

experimental methods

PSCI 7165.002
FALL 2019
MONDAYS, 5:00 – 7:30 P.M.
KETCHUM 1B31

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OFFICE HOURS: MONDAYS, 2-4 P.M.

In this course, you will learn how to design, implement, and analyze experiments in political science. The course is loosely organized into three sections. We will start by considering experimental design – discussing the key virtues of experimental research and then how to best achieve strong experiments in practice. The second unit is devoted to the empirical analysis of experimental results. We will cover the analytical tools common to experimental research as well as heterogeneous treatment effects. The third section focuses on varieties of experiments common to political science – including natural experiments, field experiments, and survey experiments. We will consider the characteristics of each, and along the way, address some of the challenges associated with the implementation of experiments, such as attrition, effective randomization, and spillover effects.

The class will be run as a workshop where each student will design and implement an experiment that will be conducted on Amazon's Mechanical Turk. During the first weeks of class, you will design an experiment (related to your own particular substantive interests) and we will use parts of each class session to provide feedback on how to improve that design (against the backdrop of the particular topic we are covering). The second unit on the implementation of experiments will overlap with the implementation of your experiments – as you secure approval from the university's Institutional Review Board and design your experimental modules in Qualtrics. If all goes well, you should hopefully have your experimental data in hand in November to then analyze your results.

readings for the course

Journal articles are accessible through the library's website, while book chapters will be accessible through the course website.

REQUIRED TEXTS:

Morton, Rebecca B., and Kenneth C. Williams. 2010. *Experimental Political Science and the Study of Causality: From Nature to the Lab*. Cambridge: Cambridge University Press.

Mutz, Diana C. 2011. *Population-Based Survey Experiments*. Princeton: Princeton University Press.

RECOMMENDED TEXTS:

Dunning, Thad. 2012. *Natural Experiments in the Social Sciences*. Cambridge: Cambridge University Press.
(also available as an e-book via the library's website)

Gerber, Alan S., and Donald P. Green. 2012. *Field Experiments: Design, Analysis, and Interpretation*. New York: W. W. Norton & Company.

Canvas is your friend

This syllabus, assignments, data sets, and other exciting material can be accessed on the class website on canvas.colorado.edu.

requirements

HOMEWORK AND PARTICIPATION (60% of your final grade)

You are expected to attend and actively engage in class.

Each student will also prepare a ten-minute presentation and two page single-spaced memo over the course of the semester on a topic to be selected in class. Additional guidelines will be detailed in a separate handout.

Most weeks, you will be responsible for a homework assignment designed to help you practice and apply the skills learned in class. Some of these assignments will be written memos, while others will be designed as problem sets. While you are welcome to consult with your classmates on the homework assignments, the final work that you turn in must be your own. Late homework assignments will not be accepted.

RESEARCH PAPER (40% of your final grade)

You will also develop a research paper based on the experiment you develop, design, and implement over the course of the semester. In style, this paper should resemble the journal articles you have read in your classes. The research paper will be due the last week of the class. Additional guidelines will be detailed in a separate handout.

special accommodations

If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs may be addressed. You can contact the Disability Services office for more information at www.colorado.edu/disabilityservices.

some important comments on academic integrity

- Plagiarism and other academic dishonesty will not be tolerated. If you are not familiar with the rules of citing sources in written work or what constitutes plagiarism, you should contact me or refer to the University Honor Code at honorcode.colorado.edu. Academic dishonesty will result in an F in the course and referral to the Honor Court for additional non-academic sanctions.
- All papers are expected to be original work, not previously or simultaneously handed in for credit in another course (unless prior approval of all instructors involved is obtained).

PSCI 7165 course schedule

1. why use experiments?

MONDAY, AUGUST 26

The history of experimental research in political science, the value of experimentation

- Morton, Rebecca B., and Kenneth C. Williams. 2010. *Experimental Political Science and the Study of Causality: From Nature to the Lab*. Cambridge: Cambridge University Press, chapters 1 and 2.

