

Week Two: Empirical Implications of Causality

Leads: James Granato and Rebecca Morton

Guest faculty: Daniel Diermeier , Guillermina Jasso and Mary Rigdon

In this module participants will be introduced to “causal methods” when data come from alternative sources (experimental and non-experimental). While the alternative data sources do involve different attributes and challenges, it is also true that there is considerable agreement on the essential elements on valid causal modeling and testing. Central to this agreement is the use and linkage of formal and empirical tools.

Participants are provided both required and recommended readings below. Recommended readings are to be used for further background and reference on the topic. Participants should only familiarize themselves with the required readings prior to the lectures.

MONDAY, JUNE 26

9:00-10:20 Introduction to Relationship Between EITM & Causality (Becky and Jim)

- Historical Background
- Concepts: Identification, Invariance, Endogeneity, Asymmetry

Required Reading:

Achen, Christopher. 2002. Towards a New Political Methodology: Microfoundations and ART. *Annual Review of Political Science* 5: 423-450.

Granato, Jim. 2005. Scientific Progress in Quantitative Political Economy. *The Political Economist* XII, 4: 1-20.

Zellner, Arnold. Causality and Econometrics. 1984. In *Basic Issues in Econometrics*. Chicago : University of Chicago Press. (Read pages 35-74 only).

Recommended Reading (Optional):

Aldrich, John. 1989. Autonomy. *Oxford Economic Papers* 41: 15-34.

Granato, Jim., and Frank Scioli. 2004. Puzzles, Proverbs, and Omega Matrices: The Scientific and Social Significance of Empirical Implications of Theoretical Models (EITM). *Perspectives on Politics* 2: 313-323.

Heckman, James. 2000. Causal Parameters and Policy Analysis in Economics: A Twentieth Century Retrospective. *Quarterly Journal of Economics* 115: 45-97.

Heckman, James. 2005. The Scientific Model of Causality. Typescript.

Powell, Robert. 1999. *In the Shadow of Power*. Princeton, NJ: Princeton University Press. (Read pages 23-39 only).

Qin, Duo. 1989. Formalization of Identification Theory. *Oxford Economic Papers* 41: 73-93.

10:40-12:00 Introduction to *Experimental*ITM (Becky)

- Historical background
- Dimensions and types

Required Reading:

Morton, Rebecca and Kenneth Williams. 2006. *From Nature to the Lab: Experimental Political Science* (hereafter Morton-Williams), Chapters 1 & 2
http://www.nyu.edu/gsas/dept/politics/faculty/morton/morton_book2.html

Samuelson, Larry. "Economic Theory and Experimental Economics" in *Journal of Economic Literature*. Vol. XLIII (March 2005), pp.65-107.

Recommended Reading (There is a lot, so please recognize these are optional!):

Camerer, Colin F. 2003. *Behavioral Game Theory: Experiments in Strategic Interaction*, (hereafter Camerer) New York: Russell Sage Foundation, Introduction.

Green, Donald P. and Alan S. Gerber. 2002. Reclaiming the Experimental Tradition in Political Science, In *Political Science: State of the Discipline*, edited by Ira Katznelson and Helen Milner, New York: W.W. Norton.

Kinder, Donald R. and Thomas R. Palfrey. 1993. On Behalf of an Experimental Political Science in *Experimental Foundations of Political Science*, ed. By Kinder and Palfrey, Ann Arbor: U of Michigan Press.

Palfrey, Thomas. 1991. Introduction. *Laboratory Research in Political Economy*, ed. By Palfrey, Ann Arbor: U of Michigan Press.

Palfrey, Thomas. 2006. "Laboratory Experiments in Political Economy." in *Handbook of Political Economy*. B. Weingast and D. Wittman eds. Oxford University Press: Oxford.

12:00-1:15 Lunch

1:15-2:30 The Experimental Method and Causality (Becky)

- Models of Causality – RCM versus Structural
- Dealing with confounding through control
- Dealing with confounding through sidestepping

Required Reading:

Morton-Williams, Chapters 3, 4, 5
http://www.nyu.edu/gsas/dept/politics/faculty/morton/morton_book2.html

Recommended Reading (Optional! – Focus should be on Morton-Williams Chapters):

Diamond, Alexis, and Jasjeet S. Sekhon, Genetic Matching for Estimating Causal Effects: A General Multivariate Matching Method for Achieving Balance in Observational Studies, working paper, U of California, Berkeley, 2005.

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* 94:653-63.

Gerber, Alan S. and Donald P. Green. 2005. Correction to Gerber and Green (2000), Replication of Disputed Findings, and Reply to Imai (2005), *American Political Science Review*, vol. 99, no. 2, May, 301-313.

