This version: October 31, 2012

Cause and Effect: Research Design in the Social Sciences

PLSC 342a/GLBL 185
Fall 2012
M/W 10:30-11:20
Location: HLH 17 (03)

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Course website: http://classesv2.yale.edu
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Discussion section: TBA (likely Thursdays 5:00-5:50 and 7:00-7:50 PM)

Objectives of the course:

Questions about cause and effect are found everywhere—in the social sciences and in daily life. Did the U.S. economic stimulus of 2008 succeed or fail? Does giving property titles to poor squatters engender socioeconomic development? Why do gamblers in Las Vegas persist in activities that have negative expected value?

Answering such questions is challenging, because attributing effects to causes is deceptively tricky in the social and political world. This course introduces the many methods that social scientists use to try to make inferences about causality and to explain the causal relations they uncover—such as experiments, natural experiments, and various quantitative and qualitative methods, including case studies and fieldwork. Beyond causation, we focus on the broader task of doing research about social and political questions: how are good research questions formed, and what kinds of strategies are most useful for answering them?

The course is divided roughly into three parts: one focused on defining causation and introducing methods for causal attribution; another focused on the strengths and limitations of real-world research designs; and a third focused on practicalities and logistics of doing research. Since causes and effects must be described before their relationship can be measured, we also focus on the related topics of conceptualization and measurement.

Taking this course will benefit you in several ways. It will help you better evaluate the evidence for any causal claim—which is a useful skill, whether you are a future social scientist, lawyer, policy analyst, community organizer, biologist, or investment banker. It will introduce you to the strengths and limitations of different research designs, illustrate how social scientists use those designs to do real research, and teach you skills, including some basic data analysis techniques. Finally, it may provide the basis for further scholarly research during your career at Yale. For instance, some of you may choose to use your research proposals (described below) as the foundation for senior essays.

One note on the course material: I am a scholar of comparative politics and political economy, with a particular interest in developing countries. Many of the examples in lectures and readings will therefore reflect that orientation. However, I do make an attempt to draw readings from different disciplines and areas of social science, including American politics and economics.

Expectations/Requirements:

There are no prerequisites for the course. The course will occasionally use formal mathematical notation, and we will also discuss basic statistical concepts. However, the presentation is self-contained, and nothing beyond high school algebra is assumed.

The requirements include (1) five to six reading responses/exercises; (2) an in-class midterm; and (3) a research proposal/project. Active participation in class and especially in discussion sections is expected.

Reading responses/exercises: The reading responses/exercises will be due in discussion section. These will be assigned during parts I and II of the course only.

In-class midterm exam (November 14). The in-class midterm will cover material from Parts I and II of the course. Any material in the assigned readings or covered in lectures is fair game for the mid-term. Several of the reading responses/exercises will provide examples of the types of questions that will appear on the midterm.

Research proposal: Because this course focuses on research design, writing a research proposal is an especially important part of the course. Your research proposal should reflect careful thinking about a particular substantive topic or problem; the formulation of a sharp research question; an investigation of available data sources and a reading of the secondary literature; and especially careful thinking about how to use the research design tools you learn in this course.

You should write the proposal as though you were applying for funding from a grant agency to conduct the research. So, you should describe in precise terms how you will go about doing your research. What is the research design? Will you conduct field research? Run an experiment? Compile a large-n data set? How and why will you do these things? In other words, you should have done everything you can to set yourself up to do the research—short of actually doing all of it—and you should be able to describe the strengths and limitations of your proposed research. In some cases, you may also actually be able to conduct preliminary research—e.g. by gathering and analyzing some data—but this will depend on the project. (You will set targets and objectives for the proposal in conversation with the teaching fellow and professor, as described below). The key point is to describe how you can use the various tools for causal inference you learn in this course to investigate a substantive topic of interest to you.

You will consult closely with the professor and especially the teaching fellow about the development of your project, and interim drafts (a paragraph stating the question and topic, and interim progress reports) will be due throughout the semester. The final proposal should be about 15-20 double-spaced pages, though the type of project proposed will determine the exact length and content.