2. causal inference

MONDAY, SEPTEMBER 9

The importance of causality, potential outcomes framework, randomization

- Angrist, Joshua D., and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton: Princeton University Press. Chapter 2.
- Keele, Luke. 2015. "The Statistics of Causal Inference: A View from Political Methodology." *Political Analysis* 23: 313-335.
- *At least one of the following and ideally two or more:*
 - Dunning, Thad. 2012. *Natural Experiments in the Social Sciences*. Cambridge: Cambridge University Press. Chapter 5.
 - Morton, Rebecca B., and Kenneth C. Williams. 2010. *Experimental Political Science and the Study of Causality: From Nature to the Lab*. Cambridge: Cambridge University Press. Chapter 3.
 - Gerber, Alan S., and Donald P. Green. 2012. *Field Experiments: Design, Analysis, and Interpretation*. New York: W. W. Norton & Company. Chapter 2.
 - Holland, Paul W. 1986. "Statistics and Causal Inference." *Journal of the American Statistical Association* 81: 945-960. (Skim the comments and rejoinder that follow.)

3. internal validity

MONDAY, SEPTEMBER 16

Understanding what it means to do valid research, designing treatments and measures

- Shadish, William R., Thomas D. Cook, and Donald T. Campbell. 2002. *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. Boston: Houghton Mifflin. Chapters 2 and 3.
 - *or as an alternative to Shadish, Cook, and Campbell: Morton and Williams, chapter 7.*
- Mutz, Diana C. 2011. *Population-Based Survey Experiments*. Princeton: Princeton University Press. Chapters 2, 3, 4, 5, and 8.

4. conducting experiments

MONDAY, SEPTEMBER 23

More on experimental design, motivating experimental participants, deception, ethics in experimentation

- Morton and Williams, chapters 10-13.

- Dickson, Eric S. 2011. "Economics versus Psychology Experiments: Stylization, Incentives, and Deception." In James N. Druckman, Donald P. Green, James H. Kuklinski, and Arthur Lupia, eds., *Cambridge Handbook of Experimental Political Science* New York: Cambridge University Press.
- Hertwig, Ralph, and Andreas Ortmann. 2008. "Deception in Experiments: Revisiting the Arguments in its Defense." *Ethics & Behavior* 18(1):59–92.
- Clifford, Scott, and Jennifer Jerit. 2015. "Do Attempts to Improve Respondent Attention Increase Social Desirability Bias?" *Public Opinion Quarterly* 79: 790-802.

5. sample selection, generalizability, and external validity

MONDAY, SEPTEMBER 30

Experimental settings, sample size calculations, identifying experimental participants, convenience samples

- *recommended:* Cohen, Jacob. 1992. "A Power Primer." *Psychological Bulletin* 112:155-159.
- Morton and Williams, chapters 8-9.
- Berinsky, Adam J., Gregory A. Huber, and Gabriel S. Lenz. 2012. "Evaluating Online Labor Markets for Experimental Research: Amazon.com's Mechanical Turk." *Political Analysis* 20(3):351-368.
- Barabas, Jason, and Jennifer Jerit. 2010. "Are Survey Experiments Externally Valid?" *American Political Science Review* 104:226-42.
- Mullinix, Kevin J., Thomas J. Leeper, James N. Druckman, and Jeremy Freese. 2015. "The Generalizability of Survey Experiments." *Journal of Experimental Political Science* 2:109-138.
- Druckman, James N., and Cindy D. Kam. 2011. "Students as Experimental Participants: A Defense of the 'Narrow Data Base'." In James Druckman, Donald Green, James Kuklinski, and Arthur Lupia, eds., *Cambridge Handbook of Experimental Political Science* New York: Cambridge University Press.
- *recommended:* Henrich, Joseph, Steven J. Heine, and Ara Norenzayan. 2010. "The Weirdest People in the World?" *Behavioral and Brain Sciences* 33:61-135.

6. replicability

MONDAY, OCTOBER 7

Experimental design choices and replicability. Preregistration of experiments.