- Greenland, Sander and Babette Brumback. 2002. An Overview of Relations Among Causal Modelling Methods, *International Journal of Epidemiology*, 31:1030-1037.
- Heckman, James J. 1996. Randomization as an Instrumental Variable, *Review of Economics and Statistics*, 78(2): 336-341.
- Holland, Paul W. 1986. Statistics and Causal Inference, *Journal of the American Statistical Association*, vol. 81, no. 396 (December), pages 945-960.
- Imai, Kosuke, 2005. Do Get-Out-the-Vote Calls Reduce Turnout? The Importance of Statistical Methods for Field Experiments, *American Political Science Review*, vol. 99, no. 2, May, 283-300.
- Luellen, Jason K., Williams R. Shadish, and M. H. Clark, Propensity Scores: An Introduction and Experimental Test, *Evaluation Review*, vol. 29, no. 6, December 2005, pages 530-558.
- West, Stephen G., Jeremy C. Biesanz, and Steven C. Pitts, 2000. Causal Inference and Generalization in Field Settings: Experimental and Quasi-Experimental Designs. In *Handbook of Research Methods in Social and Personality Psychology*, edited by Harry T. Reis and Charles M. Judd, Cambridge: Cambridge U. Press.
- Winship, C. and Morgan, S. L. 1999. The Estimation of Causal Effects From Observational Data, *Annual Review of Sociology*, 25, 659-707.
- Wooldridge, Jeffrey M. 2002. *Econometric Analysis of Cross Section and Panel Data*, Cambridge: MIT Press, Chapter 18: Estimating Treatment Effects.

2:45-4:00 Empirical Concepts and Analogues (Jim)

- Persistence
- Measurement Error

Required Reading:

Johnston, Jack., and John DiNardo. 1997. *Econometric Methods*. Chapter 6: 174-195.
Johnston and DiNardo, Chapter 5: 153-158.

Recommended Reading (Optional):

- Achen, Christopher. 1983. Toward Theories of Data: The State of Political Methodology, in Ada Finifter, ed., *Political Science: State of the Discipline*.
- Hendry, David, and Grayham Mizon. 1978. Serial Correlation as a Convenient Simplification, not a Nuisance: a Comment on a Study of the Demand for Money by the Bank of England. *The Economic Journal* 88: 549-563.
- Mizon, Grayham. 1995. A Simple Message for Autocorrelation Correctors: Don't. *Journal of Econometrics*, 69, 267-288.
- Hibbs, Douglas. 1974. Problems of Statistical Estimation and Causal Inference in Time-Series Regression Models. *Sociological Methodology* 5: 252-308.

4:30-5:30 Office hours

6:30 Dinner

TUESDAY, JUNE 27 -- Lecture by Willie Jasso (separate syllabus)

9:00-10:20: Presentation by Jasso

10:40-12:00: Jasso Continued

12:00-1:15: Lunch

1:15-5:30: Extended Office Hours with Guest Lecturer and Group Exercises (participants will have an experimental project to work on)

6:30: Dinner

WEDNESDAY, JUNE 28 – Lecture by Daniel Diermeier

9:00-10:20: Presentation by Diermeier

10:40-12:00: Diermeier Continued

12:00-1:15: Lunch

1:15-5:30: Extended Office Hours with Guest Lecturer and Group Exercises

6:30: Dinner

THURSDAY, JUNE 29

9:00-10:20 Formal Concept(s) and Analogue(s) (Jim)

- Expectations

Required Reading:

Evans, George., and Seppo Honkapohja. 2001. Economics of Expectations. *International Encyclopedia of the Social and Behavioral Sciences*.

Enders, Walter. 2003. *Applied Econometric Time Series*. Chapter 1.

Recommended Reading (Optional):

Bray, Margaret M. 1982. Learning, Estimation, and the Stability of Rational Expectations. *Journal of Economic Theory* 26: 318-339.

Granato, Jim., and Sunny M. C. Wong. 2004. Political Campaign Advertising Dynamics. *Political Research Quarterly* 57, 3: 349-361.

Ljung, Lennart. 1977. Analysis of Recursive Stochastic Algorithms. *IEEE Transactions on Automatic Control* 22: 551-575.

McCallum, Bennett. 1983. On Nonuniqueness in Linear Rational Expectations Models: An Attempt at Perspective. *Journal of Monetary Economics* 11: 134-168.

Muth, John F. 1961. Rational Expectations and the Theory of Price Movements. *Econometrica* 29: 315-335.