Timeline/deadlines for research proposals:
Week of Oct. 1-Oct. 5: Meet with TF and/or professor to discuss research proposal ideas
Thursday Oct. 18: Turn in one-paragraph description of research proposal/topic
Thursday Nov. 8: Turn in expanded two-page description of research proposal, with further detail on research methods
December 12: Final research proposals due

Discussion sections: Discussion sections are an important part of the class, and attendance in section is as important as attendance in lecture. Discussion sections will be geared not just towards discussion of the readings but also towards the practical aspects of conducting research, such as how to obtain and analyze data and other aspects of research. Reading responses/exercises will be due in discussion section.

Class/section participation: Active and prepared participation in class and particularly in the discussion section is critical. I know we live in a wired age, but please do not open your laptops in class. Lecture slides and other notes will be posted on the Classes V2 site for your later reference. During class, you should take any notes with a notepad and pen.

Grade breakdown:

Reading responses/exercises: 20%
Participation in discussion section and class: 10%
In-class midterm: 35%
Research paper/proposal: 35%

Academic dishonesty

Your work on all assignments should be your own; the work of others should be properly cited and/or quoted. Any form of academic dishonesty, including plagiarism, cheating on an examination, or improper collaboration on reading responses, will be reported to the Yale College Executive Committee.

Readings/Logistics:

Required books:

Henry E. Brady and David Collier, eds. 2010. *Rethinking Social Inquiry: Diverse Tools, Shared Standards*. New York: Rowman & Littlefield, 2nd ed. (Make sure you get the 2nd edition!). [REFERRED TO AS "RSI" BELOW]

Thad Dunning. 2012. *Natural Experiments in the Social Sciences: A Design-Based Approach.* Cambridge University Press. [REFERRED TO AS "Dunning, *Natural Experiments*" BELOW]

David A. Freedman, Roger Pisani, and Robert Purves. 2007. *Statistics*. New York: W. W. Norton, 4th Ed. [REFERRED TO AS "FPP" BELOW].

The books will be on order at the Yale bookstore and will also be placed on reserve, if possible, at the Sterling Memorial Library/Cross-Campus Library (SML/CCL) or at the Social Sciences Library (SSL). It is fine to purchase new or used copies of the books from online booksellers, if they are available. Royalties from sales of the instructor's book (small as they are!) will be donated to charity.

Most of the required articles listed below are available online, especially through the online archive JSTOR (www.jstor.org), which is fully accessible from a Yale-networked terminal or by using the Yale library proxy with your Yale NetID (for information on proxy access, see http://www.library.yale.edu/fdfiles/orbis2/proxy_aboutnew.html). Some materials will be posted to the class site on the Classes V2 server, as indicated below.

OUTLINE OF THE COURSE

PART I. WHAT IS CAUSATION? HOW CAN WE MEASURE IT?

Wednesday, August 29: Introduction and Overview of the Course

NOTE: No class will be held on Friday, August 31.

Wednesday, Sept. 5: Conceptualizing Causation

Paul W. Holland. 1986. "Statistics and Causal Inference." *Journal of the American Statistical Association* 81 (396): 945-960. [JSTOR]

Henry E. Brady. 2010. "Causation and Explanation in Social Science." In Janet M. Box-Steffensmeier, Henry E. Brady, and David Collier, eds., *The Oxford Handbook of Political Methodology*. [Yale libraries; Online reference, Orbis]

(NOTE: FIRST SECTION MEETINGS WILL BE HELD ON THURSDAY SEPT. 6. PLEASE REGISTER FOR SECTIONS ONLINE.)

Monday, Sept. 10: Counterfactuals

Barry R. Weingast. 1996. "Off-the-Path Behavior: A Game-Theoretic Approach to Counterfactuals and its Implications for Political and Historical Analysis." In Philip E. Tetlock and Aaron Belkin (eds.), *Counterfactual Thought Experiments*

in World Politics: Logical, Methodological, and Psychological Perspectives. Princeton: Princeton University Press, 230-243. [Classes V2]

James Fearon: "Counterfactuals and Hypothesis Testing in Political Science," *World Politics* 43: 1991, pp. 169-195. [JSTOR]

Wednesday, Sept. 12: Correlation vs. Causation

Donald T. Campbell and H. Laurence Ross. 1968. "The Connecticut Crackdown on Speeding: Time-Series Data in Quasi-Experimental Analysis." *Law & Society Review* 3(1): 33-54. [JSTOR]

Monday, Sept. 17: Randomization and Experimentation

FPP, Chapters 1-2.

Dunning, *Natural Experiments*, Chapter 1.

