

with other students only when you are stuck or want to check your answers. Furthermore, you need to write up your own answers, using your own words and explanations. If you turn in the exact same answer as another student, I will consider it academic dishonesty. Keep in mind that every answer should be neat with an explanation that shows how you derived the solution. You will probably have to re-write your homeworks before they are turned in.

In Class Experiments

To give you some relief, I hope to have a number of in-class "experiments" that should allow you to rack-up extra credit points depending on how you play. Some of the experiments require you to gamble points on a homework assignment. You don't have to play and I will show you how to opt out of each individual game. In class experiments help you see the problem from a first hand perspective and allow you develop more sophisticated criticisms of the theories. They are also a lot of fun. There are no make-ups for in class experiments, so please try to attend regularly.

	Date	Percent of Grade
HW 1 (Median Voter Theorem)	Jan 25	14%
HW 2 (Nash equlibrium)	Feb 1	14%
HW 3 (subgame perfection)	Feb 22	14%
HW 4 (estimating ideal points)	Mar 15	14%
HW 5 (Bayesian subgame perfect equilibrium)	Mar 29	14%
HW 6 (applying spatial models to your research)	Apr 12	16%
HW 7 (multidimensional voting)	Apr 26	14%

Academic Honesty

All academic work must meet the standards contained in "A Culture of Honesty." Students are responsible for informing themselves about these standards before performing academic work. The penalties for academic dishonesty are severe and ignorance is not an acceptable defense. Also note that the course syllabus is a general plan for the course and that deviations announced to the class by the instructor may be necessary.

Make-ups

Homework assignments require a fair amount of analysis time. Please plan ahead to avoid turning them in late. **Late assignments will be lowered one letter grade for every *working* day they are late**. If an assignment is late, it would be a good idea to email it to me or stick it under my office door (Baldwin 408) as soon as possible to avoid any unnecessary late penalties.

Texts and Other Readings

Two textbooks are *required* for the course:
> • **Martin Osborne. 2004.** *An Introduction to Game Theory.* **Oxford University Press.** – an introduction to all types of game theory written by the master.

> • **Keith Poole. 2005.** *Spatial Models of Parliamentary Voting* **(***SMPV***). Cambridge University Press** – a great book on ideal point estimation which is difficult, but covers the bases.

Two textbooks are *recommended* for the course. The first is highly recommended:
> • Joel Watson. 2013. *Strategy: An Introduction to Game Theory*. W.W Norton – a simpler, more friendly way to learn game theory than Osborne. **Highly recommended**.

Additional chapters and articles will be in the dropbox set up for the course. Those are marked with **DB** below. I will send you directions on how to sign up for dropbox to your uga email address shortly after the class begins. It's free. If any of the electronic readings require a password, it will be "dougherty", all lower case. If you want to study a game theoretic concept in greater detail, you might also try Roger Myerson. 1991. *Game Theory: Analysis of Conflict*. Harvard University Press – on course reserve.

Schedule of Topics and Readings

Jan 11   **Introduction & Value of Logic**
          *Introduction to Propositional Logic (watch a couple in the series).

Jan 18   **Theory: Median Voter Theorem & The Core**
          *Hinich and Munger, Analytical Politics, Chapter 2, "The Spatial Model of Downs and Black," **DB**.
          *Osborne, Chapter 8 (sections 1, 2, & 6).

Jan 25   **Theory: Nash Equilibria**
          *Osborne, Chapter 1 (sections 2-3), Chapter 2 (through 2.9.3), and Chapter 3 (section 3).

          Recommended: Watson, *Strategy: An Introduction to Game Theory*, Chapter 3 and Chapter 9 – highly recommended as an easier start.

Feb 1   **Application: Comparative Politics and Supermajority Rules**
          *Adams and Merrill. 2006. "Why Small, Centrist Third Parties Motivate Policy Divergence by Major Parties." *APSR* 100(3):403-17, **DB**.
          *Supermajority Rules (a note from the Harvard web site), **DB**.

Feb 8   **Theory: Subgame Perfect Equilibria**
*Osborne, Chapter 5, Chapter 6 (sections 1-3), Chapter 7 (sections 1-4)

Recommended: Watson, *Strategy: An Introduction to Game Theory*, Chapter 2, Chapter 14, and Chapter 15 – highly recommended as an easier start.

