PLS 501: Methods of Political Analysis (Research Design)

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Office: Pond Lab, room 227
Office Hours: Wednesday 1:30pm-3:30pm and by appointment.

Introduction

This class will provide graduate students with an introduction to the scientific method and an overview of how to apply it to the study of politics. Students will learn the fundamentals of the scientific method and, through research design, how to improve both causal inference and the measurement of political phenomena.

Required Reading Material

1. Trochim and Donnelly —Trochim, William and James P. Donnelly. 2007. The Research Methods Knowledge Base, 3rd Edition. Cincinnati, OH, Atomic Dog Publishing.

2. Dunning — Dunning, Thad. 2012. *Natural Experiments in the Social Sciences: A Design-Based Approach*. Cambridge: Cambridge University Press. Ch 2: "Standard Natural Experiments"

3. KKV — King, Gary, and Robert O. Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research* Princeton: Princeton University Press.

4. Additional articles and chapters are listed below. These will also be provided by the instructor.

Suggested Research Design Books

1. Shadish, William R., Thomas D. Cook and Donald T. Campbell. 2001. *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. Wadsworth Publishing.

Class Expectations and Grades

Read all of the assigned materials and be prepared to discuss each piece at the assigned class meeting. There are six 5-page written assignments for the course that are each worth 10% of the final grade. The remaining 40% is for participation in the classroom discussions. **Laptops will not be allowed during class meetings**, so make sure to print out the readings before class.

Assignments

Due dates appear below in the *Schedule of Readings* section. Assignments are due at the beginning of the first class in week of the due date.

1. **Theory Essay**: In no more than 5-double spaced pages, answer the following questions: "What is a theory and what is it good for."?

2. **Experimental Design**: Take a well known theory of politics and derive a hypothesis that is testable with an experimental design. Describe the theory, hypothesis, and experimental design in no more than 5-double spaced pages.

3. **Quasi-Experimental Design**: Take a well known theory of politics and derive a hypothesis that is testable with a quasi-experimental design. Describe the theory, hypothesis, and quasi-experimental design in no more than 5-double spaced pages.

4. **Data Validity Assessment**: Analyze the data provided by the instructor and assess its validity in no more than 5-double spaced pages

5. **Survey or Case Study Design**: Take a well known theory of politics and derive a hypothesis that is testable with a survey or case study. Describe the theory, hypothesis, and design in no more than 5-double spaced pages.

6. **Group Replication Project**: In groups of 2-4 students, obtain the materials necessary to replicate a political science research paper published in the last 5 years. Describe the initial study and the ease with which the results replicate. Then identify any design flaws in the research and propose a new or improved design. Again, the write-up should be no more than 5-pages. For background information read: King, Gary. 2006. "Publication, Publication." *PS: Political Science and Politics* 39: 119-125, which is assigned in week 11.

Acknowledgment

This syllabus is based in large part on the Research Design (204A) course developed by David Lake and Mathew McCubbins at the University of California, San Diego.

Schedule of Readings

Week 1: Introduction to the Scientific Method and the Philosophy of Science

Lecture Readings:

1. Trochim and Donnelly. Ch 1: "Foundations."
2. KKV. Ch 1: "The Science in Social Science."

Discussion Readings:

3. Lake, David A. 2011. "Why 'Isms' are Evil: Theory, Epistemology, and Academic Sects as Impediments to Understanding and Progress." *International Studies Quarterly* 55(2):465-480.
4. Mackie, Gerry 1996. "Ending Footbinding and Infibulation: A Convention Account." *American Sociological Review* 61(6):999-1017.
5. Schwartz, Thomas. 1980. *The Art of Logical Reasoning*. New York: Random House. pg.3-53.
6. Schrodt. Philip A. 2010. "Seven Deadly Sins of Quantitative Political Analysis." working paper.

Week 2: Methods of Observation and Inference

Lecture Readings:

1. KKV. Ch 2: "Descriptive Inference."
2. KKV. Ch 4: "Determining What to Observe."

Discussion Readings:

5. Cox, Gary W., and J. Morgan Kousser. 1981. "Turnout and Rural Corruption: New York as a Test Case." *American Journal of Political Science* 25(4):646-663.
6. Curd, Martin and J. A. Cover. 1998. *Philosophy of Science: The Central Issues* New York: W. W. Norton. Chapters by Ruse, pg.38-47, Hempel, pg.445-480, and Snyder, 460-480.
7. Fenno, Richard. 1977. "U.S. House Members in Their Constituencies: An Exploration." *American Political Science Review* 71(3):883-917.
8. Geertz, Clifford. 1973. "Thick Description." In Geertz, Clifford. *The Interpretation of Cultures*. New York: Basic Books.

