Experimenta1 Methods in Political Science (PSCI 370.02)

Course Syllabus

Spring 2015

Instructor: Efrén O. Pérez
Class Meetings: Thursdays, 1:10-3:40pm
Classroom: Commons 349
Instructor’s office: Commons 345
Instructor’s email: efren.o.perez@vanderbilt.edu
Office hours: Tuesdays, 11am to 1pm (or by appointment)

COURSE OVERVIEW

This course aims to introduce political science Ph.D. students to experimental methods. As such, you will learn about the promise and limitations of this methodology. In terms of promise, you can expect to develop a deeper appreciation for the ability of experiments to address causality and its mechanisms, provided a strong theoretical foundation. In terms of limitations, you can expect to learn about what makes an experiment ill-conceived, ill-designed, and ill-analyzed, plus the type of questions experiments are least suited to answer. My objective, then, is to impart to you a sharper sense for designing and analyzing experiments, with an emphasis on when this methodological approach makes the most sense—and, just as importantly, when it does not.

I intend to run this course as a hands-on practicum as much as possible. This means I expect you to learn how to design experimental research from theoretical scratch; to “pick up the pieces” when things inevitably go wrong or are unanticipated; and, to communicate to experimentalists and non-experimentalists about your study’s design and results. My hope is that you will learn that experimental research is a lot harder to do than it looks, but that the payoffs are enormous in terms of corroborating causal claims, reproducing results, and accumulating knowledge about a phenomenon. Finally, I expect each student to use the seminar meetings, homework, and opportunities to talk with invited speakers to develop and enrich their own research agendas.

COURSE REQUIREMENTS

1) Eleven (11) homework assignments 40%
2) Project proposal and seminar presentation 10%
3) Final presentation 10%
4) Final project 40%

COURSE TOPICS

Week 1: Logic of Experimentation
Week 2: Ethics of Research
Week 3: Matching Theory With Design
Week 4: Conceptualization and Measurement
Week 5: Project Proposal Discussion
Week 6: Field Experiments (Professor Melissa Michelson Visits)
Week 7: Implicit Cognition
Week 8: Laboratory Experiments (Professor Cheryl Boudreau visits)
Week 9: Survey Experiments
Week 10: Natural, or Quasi, Experiments (Professor Dan Hopkins visits)
Week 11: Physiological and Biological Measures in Experiments (Professor Matt Hibbing visits)
Week 12: Analysis of Experimental Data
Week 13: Project Presentations

HOMEWORK ASSIGNMENTS

In addition to assigned readings, there are eleven (11) homework assignments that you will be asked to complete. I will grade five (5) of these on a pass/fail basis (i.e., HW 1, 5, 7, 9, and 10). The others I will grade on a 10-point scale. All assignments are due at the start of class, unless otherwise noted.

Homework 1: Due January 15

- Complete the Vanderbilt Collaborative IRB course and submit a print-out of the final certification page. Go to [http://www.mc.vanderbilt.edu/irb/training/citi_instructions.php](http://www.mc.vanderbilt.edu/irb/training/citi_instructions.php)

Homework 2: Due January 22

- Read ten (10) experimental articles in political science and submit a list of them. Classify the studies using the designs listed in Campbell and Stanley (1963). Pick five (5) of the articles and a) identify the theory and assess how well it is tested using an experimental design; b) evaluate the choice of the design, ensuring that you find at least two different types of design in your content analysis; and, c) propose an alternative design that could also be used to test the same theory, and discuss the improvements and drawbacks of this alternative.

Submit this as a memo, not an essay. If you can combine your observations from several articles into a more general discussion, that’s great. If you prefer to discuss each article separately, that is fine, too.

Homework 3: Due February 12

- Project proposal due. See description below.

Homework 4: Due February 19

- Create an experiment by setting up a trial account through Qualtrics. Write a brief paragraph discussing the nature of the experiment and email me a link to the survey.
Homework 5: Due February 19

- Come prepared with at least three questions to ask Professor Melissa Michelson. Please tailor your questions to the readings on field experiments and/or to the expertise of Professor Michelson. Email these to me by 9am.

