

Political Science 305

Data Analysis

TuTh 10:30 – 11:50

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502 Pick

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Office Hours: W 1:00 – 3:00

Themes: This course is designed to introduce students to the philosophy and techniques that dominate data analysis in political science. The main focus of this course will be on the process of formulating hypotheses, developing appropriate tests, the relationship between hypothesis testing and theory building, and the collection and analyses of appropriate data. This course is conducted from a positivist standpoint, although some reference will be made to non-positivist standpoints, epistemological criticisms, and methodologies throughout the course. One theme that will be emphasized during the course is that the basic logic of empirical analyses applies both to qualitative and quantitative data analysis. However, the last section of the course will focus on the methods and skills necessary to begin to do preliminary quantitative analysis of one's data while preparing for additional political science courses in statistical methods.

Prerequisites: There are no formal requirements, although familiarity with algebra and computers is assumed. Computer and statistical skills will be introduced in the class as needed.

Requirements: The requirements for the course include weekly assignments. These assignments will vary and include both "thought experiments" and computer exercises. Students may use either data provided for the class *or with the express approval of Brehm* their own data. All members of the class will be expected to participate actively in class discussion and the section. Credit will be assigned at 85% for the homework and 15% for class discussion.

Required books (all are at the Seminary Coop bookstore):

- Achen, Christopher H. 1982. *Interpreting and Using Regression*.
- Campbell, Donald and Julian Stanley. 19xx. *Experimental and Quasi-Experimental Designs for Research*.
- Davis, James. 1985. *The Logic of Causal Order*.
- Durkheim, Emile. 1951. *Suicide*.
- Fowler, Floyd. 1993. *Survey Research Methods*.
- King, Gary, Robert O. Keohane, and Sidney Verba. 1994. *Designing Social Inquiry*.

- Ia. 1 Oct Introduction
- Ib. 3 Oct Hypotheses
 - Durkheim, Book 2: Chs. 2, 4, 5.
 - Davis, *The Logic of Causal Order*.
 - KKV, Ch. 3
- IIa. 8 Oct Interpretive Methods (Alex Wendt)
 - von Wright, Georg Henrik. *Explanation and Understanding*, Ch. 1
 - KKV, Ch. 2
 - Wendt, Alexander. 1998 “On constitution and causation in International Relations.”
 - Hacking, Ian. “Madness: Biological or Constructed?”
- IIb. 10 Oct Critical Tests and Alternative Hypotheses – *Brehm is out of town*
 - Bem, Daryl. 1967. “Self-perception: An Alternative Interpretation of Cognitive Dissonance Phenomena.” *Psychological Review*, 74:183–200.
 - Durkheim, Book 1: Chs. 1–2.
- IIIa. 15 Oct From Theory to Hypothesis
 - Durkheim, Book 3, Ch. 1.
 - Friedman, Milton. “The Methodology of Positive Economics.” In *Essays in Positive Economics*, 3–46.
 - New paper by Duncan.
- IIIb–IVa. 17 – 22 Oct Experiments and Quasi-Experiments (Melissa Harris-Lacewell)
 - Campbell and Stanley.
 - Iyengar, Shanto. 1987. “Television News and Citizens’ Explanations of National Affairs,” 815–32.
- IVb. – Va 24 – 29 Oct Surveys
 - Fowler, Ch. 2, 5, 6.
 - Brusco, Valeria, Marcelo Nazareno, and Susan C. Stokes. 2002. “Class, Region, and the Quality of Democracy in Argentina.”
- Vb. 31 Oct Process Tracing / Case Study
 - Tetlock, Philip and Aaron Belkin, *Counterfactuals*, Ch 1, 2
 - Bates, Robert, et al., *Analytical Narratives* (and reviews)
- VIa. 5 Nov Case selection
 - KKV, Ch. 4
 - Brehm, John. 1993. *The Phantom Respondents*, Ch. 5
 - Geddes, Barbara. 1990. “How the Cases You Choose Affect the Answers You Get: Selection Bias in Comparative Politics.” *Political Analysis*, Vol 2.
- VIb. 7 Nov Safe Data Practices
 - Fowler, Ch. 9
 - Nagler, Jonathan. 1995. “Coding Style and Good Computing Practices.” *The Political Methodologist*.
 - Milgrom, Stanley. 1969. *Obedience to Authority*, Ch. 1–3.

- VIIa. 12 Nov Contingency Tables
- Knoke, David and George Bohrnstedt, *Statistics for Social Data Analysis*, Ch. 7
 - Campbell, *et al.* *The American Voter*, Ch. 6
- VIIb. 14 Nov Distributions
- Cleveland, William S. and Robert McGill. 1984. "The Many Faces of a Scatterplot." *Journal of American Statistical Association*, 79:807–22.
 - Lewandowsky, Stephan and Ian Spence. 1989. "The Perception of Statistical Graphs." *Sociological Methods and Research*, 18:201–41.
 - Tufte, Edward. *Data Analysis for Politics and Policy*, Ch. 1
 - ((• King, Gary. *Unifying Political Methodology*, Ch. 3))
- VIIIa. 19 Nov Hypothesis Testing
- Bohrnstedt and Knoke, Ch. 3.
- VIIIb. 21 Nov Inference
- Holland, Paul. 1986. "Statistics and Causal Inference." *Journal of the American Statistical Association*, 81:945–70.
 - Western, Bruce and Simon Jackman. 1994. *APSR* 88:412–34.
- IX. 26 Nov Regression
- Achen, 1–30.
 - Freedman, David A. 1991. "Statistical Models and Shoe Leather." *Sociology Methodology*, 21:291–313.
- X. 3 – 5 Dec Multiple Regression
- Achen, 30–79.
 - Achen, "Measuring Representation."