Political Science 786
Event History
Winter/Spring Quarters 2000

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Course Description:

Social science theories are increasingly focused on change processes and temporal data are becoming widely available. Yet the vast majority of empirical research focuses on static relationships, i.e., at one point in time, typically cross-sectional studies. Even when time series or panel data are analyzed, the temporal structure is often ignored and the data are treated as though they are cross-sections with some additional methodological complications involving autocorrelations. Event history methods are ideal for studying temporal change. They address not only whether an event occurred, but when the event occurred. For many research questions in social science, the timing or history of social change is at least as interesting as understanding the culminating event. Research designs incorporating "history" into the analysis promises greater analytical leverage than designs ignoring history, such as cross-sectional designs. Event history analysis is clearly longitudinal and involves the statistical examination of longitudinal data collected on a set of observations. While a wide variety of statistical models may be constructed for event history data, at the most basic level, all event history models have some common features.

The dependent variable measures the duration of time that units spend in astate before experiencing some event. Generally, a researcher knows when the observations enter the process, i.e., when the history begins, and when, and whether or not, the process ends (with the occurrence or nonoccurrence of some event). Analysts are typically interested in the relationship between the length of the observed duration and independent variables, or covariates, of theoretical interest. A statistical model can then be constructed to link the dependent variable to the covariates. Inferences can be made regarding the influence of the covariates on the length of the duration and the occurrence (or nonoccurrence) of some event.

As scholars are beginning to recognize, these methods have many advantages and allow new questions to be addressed. Event history data are becoming more and more available in all areas of empirically oriented political science. Applications include the duration of peace, the duration of unemployment, the length of time a cabinet is in place, when a challenger enters a congressional race, the duration of congressional careers, when a policy is likely to be adopted by the states, or how long it takes to complete a dissertation. The course will thoroughly describe different models for different kinds of duration data, document the assumptions underlying these different models, and consider goodness-of-fit indices and diagnostic techniques, i.e., residual and specification analysis.

Software: a variety of software can be used for this course with varying advantages and disadvantages, which will be discussed in class. The options include Stata, S+, Limdep, TDA (shrink wrapped with the Blossfeld and Rohwer text), SAS, and SPSS.

There will be a class web site to facilitate/augment the class at:
http://psweb.sbs.ohio-state.edu:8080/webct/public/show_courses
From here you need to log into the event history course and enter your userid and password which will be assigned at the beginning of the class.

Texts:

Required:

Blossfeld, Hans-Peter and Gotz Rohwer. 1995. *Techniques of Event History Modeling*. Mahwah, NJ: Erlbaum.

Reading packet will be made available for the applications.

Recommended:

* = strong recommendation

Blossfeld, Hans-Peter, Alfred Hamerle and Karl Ulrich Mayer. 1989. *Event History Analysis*. Hillsdale, NJ: Erlbaum.

*Collett, D. *Modelling Survival Data in Medical Research*. 1994. New York: Chapman & Hall.

Box-Steffensmeier, Janet M., and Bradford S. Jones. 1999 (Draft). *Timing and Political Change: Event History Modeling in Political Science*. Available via the web. Comments appreciated.

Elandt-Johnson, Regina, and Norman Johnson. 1999. *Survival Models and Data Analysis.* New York: John Wiley & Sons.

Evans, Merran, Nicholas Hastings and Brian Peacock. 1993. *Statistical Distributions*, 2nd Ed. New York: Wiley. Great little handbook of distributions. Very useful.

Gourieroux, Christian and Alain Monfort. 1995. *Statistics and Econometric Models*, Vols. 1 and 2. New York: Cambridge University Press. Very comprehensive reference for estimation theory (vol. 1) and inference (vol.2).

Greene, William H. 1997. *Econometric Analysis*, 3rd. Ed. Upper Saddle River, NJ: Prentice Hall. A standard reference work.

Hosmer, David W., and Stanley Lemeshow. 1998. *Applied Survival Analysis: Regression Modeling of Time*. New York: John Wiley & Sons.

Kalbfleish and Prentice. 1980. *The Statistical Analysis of Failure Time Data*. New York: John Wiley & Sons.

King, Gary. 1989. *Unifying Political Methodology: The Likelihood Theory of Statistical Inference*. Ann Arbor: University of Michigan Press. Originally Published by Cambridge University Press. Excellent, accessible treatment of likelihood theory, with political science examples.

*Klein, John P., and Marvin L. Moeschberger. 1997. *Statistics for Biology and Health.* New York: Springer-Verlag.

Lancaster, Tony. 1990. *Econometric Analysis of Transition Data.* New York: Cambridge University Press.

Le, Chap T. 1997. Applied Survival Analysis. New York: John Wiley & Sons.

Grading:

Grading will be based on class presentations of a recently published article or conference paper using event history. Permission and consultation with the instructor prior to choosing the article is required. 15%

Participation in class and discussion of articles presented. 10%

Data analysis assignments (three total; 25% each). 75%

Course Schedule:

The class generally meets on Fridays from 12:00-2:00 EASTERN time. Specifically, we are meeting:
January 21st
January 28th
February 4th
February 11th
February 18th
February 25th
March 3rd
March 10th
March 17th
March 31st
April 7th
April 14th
April 21st
May 5

There will NOT be class on March 24th or April 28th (Spring Break and MPSA dates). Those students able to attend the MPSA will likely meet for dinner.