Homework 6: Due February 26

- Based on the ten (10) studies you read earlier in the semester (see homework 2), discuss the type of measures (dependent and independent) that are used. Pick three (3) of the articles. Discuss a) possible reactivity to the measures in the studies you read, corroborating this discussion with references to the articles and implications for the conclusions you draw; b) propose alternative measures (behavioral, attitudinal, indirect) that could also be used to test the theories; and, c) discuss the pros and cons of these alternative measures.

Submit this as a memo, not an essay. If you can combine your observations from several articles into a more general discussion, that’s great. If you prefer to discuss each article separately, that is fine, too.

Homework 7 and 8: Due March 12

- Come prepared with at least three questions to ask Professor Cheryl Boudreau. Please tailor your questions to the readings on lab experiments and/or to the expertise of Professor Boudreau. Email these to me by 9am.

- Set up an Amazon.com Mechanical Turk account. Create a HIT for your study. Finalize your Qualtrics script and email me a link to the study. Email me your MTurk information so I can fund your study.

Homework 9: Due March 26

- Come prepared with at least three questions to ask Professor Dan Hopkins. Please tailor your questions to the readings on quasi-experiments and/or to the expertise of Professor Hopkins. Email these to me by 9am.

Homework 10: Due April 2

- Come prepared with at least three questions to ask Professor Matt Hibbing. Please tailor your questions to the readings on physiological/biological measures and experiments and/or to the expertise of Professor Hibbing. Email these to me by 9am.

Homework 11: Due April 9

- Look through the ten (10) articles that you have selected (see homework 2). What key features of the research protocol are reported? What statistical methods are used to analyze the data? What methods (graphical, tabular, etc.) are used to interpret the data analysis? Choose one article and evaluate the effectiveness of the data analysis in testing the theory.
PROPOSAL, PRESENTATION, AND FINAL PROJECT

The main goal of this course is to prepare you to design and run your own experiment. The majority of your course grade is thus based on a final project that entails the design, implementation, and analysis of your experimental study. My end of the bargain is this: in addition to leading the class and teaching you (formally and informally) what I know about experimental designs, I will provide each student with up to $500 to run their own study on Amazon’s Mturk.

Your end of the bargain is this: in addition to engaging the literature and speakers that you encounter, you will propose an experimental research design to test a specific research question. Besides convincing me about the theoretical merit of this idea, you will also be expected to justify why you are testing it via the specific experiment you propose, including the number of experimental cells, statistical power, etc. Make sure that you are certified with Vanderbilt’s Institutional Review Board (IRB). Also, note that you will be responsible for designing and working with Amazon’s Mturk to implement your study (when you are ready, I will pay for the subjects so that you don’t incur any financial cost whatsoever).

Generally speaking, you can anticipate completing the following three tasks:

1. Project proposal. Due February 12.

A one–page (single-spaced) project proposal that mimics a conference paper proposal. Your document should briefly summarize existing literature in which your research question is rooted; clearly and succinctly state your hypotheses; and compactly and persuasively discuss your research design (e.g., treatments, anticipated effect sizes and statistical power). The document should also contain the list of references that you cite. Think of this part of your research project as salesmanship. What you are trying to do is “sell” your project by concisely showcasing its theoretical importance, gaps in the literature, and execution of research.

I would start by choosing a topic that engages your interest. Take the time to survey the literature broadly, which means you should read at least 15-20 articles so that you have good sense of what is out there and what theoretical and/or empirical blind spots you can address. From doing all of this reading, you should be able to draft a one-page statement that includes: 1) an introductory paragraph identifying the topic you’re interested in examining and its implications for politics; 2) one paragraph summarizing what some of the existing literature in political science has to say about that topic; and 3) one to two paragraphs that identify what gap you’ll fill in the literature with discussion of hypotheses and some brief details about the research design. On a separate page, list the scholarly references that you cite in your proposal.