Week 3: Design, Validity, and Disconfirmation

A draft of the **Theory Essay** assignment is due at the beginning of the first class this week. The final draft is due at the beginning of Week 15.

Lecture Readings:

1. Trochim and Donnelly. Ch 7: "Design."
2. Shadish, William R. 2010. "Campbell and Rubin: A Primer and Comparison of Their Approaches to Causal Inference in Field Settings." *Psychological Methods* 15(1):3-17.

Discussion Readings:

3. Carlson, Elizabeth C., "Social Desirability Bias and Reported Voting Behavior on African Surveys." working paper.
4. Gibson, James L. and Gregory A. Caldeira. 2009. "Knowing the Supreme Court? A Reconsideration of Public Ignorance of the High Court." *Journal of Politics* 71(2):429-441.
5. Lyall, Jason. 2009."Does Indiscriminate Violence Incite Insurgent Attacks? Evidence from Chechnya." *Journal of Conflict Resolution* 53(3): 331-62.
6. Squire, Peverill 1988. "Why the 1936 Literary Digest Poll Failed." *Public Opinion Quarterly* 52:125-133.

Week 4: Experimental Design

Lecture Readings:

1. Trochim and Donnelly. Ch 9: "Experimental Design."
2. Green, Donald P. and Alan S. Gerber. 2002. "Reclaiming the Experimental Tradition in Political Science." In *Political Science: State of the Discipline*, ed. by Ira Katznelson and Helen V. Milner. New York: W. W. Norton. pg.805-32.

Discussion Readings:

3. Bond, Robert M., Christopher J. Fariss, Jason J. Jones, Adam D. I. Kramer, Cameron Marlow, Jaime E. Settle, James H. Fowler. 2012. "A 61-Million-Person Experiment in Social Influence and Political Mobilization." *Nature* 489(7415):295-298.
4. Chattopadhyay, Raghabendra and Esther Duflo. 2004. "Women as Policy Makers: Evidence from a India-Wide Randomized Policy Experiment." *Econometrica* 72(5):1409-1443.
5. Press, Daryl G., and Scott D. Sagan and Benjamin A. Valentino. 2013. "Atomic Aversion: Experimental Evidence on Taboos, Traditions, and the Non-Use of Nuclear Weapons." *American Political Science Review* 107(1):188-206.

6. Malesky, Edmund, Anh Tran, and Paul Schuler. 2012. "A Field Experiment on Legislative Transparency in an Authoritarian Assembly." *American Political Science Review* 106(4):762-786.

7. Miguel Edward and Michael Kremer. 2004. "Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities." *Econometrica* 72:159-217.

Week 5: Quasi-Experimental Design: Non-Equivalent Group Designs

The **Experimental Design** assignment is due at the beginning of the first class this week.

Lecture Readings:

1. Trochim and Donnelly. Ch 10: "Quasi-Experimental Design."

2. Dunning. Ch 2: "Standard Natural Experiments."

Discussion Readings:

3. Card, David, and Alan B. Kreuger. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania." *American Economic Review* 84(4):772-793.

4. Hyde, Susan. 2007. "The Observer Effect in International Politics: Evidence from a Natural Experiment." *World Politics* 60:37-63.

5. Loewen, Peter J., Royce Koop, Jaime E. Settle, and James H. Fowler. Forthcoming. "A Natural Experiment in Proposal Power and Electoral Success." *American Journal of Political Science*

6. Posner, Daniel N. 2004. "The Political Salience of Cultural Difference: Why Chewas and Tumbukas Are Allies in Zambia and Adversaries in Malawi." *American Political Science Review* 98(4):529-545.