- Franco, Annie, Neil Malhotra, and Gabor Simonovits. 2015. "Underreporting in Political Science Survey Experiments: Comparing Questionnaires to Published Results." *Political Analysis* 23:306-312.
- Dunning, Thad. 2016. "Transparency, Replication, and Cumulative Learning: What Experiments Alone Cannot Achieve." *Annual Review of Political Science* 19:541–63.
- Huber, Gregory A., and John S. Lapinski. 2006. "The Race Card Revisited: Assessing Racial Priming in Policy Contests." *American Journal of Political Science* 50(2):421-440.
- Mendelberg, Tali. 2008. "Racial Priming Revived." *Perspectives on Politics* 6:109-123.
- Huber, Gregory A., and John S. Lapinski. 2008. "Testing the Implicit-Explicit Model of Racialized Political Communication." *Perspectives on Politics* 6:125-134.
- Mendelberg, Tali. 2008. "Racial Priming: Issues in Research Design and Interpretation." *Perspectives on Politics* 6:135.

7. workshop week

MONDAY, OCTOBER 14

Class discussion of student experiments

- Everyone's experimental prospectuses.

8. analyzing (and reporting) experimental results

MONDAY, OCTOBER 21

Reporting the results of your experiment, manipulation checks, balance tests

- Mutz, Diana C. 2011. *Population-Based Survey Experiments*. Princeton: Princeton University Press. Chapter 7.
- Gerber, Alan, Kevin Arceneaux, Cheryl Boudreau, Conor Dowling, Sunshine Hillygus, Thomas Palfrey, Daniel R. Biggers, and David J. Hendry. 2014. "Reporting Guidelines for Experimental Research: A Report from the Experimental Research Section Standards Committee." *Journal of Experimental Political Science* 1:81-98.
- Diana C. Mutz and Robin Pemantle. 2015. "Standards for Experimental Research: Encouraging a Better Understanding of Experimental Methods." *Journal of Experimental Political Science* 2:192-215.
- Kane, John V., and Jason Barabas. 2019. "No Harm in Checking: Using Factual Manipulation Checks to Assess Attentiveness in Experiments." *American Journal of Political Science* 63:234-249.
- *recommended*: Aronow, Peter M., Jonathon Baron, and Lauren Pinson. Forthcoming. "A Note on Dropping Experimental Subjects Who Fail a Manipulation Check." *Political Analysis* 1-18.
- *recommended*: Miratrix, Luke W., Jasjeet S. Sekhon, Alexander G. Theodoridis, and Luis F. Campos. 2018. "Worth Weighting? How to Think About and Use Weights in Survey Experiments." *Political Analysis* 26: 275–291.

9. analysis of variance

MONDAY, OCTOBER 28

Parametric tests and ANOVA, how to best present the results of your experiment

- Field, Andy, and Graham Hole. 2003. *How to Design and Report Experiments*. Thousand Oaks, CA: Sage Publications. Chapter 6.

10. nonparametric models and randomization tests

MONDAY, NOVEMBER 4

Randomization tests and nonparametric tools

- Field, Andy, and Graham Hole. 2003. *How to Design and Report Experiments*. Thousand Oaks, CA: Sage Publications. Chapter 7.
- Keele, Luke, Corrine McConaughy, and Ismail White. 2012. "Strengthening the Experimenter's Toolbox: Statistical Estimation of Internal Validity." *American Journal of Political Science* 56:484-499.

11. heterogeneous treatment effects

MONDAY, NOVEMBER 11

Heterogeneous treatment effects, conditional experimental effects

- Green, Donald P., and Alan S. Gerber. 2002. "The Downstream Benefits of Experimentation." *Political Analysis* 10:394-402.
- Fieldhouse, Edward, David Cutts, Peter John, and Paul Widdop. 2014. "When Context Matters: Assessing Geographical Heterogeneity of Get-Out-The-Vote Treatment Effects Using a Population Based Field Experiment." *Political Behavior* 36:77-97.
- Montgomery, Jacob M., Brendan Nyhan, and Michelle Torres. 2018. "How Conditioning on Posttreatment Variables Can Ruin Your Experiment and What to Do about It." *American Journal of Political Science* 62: 760-775.
- *if time allows*: Imai, Kosuke, and Aaron Strauss. 2011. "Estimation of Heterogeneous Treatment Effects from Randomized Experiments, with Application to the Optimal Planning of the Get-Out-the-Vote Campaign." *Political Analysis* 19:1-19.