Come to our class meeting prepared to briefly present your project proposal. This 10-minute presentation should 1) state the research question; 2) outline the theoretical framework; 3) situate the work within existing literature; and 4) sketch out a proposed experimental design. If you want to present the experimental stimuli, feel free to do so. Be prepared to receive feedback from the class that you can integrate into your study.
2. Project Presentation. April 16

During the last class meeting, students will give in-class presentations. These 10-15 minute presentations should state the research question, outline the theoretical framework, situate the work within existing literature, describe the experimental design, present your results, and identify the shortcomings and contributions of your experiment. Be prepared to integrate feedback into your final paper.

3. Final Project. Due April 27

A 15-page (double-spaced) paper that reflects your presentation, plus reports and discusses the results of your actual experiment, taking care to tie the results back to your theoretical framework.

MATERIALS

There are no assigned books. I will make the readings available to you via email the week before we discuss a specific topic.

CRITIQUING EXPERIMENTS

Throughout this course we will spend considerable time evaluating the scientific integrity and theoretical significance of a number of political psychology experiments. Each week we will discuss the strengths and weaknesses of one or more studies. Below are listed some questions you should ask of every study, including your own, which will help guide our discussions. As the course moves along, you should think of adding your own questions to this list.

1. What is the key question or research puzzle the research addresses, and is the question or puzzle sufficiently important and intriguing?
2. Are the theoretical constructs clearly demarcated and logically connected to the puzzle?
3. Is there a truly testable hypothesis that follows directly from the puzzle?
4. Are the empirical variables properly operationalized and measured?
5. Is the unit of analysis appropriate to the puzzle?
6. Does the research design incorporate the relevant variables without becoming needlessly complex? Are potentially important interactions accounted for?
7. Is the experimental manipulation sufficiently strong, without engendering response biases?
8. How well does the experimenter isolate the theoretical independent variable from potential confounds?
9. Is a manipulation check appropriate? What about the measurement of process variables?
10. How well do the design and methodology minimize potential threats to internal validity?
11. How well does the researcher address, or at least answer, external validity concerns?
12. Above all, are the research design and methodology suitable for the theoretical question?
TOPICS AND ASSIGNED READINGS

Week 0 (1/8): Introduction and Expectations

There are no assigned readings for today. During today’s class, we will review the syllabus, introduce ourselves, and discuss our expectations for this course.

Week 1 (1/15): The Logic of Experimentation

*Homework 1 due


Read one article of your choice that contains an interesting experimental design and come to class ready to discuss it.

Week 2 (1/22): Ethics of Research

*Homework 2 due


---

1 These are subject to change, particularly if our visiting speakers provide me with suggested readings.


Week 3 (1/29): Matching Theory With Design


- If needed, a more accessible discussion of the points covered in Campbell and Stanley can be found in:


**Week 4 (2/5): Conceptualization and Measurement**


**Week 5 (2/12): Project Proposal Discussion**

*Homework 3 due*

In-class discussion of proposals. Schedule a one-on-one project consultation with me in days following this class.

Software Tutorial (led by Steve Utych and Allison Archer): DPTE, Inquisit, Mturk, Qualtrics 5 to 7pm in Commons 349 (with dinner included)

**Week 6 (2/19): Field Experiments**

**Visiting Speaker: Melissa Michelson (Menlo College)**

*Homework 4 due

*Homework 5 due


- Revisit these two brief news stories/blog posts:

**Week 7 (2/26): Implicit Cognition**

*Homework 6 due*


**Week 8 (3/12): Laboratory Experiments**

**Visiting Speaker: Cheryl Boudreau (UC Davis)**

*Homework 7 due

*Homework 8 due


Week 9 (3/19): Survey Experiments


Week 10 (3/26): Natural or Quasi-Experiments
Visiting Speaker: Dan Hopkins (Georgetown University)

*Homework 9 due*


**Week 11 (4/2) Physiological and Biological Measures in Experiments**
**Visiting Speaker: Matt Hibbing (UC Merced)**

*Homework 10 due*


**Week 12 (4/9) Analysis of Experimental Data**

*Homework 11 due*


**Week 13 (4/16) Project Presentations (MPSA) (Last Day of Class)**

**(4/27) Final Paper Due at Noon, In My Office**