10:40-12:00 Structural Estimation in the Lab (Becky)

Required Reading:

Morton-Williams, Chapter 6

http://www.nyu.edu/gsas/dept/politics/faculty/morton/morton_book2.html

Morton, Rebecca, 2006. Why the Centipede Game Experiment is Important for Political Science, forthcoming in *A Positive Change in Political Science: The Legacy of Richard D. McKelvey's Most Influential Writings*, ed. By James Alt and Arthur Lupia, Ann Arbor: U of Michigan Press (hereafter Alt-Lupia).

Recommended Reading (Optional):

- Battaglini, Marco, Rebecca Morton, and Thomas Palfrey, *The Swing Voter's Curse in the Laboratory*, working paper, 2005 (hereafter BMP)
- Cameron, Charles M. and Rebecca Morton. 2002. Formal Theory Meets Data. In *Political Science: State of the Discipline*, edited by Ira Katznelson and Helen Milner, New York: W.W. Norton.
- Goeree, Jacob and Charles A. Holt. 2005. "Anomalous Behavior in Binary Choice Games: Entry, Voting, Public Goods, and the Volunteer's Dilemma." *American Political Science Review*. In Press.
- List, John and Steven Levitt, What Do Laboratory Experiments Tell Us About the Real World?, working paper U of Chicago Economics Department
- McKelvey, Richard D. and Thomas R. Palfrey. 1995. "Quantal Response Equilibria for Normal Form Games." *Games and Economic Behavior*. 10, 6-38.
- McKelvey, Richard D. and Thomas R. Palfrey. 1998. "Quantal Response Equilibria for Extensive Form Games." *Experimental Economics*. 1, 9-41.
- Morton, Rebecca, 1999. *Methods and Models*. Chapter 4.
- Palfrey, Thomas, 2006. McKelvey and Quantal Response Equilibrium. in Alt-Lupia Pearl, Judea, 2000. Epilogue: The Art and Science of Cause and Effect, *Causality: Models, Reasoning, and Inference*, Cambridge: Cambridge U. Press.
- Roth, Alvin, Comments on List and Levitt, Harvard U.

12:00-1:15 Lunch

1:15-2:30 EITM: Linking Expectations to Persistence (Jim)

- Campaign Strategy
- Macroeconomic Policy

Required Reading:

Clarke, Harold., and Jim Granato. 2004. Autocorrelation: From Practice to Theory. In K. Kampf-Leonard (ed.), *Encyclopedia of Social Measurement*. San Diego : Academic Press.

Granato, Jim., and Melody Lo, and Sunny M.C. Wong. 2005. Not Even Wrong: Using the Empirical Implications of Theoretical Models (EITM) to Maximize Falsification. Typescript.

2:45-4:00 Presentation of Group Experimental Exercises (Done over Tuesday and Wednesday) Meet in a Computer Lab (Becky)

4:30-5:30 Office hours

6:30 Dinner

FRIDAY, JUNE 30

9:00-10:20 Design Issues in Experiments (Becky)

Required Reading:

Morton-Williams, selected pages.

http://www.nyu.edu/gsas/dept/politics/faculty/morton/morton_book2.html

Recommended Reading (Optional):

Frechette, Guillaume, John H. Kagel, and Massimo Morelli, Behavioral Identification in Coalitional Bargaining: An Experimental Analysis of Demand Bargaining and Alternating Offers, *Econometrica*, Volume 73, Issue 6, November 2005, pp. 1893-1938.

Hertwig, Ralph and Andreas Ortmann, Experimental Practices in Economics: A Methodological Challenge for Psychologists?" 2001. *Behavioral and Brain Sciences* 24, 383-451.

Camerer, selected pages

10:40-12:00 Mary Rigdon: Experiments and Behavioral Game Theory

McCabe, Kevin, Mary Rigdon and Vernon L. Smith. 2003. "Positive Reciprocity and Intentions in Trust Games" in *Journal of Economic Behavior and Organization*, vol. 52, pp. 267-275.

Fehr, Ernst and Klaus Schmidt. 1999. "A Theory of Fairness, Competition, and Cooperation" *Quarterly Journal of Economics*, v. 114(3), pp. 817-868.

12:00-1:15 Lunch

1:15-2:30 EITM: Linking Expectations to Measurement Error (Jim)

- Economic Voting

Required Reading:

Alesina, Alberto, and Howard Rosenthal. 1995. *Partisan Politics, Divided Government, and the Economy*. New York : Cambridge University Press. Pages 191-195.

Suzuki, Motoshi., and Henry Chappell, Jr. 1996. The Rationality of Economic Voting Revisited. *The Journal of Politics* 58, 1: 224-236.

Kramer, Gerald. 1983. The Ecological Fallacy Revisited: Aggregate-versus Individual-Level Findings on Economics and Elections and Sociotropic Voting. *American Political Science Review* 77: 92-111.

2:45-4:00 TBA

4:30-5:30 Office hour

6:30 Dinner