Feb 15   **Application: Pivotal Politics and Legislatures**
*Krehbiel. 1998. *Pivotal Politics*, Chapter 2, "A Theory," and Chapter 3, "Gridlock," **DB**.
*Gehlbach, Scott. 2013. *Formal Models of Domestic Politics*, Ch 4, "Veto Players," **DB**.
*Choi and Rothenberg. 2003, "When Pivotal Politics Meets Partisan Politics," **DB**.

Feb 22   **Estimation: One Dimension (part 1)**
*Poole and Rosenthal, 1997. *Congress: A Political-Economic Theory of Roll Call Voting*, Chapter 2, **DB**.
*Poole. 2005. *SMPV*, Chapter 2 (pp. 18-30 only) and Chapter 3 (pp. 46-60 only).

Recommended: Poole, Keith. 2000. "Non-Parametric Unfolding of Binary Choice Data." *Political Analysis* 8: 211-237, **DB** – a careful development of optimal classification (slightly difficult).

Mar 1   **Estimation: One Dimension (part 2)**
*Poole. 2005. *SMPV*. chapter 5 (pp. 141-155 only) and Chapter 6 (pp. 162-172 only).
*Clinton, Jackman, and Rivers. 2004. "The Statistical Analysis of Roll Call Data," *APSR*, 98(2): 355-370, **DB**.

Mar 15   **Application: The Supreme Court**
*Bonneau et al. 2007. "Agenda Control, the Median Justice, and the Majority Opinion on the U.S. Supreme Court," *AJPS*, 51(4): 890-905.
*Carruba et al. 2012. "Who Controls the Content of Supreme Court Decisions?" *AJPS*, 56(2):400-12.
*Clark and Lauderdale. 2010. "Locating Supreme Court Opinions in Doctrine Space," *AJPS*, 54(4): 871-90.

Mar 22   **Theory: Bayesian Sub-Game Perfect Equilibrium**
*Osborne, chapter 10 (sections 1-6 & 9).

Recommended: Watson, *Strategy: An Introduction to Game Theory*, Chapter 26, Chapter 28, and Chapter 29 – highly recommended as an easier start.

Mar 29   **Application: Committees**
            *Gilligan and Krehbiel, 1987, "Decisionmaking and Standing Committees,"*JLEO*,
                3(2): 287-335, **DB**.
            note: part of the day will carry over from the previous week.

Apr 5   **Theory: Multidimensional Voting and the Core**
            *Hinich and Munger, *Analytical Politics*, Chapter 3, "Two Dimensions: Elusive
                Equilbrium," **DB**.

Apr 12   **Theory: SPE in Multidimensional Voting, the Uncovered Set, and the Banks Set**
            *Dougherty and Edward. 2012. "Voting for Pareto Optimality," *Public Choice*, 151:
                655-78, **DB**.
            *Shepsle and Weingast. 1984. "Uncovered Sets and Sophisticated Voting Outcomes
                with Implications for Agenda Institutions," *AJPS*, 28(1): 49-74, **DB**.
            *Feld et al. 2013. "In Quest of the Banks Set in Spatial Voting Games," *SCW*, 41:43-
                71, **DB**.
            *Bianco et al. 2008. "The Constrained Instability of Majority Rule: Experiments on
                the Robustness of the Uncovered Set," *Political Analysis*, 16: 115-137, **DB**.

Apr 19   **Estimation: Multiple Dimensions**
            *Poole. 2005. *SMPV*, chapter 2 (pp. 30-41 only), chapter 3 (pp. 60-85 only), and
                chapter 4.

Apr 26   **Application: The Constitutional Convention and Immigration Policy**
            *Dougherty. 2015. "Slavery and the Constitution: Why the Lower South Succeeded
                at the Constitutional Convention"(mimeo), **DB**.
            *Jeong et al. 2011 "Cracks in the Opposition: Partisan Realignment in the U.S.
                Senate Negotiations over Immigration Policy," *AJPS*, 55(3): 511-525, **DB**.

            Recommended: Kam et al., "Ministerial Selection and Intra-Party Organization in the
                Contemporary British Parliament." *APSR* 104(2):289-306, **DB** – applies UC
                set to selection of British ministers.