POLITICAL SCIENCE 5071: THEORETICAL AND EMPIRICAL MODELS

Washington University
Department of Political Science
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Monday 8-9:50AM
TBA

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The topic of this course is, broadly speaking, the relationship between theoretical and empirical models. We will explore, through reading applied theory papers, how theoretical models are used to explain measurements made by empirical research. The course is best suited for second-or-third-year PhD students engaged in either empirical or theoretical research.

The course will also be project-based. The expectation is that you enter the course with a project in mind (perhaps some ongoing research). This might be an empirical paper for which you want to work through your theory in more detail, it may be a formal model for which you want to work on drawing out more empirical implications, or anything in between.

GRADES AND REQUIREMENTS

Students must fulfill two graded assignments:

1. In-class presentation (20%): Each student must present to the class on one reading with a dagger (†) next to it in the course schedule below. Presentations must be given on the day of that assigned reading. Each presentation will walk through the theoretical model in modest technical detail and discuss the substantive contribution of the article (especially concerning its relationship to empirical findings). Students will sign up for articles on the first day of class.

2. Course project (80%): Each student will complete work on a research project over the course of the semester. The parameters of the assignment are deliberately flexible because the goal if for students to work on a research project that advances their own research agendas. The project may (and, if possible, probably should) build on an existing paper, which may be theoretical or empirical. The work completed on the project will generally be something less than a full paper but which represents significant progress toward a full paper or significantly improves and existing paper. The course project will be evaluated at three different time points:

   (a) Project proposal (20% of final grade, 25% of course project grade). Students will write up a short proposal explaining what they intend to do for the course project. If the project will build on an existing paper then students may send the instructor a copy of the paper along with the proposal. It is generally expected that the project proposal will

reflect a face-to-face conversation with the instructor prior to the due date in which the general parameters of the project are discussed and agreed upon.

(b) Progress report (20% of final grade, 25% of course project grade). Midway through the semester, students will write a brief report about their progress toward completion of the final project. The content of the progress report may vary, though the instructor will clarify expectations in the written comments for the project proposal, but the grade will reflect how well the student is following the plan laid out in the proposal.

(c) Final report (40% of final grade, 50% of course project grade). Simply put, the final report should reflect the completion of the work promised in the project proposal. If the proposal adds to an existing paper the instructor is also willing to read the paper alongside a brief memo on what work was completed.

Since the parameters of the course project are deliberately broad, a few examples of possible project types are listed below:

Adding to a formal theoretic paper. The student has already completed significant work on a formal theory project[1] and proposes to build out a section on empirical implications that carefully engages with the relevant empirical literature. This may end up motivating new formal results but also may not, depending on the paper.

Adding to an empirical paper. The student has already completed significant work on an empirical paper[2] and proposes to use the existing theoretical literature to expand on the interpretation of results. This may end up motivating new theoretical results (which may or may not actually be solved in the course of completing the court project) but also may not, depending on how well the existing literature already speaks to the applications in the empirical paper.

Writing a proposal for empirical research. The student has decided on a research question for an empirical project but has not completed significant work on a paper. the student proposes to write a theoretically-informed research design and research proposal, which may turn into a prospectus or grant proposal somewhere down the line.

Writing a formal model. Under some circumstances, students may work on an entirely new formal theoretical model for a course project, though I do not expect these circumstances to be typical. The idea should be well worked out on the first day and the research question would need to be clear from the start.

Completing a theoretically-informed estimation. Students may wish to work on a structural model for the course project, which I will allow under some circumstances. The circumstances would include: data are already collected, and likely some reduced-form analyses are already done, and the theoretical model is already well-established (that is, the student

[1] "Significant work" here means that one or two main results are established, even if the paper is not close to being complete.

[2] "Significant work" here means that data collection is done and the main results are known to some degree of certainty, even if the paper is not close to being complete.

is not proposing to write a new formal model and then estimate it, which is infeasible in a semester). I recommend against this option for a course project unless there was a planned project already underway.

COURSE POLICIES

- Attendance Policy. Students must attend the course.
- Late assignments. Late assignments may be accepted with a 10% deduction.
- Accommodations due to disability. If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours.