Week 6: Quasi-Experimental Design: Interrupted Time-Series, Regression Discontinuity, Matching, and Instrumental Variable Designs

Lecture Readings:

1. Trochim and Donnelly. Ch 11: "Advanced Design Topics."

2. Dunning. Ch 3: "Regression-discontinuity designs."

3. Dunning. Ch 4: "Instrumental-variables designs."

Discussion Readings:

4. Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review* 91(5):1369-1401.
5. Campbell, Donald T. and H. Laurence Ross. 1968. "Analysis of Data on the Connecticut Speeding Crackdown as a Time-Series Quasi-Experiment." *Law and Society Review* 3(1):55-76.
6. Fowler, James H. (2008) "The Colbert Bump in Campaign Donations: More Truthful Than Truthy." *PS: Political Science Politics* 41(3):533-539.
7. Lyall, Jason. 2010. "Are Co-Ethnics More Effective Counter-Insurgents? Evidence from the Second Chechen War." *American Political Science Review* 104(1):1-20.

Week 7: Measurement Theory: Data, Validity, and Reliability

The **Quasi-Experimental Design** assignment is due at the beginning of the first class this week.

Lecture Readings:

1. Trochim and Donnelly. Ch 3: "The Theory of Measurement."
2. Coombs, Clyde. 1964. *A Theory of Data*. New York: John Wiley. Ch 1.

Discussion Readings:

3. Fowler, James H., and Sangick Jeon. 2008. "The Authority of Supreme Court Precedent." *Social Networks* 30:16-30.
4. Geddes, Barbara, Joseph Wright, and Erica Frantz. 2012. "New Data on Autocratic Regimes." Available at: http://dictators.la.psu.edu/pdf/pp10.pdf
5. Gleditsch, Kristian, and Michael Ward. 1997. "Double Take: A Re-examination of Democracy and Autocracy in Modern Politics." *Journal of Conflict Resolution* 41:361-83.
6. Przeworski, Adam, et. al. 2000. *Democracy and Development*. New York: Cambridge University Press. Ch 1: pg.13-77.

Week 8: Measurement Theory: Sampling and Survey Design

Lecture Readings:

1. Trochim and Donnelly. Ch 2: "Sampling."
2. Trochim and Donnelly. Ch 4: "Survey Research."
3. Dunning. Ch 6: "Sampling processes and standard errors."

Discussion Readings:

4. 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. Jones, Jason J., Jaime E. Settle, Robert M. Bond, Christopher J. Fariss, Cameron Marlow, James H. Fowler 2013. "Inferring Tie Strength from Online Directed Behavior." *PLoS ONE* 8(1):e52168.
6. Sears, David O. 1986. "College Sophomores in the Laboratory: Influences of a Narrow Data Base on Social Psychologys View of Human Nature." *Journal of Personality and Social Psychology* 51:515-530.
7. Welch, Susan. 1975. "Sampling by Referral in a Dispersed Population." *Public Opinion Quarterly* 39(2):237-245.

Week 9: Measurement Theory: Models of Unobservable Constructs

The **Data Validity Assessment** assignment is due at the beginning of the first class this week.

Lecture Readings:

1. Trochim and Donnelly. Ch 5: "Scales and Indexes."
2. Jackman, Simon. 2008. "Measurement". In *The Oxford Handbook of Political Methodology*, edited by Janet M. Box-Steffensmeier, Henry E. Brady, and David Collier. Oxford University Press.
3. Shepard, Roger N. 1987. "Toward a Universal Law of Generalization for Psychological Science." *Science* 237:1317-1323.

Discussion Readings:

4. Fariss, Christopher J. "Respect for Human Rights has Improved Over Time: A Dynamic Latent Variable Model with Implications for the Analysis of Political Texts." Working Paper.
5. Keele, Luke. 2005. "Macro Measures and Mechanics of Social Capital." *Political Analysis* 13:139-156.
6. Poole, Keith T. and Howard Rosenthal. 1991. "Patterns of Congressional Voting." *American Journal of Political Science* 35(1):228-278.

Week 10: Observational Data and Design Choice

Lecture Readings:

1. KKV. Ch 5: "Understanding What to Avoid."

Discussion Readings:

2. Bennett, D. Scott and Allan C. Stam 2000. "Research Design and Estimator Choices in the Analysis of Interstate Dyads When Decisions Matter." *Journal of Conflict Resolution* 44(5):653-685.

3. Lupu, Yonatan. 2013. The Informative Power of Treaty Commitment: Using the Spatial Model to Address Selection Effects. *American Journal of Political Science*

4. McDermott, Rose , Chris Dawes, Elizabeth Prom-Wormley, Lindon Eaves, and Peter K. Hatemi. Forthcoming. "MAOA and Aggression: A Gene-environment interaction in two populations." *Journal of Conflict Resolution*

5. Miguel, Edward, Sebastian M. Saiegh, and Shanker Satyanath. 2011. "Civil War Exposure and Violence." *Economics Politics* 23(1):59-73.