Joshua D. Angrist and Jörn-Steffen Pischke. 2009. "The Experimental Ideal." Chapter 2 in *Mostly Harmless Econometrics: An Empiricist's Companion.* Princeton University Press. [Classes v2]

Wednesday, Sept. 19: Mechanisms and Explanation

John Goldthorpe. 2001. "Causation, statistics, and sociology." *European Sociological Review* 17 (1): 1-20. [JSTOR]

Jon Elster. 2007. "Explanation" and "Mechanisms." Chaps. 1 and 2 of *Explaining Social Behavior: More Nuts and Bolts for the Social Sciences* (New York: Cambridge University Press). [Classes V2]

Monday, Sept. 24: Process-Tracing and Causal Process Observations

David Collier. 2011. "Understanding Process Tracing." *PS: Political Science and Politics* 44 (4) (October 2011), including online supplement ("Teaching Process Tracing: Examples and Exercises"). See also Sir Arthur Conan Doyle, "The Adventure of Silver Blaze," Public Domain Books. [Online and Classes V2].

David Collier, Henry E. Brady, and Jason Seawright. "Sources of Leverage in Causal Inference: Toward an Alternative View of Methodology." Chapter 9 in RSI.

Henry E. Brady. 2010. "Data-Set Observations versus Causal-Process Observations: The 2000 U.S. Presidential Election." Chapter 12 in RSI.

David Freedman. 2010. "On Types of Scientific Inquiry: The Role of Qualitative Reasoning." Chapter 11 in RSI.

PART II: DOING RESEARCH

Wednesday, Sept. 26: Formulating Research Questions

Joshua D. Angrist and Jörn-Steffen Pischke. 2009. "Questions about *Questions*." Chapter 1 in *Mostly Harmless Econometrics: An Empiricist's Companion.* Princeton University Press. [Classes V2]

Monday, Oct. 1: Conceptualization and Measurement

David Collier and Steven Levitsky. 1997. "Democracy with Adjectives: Conceptual Innovation in Comparative Research." *World Politics* 49: 430-51. [JSTOR]

Adcock, Robert and David Collier. 2001. "Measurement Validity: A Shared Standard for Qualitative and Quantitative Research." *American Political Science Review*, 95 (3): 529-46. [JSTOR]

Pamela Paxton, "Women's Suffrage in the Measurement of Democracy: Problems of Operationalization." *Studies in Comparative International Development* 35(3), 2000: pp. 92-111. [Online and Classes V2]

Wednesday, Oct. 3: Scales, Measurement, and Data Analysis

S.S. Stevens. 1946. "On the Theory of Scales of Measurement." *Science* 103 (2684): 677-80. [JSTOR]

Frederic Lord. 1953. "On the Statistical Treatment of Football Numbers" *American Psychologist* 8: 750-51. [Online, and Classes V2]

FPP, Chapters 3-5, and pp. 298-299.

Monday, Oct. 8: Sampling and Statistical Inference

FPP, Chapters 19-20. (If the material in Chapter 20 is unfamiliar, read Chapters 16-18 as well).

Wednesday, Oct. 10: Causal and Statistical Inference in Experiments and Natural Experiments

FPP, Chapters 26-27

Dunning, *Natural Experiments*, Chapters 5-6.

Gerber, Alan S., Donald P. Green, and Christopher W. Larimer. 2008. "Social Pressure and Voter Turnout: Evidence from a Large-Scale Field Experiment." *American Political Science Review* 102 (1): 33-48.

Monday, Oct. 15: Experiments in Development

Marianne Bertrand, Simeon Djankov, Rema Hanna, and Sendhil Mullainathan. 2007. "Obtaining a Driver's License in India: An Experimental Approach to Studying Corruption." *The Quarterly Journal of Economics* 122 (4): 1639-1676

Wednesday, Oct. 17: Experiments, Mechanisms, and Mixed-Method Research

James Habyarimana, Macartan Humphreys, Daniel N. Posner, and Jeremy M. Weinstein. 2007. "Why Does Ethnic Diversity Undermine Public Goods Provision?" *American Political Science Review* 101(4): 709-725. [JSTOR]

Thad Dunning and Lauren Harrison. 2012. "Cross-Cutting Cleavages and Ethnic Voting: An Experimental Study of Cousinage in Mali." *American Political Science Review* 104(1): 21-39. [JSTOR]

Elizabeth Levy Paluck. 2010. "The Promising Integration of Qualitative Methods and Field Experiments." ANNALS, *AAPSS,* 628: 59-71. [Online and Classes V2]

Monday, Oct. 22: Natural Experiments

Dunning, *Natural Experiments*, Chapter 2.

