

experimental methods

PSCI 7108.002
SPRING 2014
TUESDAYS, 4:10 – 6:40 P.M.
KETCHUM 116

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OFFICE HOURS: WEDNESDAYS, 1 - 3 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 focuses on the varieties of experiments common to political science – including laboratory experiments, 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 third section is devoted to the empirical analysis of experimental results. We will cover the analytical tools common to experimental research and address issues of mediation as well as modeling heterogeneous treatment 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 use parts of each class session giving 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 Colorado'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 April to apply the lessons from the third unit on experimental analysis.

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)

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

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

D2L is your friend

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

requirements

HOMEWORK AND PARTICIPATION (60% of your final grade)

You are expected to attend and actively engage in class.

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 7108 course schedule

1. why use experiments?

Tuesday, January 14

- Morton and Williams, chapters 1 and 2.
- Druckman, James N., Donald P. Green, James H. Kuklinski and Arthur Lupia. 2006. "The Growth and Development of Experimental Research in Political Science." *American Political Science Review* 100(4): 627-635.

2. causal inference

Tuesday, January 21

- Angrist, Joshua D., and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton: Princeton University Press. Chapter 2.
- Thye, Shane R. 2007. "Logical and Philosophical Foundations of Experimental Research in the Social Sciences." In Murray Webster, Jr. and Jane Sell, eds., *Laboratory Experiments in the Social Sciences*. San Diego, CA: Academic Press.
- 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 and Williams, 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 and external validity

Tuesday, January 28

- 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.
- Mutz, Diana C. 2011. *Population-Based Survey Experiments*. Princeton: Princeton University Press. Chapter 8.
- *another option instead of Shadish, Cook, and Campbell*: Morton and Williams, chapter 7.

4. recruitment, ethics, & practical considerations

Tuesday, February 4

- Morton and Williams, read chapters 8-10, skim or read chapters 11-13.
- Henrich, Joseph, Steven J. Heine, and Ara Norenzayan. 2010. "The Weirdest People in the World?" *Behavioral and Brain Sciences* 33:61-135.

- Druckman, James N., and Cindy D. Kam. 2011. “Students as Experimental Participants: A Defense of the ‘Narrow Data Base’.” In James N. Druckman, Donald P. Green, James H. Kuklinski, and Arthur Lupia, eds., *Handbook of Experimental Political Science* New York: Cambridge University Press.
- 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.

5. other considerations in experimental design

Tuesday, February 11

- Gerber, Alan S., and Donald P. Green. 2012. *Field Experiments: Design, Analysis, and Interpretation*. New York: W. W. Norton & Company. Chapters 3 and 4.
- Druckman, James N. and Thomas J. Leeper. 2012. “Learning More from Political Communication Experiments: Pretreatment and Its Effects.” *American Journal of Political Science* 56(4):875-896.
- Bowers, Jake. 2011. “Making Effects Manifest in Randomized Experiments.” In James N. Druckman, Donald P. Green, James H. Kuklinski, and Arthur Lupia, eds., *Handbook of Experimental Political Science* New York: Cambridge University Press.

6. laboratory experiments (and replicability)

Tuesday, February 18

- Jerit, Jennifer, Jason Barabas, and Scott Clifford. 2013. “Comparing Contemporaneous Laboratory and Field Experiments on Media Effects.” *Public Opinion Quarterly* 77: 256-282.
- 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. natural experiments (and randomization)

Tuesday, February 25

- 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.
- *if you have time*: Morton and Williams, chapters 4 and 5.

8. field experiments (and noncompliance)

Tuesday, March 4

- 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
- 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 spare 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.

9. survey experiments (and spillover effects)

Tuesday, March 11

- Mutz, Diana C. 2011. *Population-Based Survey Experiments*. Princeton: Princeton University Press. Chapters 1-5.
- Gaines, Brian J., James H. Kuklinski and Paul J. Quirk. 2007. "The Logic of the Survey Experiment Reexamined." *Political Analysis* 15:1-20.
- Barabas, Jason, and Jennifer Jerit. 2010. "Are Survey Experiments Externally Valid?" *American Political Science Review* 104:226-42.

10. analyzing experimental results

Tuesday, March 18

- Zaller, John. 2002. "The Statistical Power of Election Studies to Detect Media Exposure Effects in Political Campaigns." *Electoral Studies* 21:297-329.
- Mutz, Diana C. 2011. *Population-Based Survey Experiments*. Princeton: Princeton University Press. Chapter 7.
- *if you have time*: Mutz, Diana, and Robin Pemantle. 2011. "The Perils of Randomization Checks in the Analysis of Experiments." Working paper.
- Gerber, Alan S., and Donald P. Green. 2012. *Field Experiments: Design, Analysis, and Interpretation*. New York: W. W. Norton & Company. Chapter 12.

SPRING BREAK

Tuesday, March 25

11. analysis of variance

Tuesday, April 1

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

12. nonparametric models and randomization tests

Tuesday, April 8

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

13. heterogeneous treatment effects

Tuesday, April 15

- Green, Donald P., and Alan S. Gerber. 2002. “The Downstream Benefits of Experimentation.” *Political Analysis* 10:394-402.
- Gaines, Brian J., and James H. Kuklinski. 2011. “Experimental Estimation of Heterogeneous Treatment Effects Related to Self-Selection.” *American Journal of Political Science* 55:724-36.
- Fieldhouse, Edward, David Cutts, Peter John, and Paul Widdop. Forthcoming. “When Context Matters: Assessing Geographical Heterogeneity of Get-Out-The-Vote Treatment Effects Using a Population Based Field Experiment.” *Political Behavior*.
- *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.

14. mediation in experiments

Tuesday, April 22

- Bullock, John G., Donald P. Green, and Shang E. Ha. 2010. “Yes, But What’s the Mechanism? (Don’t Expect an Easy Answer).” *Journal of Personality and Social Psychology* 98(4): 550-58.
- Ludwig, Jens, Jeffrey R. Kling, and Sendhil Mullainathan. 2011. “Mechanism Experiments and Policy Evaluations.” *Journal of Economic Perspectives* 25(3): 17-38.
- *if time allows*: Imai, Kosuke, Dustin Tingley, and Teppei Yamamoto. 2013. “Experimental Designs for Identifying Causal Mechanisms.” *Journal of the Royal Statistical Society: Series A (Statistics in Society)* 176: 5–51.

15. presentations of experimental results

Tuesday, April 29