6. Ward, Michael D., Brian Greenhill and Kristin Bakke. 2010. "The Perils of Policy by p-value: Predicting Civil Conflicts." *Journal of Peace Research* 46(4): 363-375.

Week 11: Analysis, Transparency, and the Replication Standard

Lecture Readings:

1. Trochim and Donnelly. Ch 12: "Analysis."

2. Trochim and Donnelly. Ch 14: "Analysis for Research Design."

3. Dunning. Ch. 5: "Simplicity and Transparency: keys to quantitative analysis."

Discussion Readings:

4. Fowler, James H., and Christopher T. Dawes (2013) "In Defense of Genopolitics." *American Political Science Review* 107(2):TBD.

5. King, Gary, Nielsen, Richard, Coberley, Carter, Pope, James E, and Wells, Aaron. 2011. "Avoiding Randomization Failure in Program Evaluation." *Population Health Management* 14(1):S11-S22.

6. King, Gary. 2006. "Publication, Publication." *PS: Political Science and Politics* 39: 119-125.

Week 12: Case Studies and Case Selection

Lecture Readings:

1. Geddes, Barbara. 1990. "How the Cases You Choose Affect the Answers You Get." *Political Analysis* 2:131-150.

2. Lijphart, Arend 1971. "Comparative Politics and the Comparative Method." *American Political Science Review* 65(3):682-693.

Discussion Readings:

3. Abadie, Alberto, Alexis Diamond, and Jens Hainmueller. 2010. "Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program." *Journal of the American Statistical Association* 105(490):493-505.

4. Dreze, Jean and Amartya Sen. 1989. "Hunger and Public Action." Oxford University Press. Ch 11: "China and India."

5. Gartzke, Erik and Yonatan Lupu. 2012. "Trading on Preconceptions: Why World War I Was Not a Failure of Economic Interdependence." *International Security* 36(4):115-150.

6. Plümper, Thomas, Vera E. Troeger, and Eric Neumayer. "Case Selection and Causal Inference in Qualitative Research." working paper.

Week 13: Qualitative Methods and Mixed Methods

The **Survey or Case Study Design** assignment is due at the beginning of the first class this week.

Lecture Readings:

1. Trochim and Donnelly. Ch 6: "Qualitative and Unobtrusive Measures."

2. Trochim and Donnelly. Ch 8: "Qualitative and Mixed Methods Designs."

3. Dunning. Ch. 7: "The central role of qualitative evidence."

Discussion Readings:

4. Brady, Henry E., David Collier, and Jason Seawright. 2006. "Toward a pluralistic vision of methodology." *Political Analysis* 14:353-368.

5. Lieberman, Evan. 2009. *Boundaries of Contagion*. Princeton: Princeton University Press. Ch 2.

6. Scott, James C. 1999. *Seeing Like a State*. Yale University Press. Ch 1.

Week 14: The Philosophy of Science Revisited

Lecture Readings:

1. Kuhn, Thomas S. 1970. *The Structure of Scientific Revolutions*, 2nd ed. Chicago: University of Chicago Press. Selected chapters.

2. Lakatos, Imre. 1970. "Falsification and the Methodology of Scientific Research Programmes." In *Criticism and the Growth of Knowledge,* edited by Imre Lakatos and Alan Musgrave. Cambridge: Cambridge University Press.

3. Popper, Karl R. 1968. *The Logic of Scientific Discovery*, 2nd ed. New York: Harper Row. Selected chapters.

Discussion Readings:

4. Bueno de Mesquita, Bruce. 1985. "Toward a Scientific Understanding of International Conflict: A Personal View." *International Studies Quarterly* 29(2):121-136.

5. Clarke, Kevin A. and David M. Primo. 2007. "Modernizing Political Science: A Model-Based Approach." *Perspectives on Politics* 5(4):741-753.

6. Lake, David A. Forthcoming. "Theory is Dead, Long Live Theory: The End of the Great Debates and the Rise of Eclecticism in International Relations." *European Journal of International Relations*.

Week 15: Finding the Research Frontier

An updated draft of the **Theory Essay** assignment is due at the beginning of the first class this week.