David Clingingsmith, Asim Ijaz Khwaja, and Michael Kremer. 2009. "Estimating the Impact of the Hajj: Religion and Tolerance in Islam's Global Gathering." *Quarterly Journal of Economics* 124 (3): 1133–1170. [JSTOR]

[NOTE: NO CLASS ON OCTOBER 24 DUE TO OCTOBER RECESS]

Monday, Oct. 29: Class cancelled due to Hurricane Sandy

Wednesday, Oct. 31: Regression-Discontinuity Designs

Dunning, *Natural Experiments*, Chapters 3.

F. Daniel Hidalgo. 2012. "Digital Democratization: Suffrage Expansion and the Decline of Political Machines in Brazil." Manuscript, Department of Political Science, MIT [CLASSES V2]

Monday, Nov. 5: No class

Wednesday, Nov. 7: Instrumental-Variables Designs

Dunning, *Natural Experiments*, Chapters 4-6.

Angus Deaton. 2010. "Instruments, Randomization, and Learning about Development." *Journal of Economic Literature* 48 (2): 424–455.

[THURSDAY NOVEMBER 8: TURN IN EXPANDED TWO-PAGE DESCRIPTION OF RESEARCH PROPOSAL IN SECTION]

Monday, Nov. 12: Multi-Method Research and Strong Research Design

Dunning, *Natural Experiments*, Chapter 7-11.

David Freedman. 1991. "Statistical Models and Shoe Leather." *Sociological Methodology* 21: 291-313. Reprinted as Chapter 3 in David A. Freedman, 2010, *Statistical Models and Causal Inference: A Dialogue with the Social Sciences*, David Collier, Jasjeet S. Sekhon, Philip B. Stark, eds. CUP. [Online and Classes V2]

Wednesday, Nov. 14: IN-CLASS MIDTERM

[NO CLASS NOV. 19 OR NOV. 21, DUE TO NOVEMBER RECESS]

PART III: FURTHER TOPICS/PRACTICALITIES OF DOING RESEARCH

Monday, Nov. 26: Case Studies and Sub-National Comparisons

George, Alexander and Andrew Bennett. 2005. Chaps. 1 and 7 of *Case Studies and Theory Development in the Social Sciences* (Cambridge, MA: MIT Press). [Classes V2]

Richard Snyder. 2001. "Scaling Down: The Subnational Comparative Method." *Studies in Comparative International Development* 36 (1): 93-110.

Henry E. Brady, Michael Herron, Walter Mebane, Jasjeet Sekhon, Kenneth Shotts, and Jonathan Wand: "The Butterfly Did It: The Aberrant Vote for Pat Buchanan in Palm Beach County, Florida," *American Political Science Review* 95(4), 2001: pp. 793-810. [JSTOR]

Wednesday, Nov. 28: Laboratory Experiments (Guest Lecture: Malte Lierl)

Fehr, Ernst, and Bettina Rockenbach. 2003. "Detrimental effects of sanctions on human altruism." *Nature* 422(6928): 137–40. http://www.ncbi.nlm.nih.gov/pubmed/12634778

Dickson, Eric (2011): Economics vs. Psychology Experiments, in: Cambridge Handbook of Experimental Political Science

Levitt, Steven D, and John A List. 2007. "What Do Laboratory Experiments Measuring Social Preferences Reveal About the Real World?" *Journal of Economic Perspectives* 21(2): 153–174. http://pubs.aeaweb.org/doi/abs/10.1257/jep.21.2.153.

Monday, Dec. 3: Field Research

Elisabeth Wood. 2008. "Field Research." In Carles Boix and Susan Stokes, eds., *The Oxford Handbook of Comparative Politics*. Oxford University Press. [CLASSES V2]

Wednesday, Dec. 5: Research as Vocation, and Avocation

Max Weber. 1922. "Science as a Vocation." From H.H. Gerth and C. Wright Mills (Translated and edited), *From Max Weber: Essays in Sociology,* pp. 129-156, New York: Oxford University Press, 1946.

December 12: Final Research Proposals Due