12. survey experiments (and spillover effects)

MONDAY, NOVEMBER 18

Survey experiments, list experiments, conjoint analysis, as well as concerns about spillover effects

- Mutz, Diana C. 2011. *Population-Based Survey Experiments*. Princeton: Princeton University Press. Chapter 1.
- Gaines, Brian J., James H. Kuklinski and Paul J. Quirk. 2007. "The Logic of the Survey Experiment Reexamined." *Political Analysis* 15:1-20.
- Hainmueller, Jens, Daniel J. Hopkins, and Teppei Yamamoto. 2014. "Causal Inference in Conjoint Analysis: Understanding Multidimensional Choices via Stated Preference Experiments." *Political Analysis* 22:1-30.
- Rosenfeld, Bryn, Kosuke Imai, and Jacob N. Shapiro. 2016. "An Empirical Validation Study of Popular Survey Methodologies for Sensitive Questions." *American Journal of Political Science* 60: 783-802.
- Sniderman, Paul M. 2018. "Some Advances in the Design of Survey Experiments." *Annual Review of Political Science* 21:259-275.
- *recommended*: Kramon, Eric, and Keith R. Weghorst. 2012. "Measuring Sensitive Attitudes in Developing Countries: Lessons from Implementing the List Experiment." *Experimental Political Scientist* 3(2):14-26.

fall break

MONDAY, NOVEMBER 25

13. natural experiments (and randomization)

MONDAY, DECEMBER 2

Identifying natural experiments, as well as discussion of the consequences of imperfect randomization

- Dunning, Thad. 2012. *Natural Experiments in the Social Sciences*. Cambridge: Cambridge University Press. Chapters 1 and 2.

- Sekhon, Jasjeet S., and Rocio Titiunik. 2012. "When Natural Experiments Are Neither Natural Nor Experiments." *American Political Science Review* 106:35-57.
- Morton, Rebecca B., and Kenneth C. Williams. 2010. *Experimental Political Science and the Study of Causality: From Nature to the Lab*. Cambridge: Cambridge University Press. Chapters 4 and 5.

14. field experiments (and noncompliance)

MONDAY, DECEMBER 9

Why everyone loves field experiments, how to do them, as well as how to deal with noncompliance

- Green, Donald P., and Alan S. Gerber. 2003. "The Underprovision of Experiments in Political Science." *The Annals of the American Academy of Political and Social Science* 589:94-112.
- Grose, Christian R. 2014. "Field Experimental Work on Political Institutions." *Annual Review of Political Science* 17:355-370.
- *as an alternative or complement to the Grose piece:* Loewen, Peter John, Daniel Rubenson, and Leonard Wantchekon. 2010. "Help Me Help You: Conducting Field Experiments with Political Elites." *The Annals of the American Academy of Political and Social Science* 628:165-175.
- Gerber, Alan S., and Donald P. Green. 2000. "The Effects of Canvassing, Telephone Calls, and Direct Mail on Voter Turnout: A Field Experiment." *American Political Science Review* 94(3):653-63.
- Imai, Kosuke. 2005. "Do Get-Out-the-Vote Calls Reduce Turnout? The Importance of Statistical Methods for Field Experiments." *American Political Science Review* 99(2):283-300.
- *if you have time:* List, John A. 2011. "Why Economists Should Conduct Field Experiments and 14 Tips for Pulling One Off." *Journal of Economic Perspectives* 25:3-16.
- *recommended:* Glennerster, Rachel, and Kudzai Takavarasha. 2013. *Running Randomized Evaluations*. Princeton, NJ: Princeton University Press.