Lecture Readings:

1. Fowler, James H. and Darren Schreiber 2008. "Biology, Politics, and the Emerging Science of Human Nature." *Science* 322(5903):912-914.

2. Lazer, David, Alex (Sandy) Pentland, Lada Adamic, Sinan Aral, Albert-Lszl Barabsi, Devon Brewer, Nicholas Christakis, Noshir Contractor, James H. Fowler, Myron Gutmann, Tony Jebara, Gary King, Michael Macy, Deb Roy, Marshall Van Alstyne 2009. "Computational Social Science." *Science* 323(5919): 721-723.

3. Zinnes, Dina A. 1980. "Three Puzzles in Search of a Researcher: Presidential Address." *International Studies Quarterly* 24(3):315-342.

Discussion Readings:

Note: readings for this week will be assigned to individuals to informally (i.e., no slides) present during the last discussion section.

4. Grimmer, Justin and Brandon M. Stewart. Forthcoming. "Text as Data: The Promise and Pitfalls of Automatic Content Analysis Methods for Political Texts." *Political Analysis*

5. Jung, Danielle F., and David A. Lake. 2011. "Markets, Networks and Hierarchies: An Agent-Based Organizational Ecology." *American Journal of Political Science* 55(4):972-990.

6. Imai, Kosuke, Luke J. Keele, Dustin Tingley, and Teppei Yamamoto. 2011. "Unpacking the Black Box of Causality: Learning about Causal Mechanisms from Experimental and Observational Studies." *American Political Science Review* 105(4):765-789.

7. King, Gary, Jennifer Pan, and Margaret Roberts. 2013. "How Censorship in China Allows Government Criticism but Silences Collective Expression." *American Political Science Review* 107(2)326-343:

8. Montgomery, Jacob M., Florian M. Hollenbach, and Michael D. Ward. 2012. "Improving Predictions Using Ensemble Bayesian Model Averaging." *Political Analysis* 20(3): 271-291.

9. Schnakenberg, Keith E., Elizabeth Maggie Penn, Skye Buckner-Petty, Berkley Shands, Elena Deych, and William D. Shannon. "Incomplete Matching for Estimating Risk Ratios for Multiple Category Treatments." working paper.

10. Schnakenberg, Keith E. and Elizabeth Maggie Penn. Forthcoming. "Scoring from Contests." *Political Analysis*

11. Schreiber, Darren, Greg Fonzo, Alan N. Simmons, Christopher T. Dawes, Taru Flagan, James H. Fowler, Martin P. Paulus. 2013. "Red Brain, Blue Brain: Evaluative Processes Differ in Democrats and Republicans." *PLoS ONE* 8(2):e52970.

Week 16: Finals Week

The **Group Replication Project** assignment is due by the scheduled final exam time this week.

Academic Dishonesty

The Department of Political Science, along with the College of the Liberal Arts and the University, takes violations of academic dishonesty seriously. Observing basic honesty in one's work, words, ideas, and actions is a principle to which all members of the community are required to subscribe.

All course work by students is to be done on an individual basis unless an instructor clearly states that an alternative is acceptable. Any reference materials used in the preparation of any assignment must be explicitly cited. Students uncertain about proper citation are responsible for checking with their instructor.

In an examination setting, unless the instructor gives explicit prior instructions to the contrary, whether the examination is in class or take home, violations of academic integrity shall consist but are not limited to any attempt to receive assistance from written or printed aids, or from any person or papers or electronic devices, or of any attempt to give assistance, whether the one so doing has completed his or her own work or not.

Lying to the instructor or purposely misleading any Penn State administrator shall also constitute a violation of academic integrity.

In cases of any violation of academic integrity it is the policy of the Department of Political Science to follow procedures established by the College of the Liberal Arts. More information on academic integrity and procedures followed for violation can be found at:
`http://laus.la.psu.edu/current-students/academics/academic-integrity/college-policies`

Note to students with disabilities: Penn State welcomes students with disabilities into the University's educational programs. If you have a disability-related need for reasonable academic adjustments in this course, contact the Office for Disability Services. For further information regarding policies, rights and responsibilities please visit the Office for Disability Services (ODS) Web site at: `www.equity.psu.edu/ods/`

Instructors should be notified as early in the semester as possible regarding the need for reasonable accommodations.