REQUIRED BOOK

The one required book for this course is *Theory and Credbility* by Scott Ashworth, Christopher Berry, and Ethan Bueno de Mesquita (henceforth T&C). The rest of the readings will be available online.

COURSE SCHEDULE

08/29 Introduction: Laying out a conceptual framework for thinking about the themes of this class.
Reading: T&C Chapters 1-3

09/12 Theoretical models: Why do we do them? How should we evaluate them?
Reading: T&C Chapter 4

09/19 Reinterpreting: Suggesting alternative explanations for empirical findings
Reading:

- T&C Chapter 6
- Ethan Bueno de Mesquita, 2005. "The Quality of Terror." *American Journal of Political Science*. 49(3). 515-530. †

09/26 Elaborating: Drawing out additional implications of a theoretical mechanism
Reading:

- T&C Chapter 7
- Sanford Gordon, 2007. "Assessing Partisan Bias in Federal Public Corruption Prosecutions." *American Political Science Review*. 103(4). 534-554. †

10/03 Distinguishing: Finding differing implications of competing theories
Reading:

- T&C Chapter 8
- Claudio Ferraz and Frederico Finan. 2011. "Electoral Accountability and Corruption: Evidence from the Audits of Local Governments." *American Economic Review*. 101(4). 1274-1311. †

10/17 Disentangling: Distinguishing different theoretical mechanisms from one another
Reading:

- T&C Chapter 9
- James Alt, Ethan Bueno de Mequita, and Shanna Rose. 2011. "Disentangling Accountability and Competence in Elections: Evidence from US Term Limits." *Journal of Politics*. 73(1): 171-186. †

10/24 Modeling the research design: Using theory to design your study
Reading:

- T&C Chapter 10
- Andrew Eggers, 2017. "Quality-Based Explanations of Incumbency Effects." *Journal of Politics*. 79(4): 1315-1328. †

10/31 Defining counterfactual estimands
Reading: Tara Slough, 2022. "Phantom Counterfactuals." *American Journal of Political Science*. https://t.co/ECbOTLuqJ5 †

11/07 Synthesis: Accumulating knowledge by combining information from several studies
Reading: Tara Slough, 2022. "Bureaucratic Quality and Electoral Accountability." *Working Paper*. http://taraslough.com/assets/pdf/bq_acc.pdf †

11/14 External validity: Using theory to understand the extent to which findings may or may not generalize
Reading: Anna Wilke and Macartan Humphries. 2020."Field Experiments, Theory, and External Validity." In: Luigi Curini, Robert Franzese (eds). *The SAGE Handbook of Research Methods in Political Science and International Relations,* Volume 2: 1007 - 1035, 2020.

11/21 Structural modeling introduction: What is it? Why is it?
Reading: Peter Reiss and Frank Wolak, 2007. "Chapter 64: Structural Econometric Modeling: Rationales and Examples from Industrial Organization" in *Handbook of Econometrics*, ed. Heckman and Leamer, Volume 6, Part A.

11/28 Learning preferences: An example using structural modeling to learn about political behavior
Reading: Stefano Dellavigna, John A. List, Ulrike Malmendier, Gautam Rao, "Voting to Tell Others," *The Review of Economic Studies*, Volume 84, Issue 1, January 2017, Pages 143-181. †

12/05 Policy counterfactuals: An example of disentangling using a structural model and constructing counterfacuals
Reading: Karam Kang and Bernardo Silveira. 2021. "Understanding Disparities in Punishment: Regulator Preferences and Expertise." *Journal of Political Economy*. 129 (10): 2947-2992. †

12/12 Learning about institutions: Learning about the effect of a particular institutional arrangement by modeling it
Reading: Gabriel Lopez-Monteczuma and Ben Johnson. 2022. "Social Learning Behind Closed Doors: Evidence from Sequential Voting in the United States Supreme Court." *Working Paper*. https://www.dropbox.com/s/6uetb1ijd4sggo4/scotus_seq_3.pdf?dl=0. †

12/19 Learning from bargaining outcomes: An application to bargaining
Reading: Bernardo Silveira. 2017. "Bargaining with Asymmetric Information: An Empirical Study of Plea Negotiations" *Econometrica*. 85(2), 419-452. †