Topic 1: Event History Models: Introduction and Overview

Required:

Chapter 1, Blossfeld &Rohwer: Introduction
Chapter 2, Blossfeld &Rohwer: Event History Data Structures
Chung, Ching-Fan, Peter Schmidt, and Ann D. Witte. 1991. "Survival Analysis: A Survey." *Journal of Quantitative Criminology* 7(March):59-98.
Box-Steffensmeier, Janet M. and Brad Jones. 1997. "Time is of the Essence: Event History Models in Political Science." *American Journal of Political Science* 41(October): 1414-1461.
King, Gary, James Alt, Michael Laver and Nancy Burns. 1990. "A Unified Model of Cabinet Dissolution in Parliamentary Democracies." *American Journal of Political Science* 34(4): 847-871.

Recommended:

Kiefer, Nicholas. 1988. "Economic Duration Data and Hazard Functions." Journal of Economic Literature." 26:646-79.
Chapter 1, Box-Steffensmeier & Jones: Event History and Political Analysis.

Topic 2: Event History Model Estimation

Required:

Chapter 5, Blossfeld & Rohwer: Piecewise Constant Exponential Models
Beck, Nathaniel. "Modeling Space and Time: The Event History Approach." In Research Strategies in the Social Sciences, Elinor Scarbrough and Eric Tanenbaum, eds. Oxford: Oxford University Press.

Recommended:

Chapters 3, 4, and 5, Klein, John P., and Marvin L. Moeschberger. 1997. *Statistics for Biology and Health.* New York: Springer-Verlag.

Chapter 3, Box-Steffensmeier & Jones: Models for Event History Data (section on estimation).

Topic 3: Continuous-Time Models I: Cox's Proportional Hazards Model

Required:

Chapter 9, Blossfield and Rohwer: Semi-Parametric Transition Rate Models

Box-Steffensmeier, Janet M., Laura W. Arnold and Christopher J. W. Zorn. 1997. "The Strategic Timing of Position Taking in Congress: A Study of the North American Free Trade Agreement." *American Political Science Review* 91(June): 324-338.

Hammons, Christopher. 1999. "Was James Madison Wrong? Rethinking the American Preference for Short, Framework-Oriented Constitutions." *American Political Science Review* (December): 837

Recommended:

Katz, Lawrence F., and Bruce D. Meyer. 1990. "Unemployment Insurance, Recall Expectations, and Unemployment Outcomes." *Quarterly Journal of Economics* 105(November):973-1002.

Bienen, Henry and Nicolas van de Walle. 1992. "A Proportional Hazard Model of Leadership Duration." *Journal of Politics* 54(August): 685-717.

Warwick, Paul. 1992. "Economic Trends and Government Survival in West European Parliamentary Democracies." *American Political Science Review* 86(December): 875-887.

Piskulich, C. Michelle. 1993. "Toward a Comprehensive Model of Welfare Exits: the Case of AFDC." *American Journal of Political Science* 37(February): 165-185.

Box-Steffensmeier, Janet. 1996. "A Dynamic Analysis of the Role of War Chests in Campaign Strategy." *American Journal of Political Science* 40(May): 352-371.

Katz, Jonathan N. and Brian R. Sala. 1996. "Careerism, Committee Assignments, and the Electoral Connection." *American Political Science Review* 90(March):21-33.

McCarty, Nolan and Rose Razaghian. 1999. "Advice and Consent: Senate Responses to Executive Branch Nominations." *American Journal of Political Science* 43(October): 1122-1143.

Chapter 2, Box-Steffensmeier & Jones: Semi-Parametric and Discrete-Time Models for Event History Data (Cox Models section).

Topic 4: Continuous-Time Models II: Parametric Models

Required:

Chapter 4, Blossfeld & Rohwer: Exponential Transition Rate Models

Chapter 6, Blossfeld & Rohwer: Exponential Models with Time-Dependent Covariates

Chapter 7, Blossfeld & Rohwer: Parametric Models of Time-Dependence

Bennett, D. Scott. 1998. "Integrating and Testing Models of Rivalry Duration." *American Journal of Political Science* 42 (October).

Recommended:

Bergstrom, R. and P.-A. Edin. 1992. "Time Aggregation and the Distributional

Shape of Unemployment Duration." *Journal of Applied Econometrics* 7(Jan-Mar): 5-30.

Warwick, Paul V. 1992. "Rising Hazards: An Underlying Dynamic of Parliamentary Government." *American Journal of Political Science* 36 (November): 857-876.

Bueno de Mesquita, Bruce and Randolph M. Siverson. 1995. "War and the Survival of Political Leaders : A Comparative Study of Regime Types and Political Accountability." *American Political Science Review* 89(December): 841-855.

Bennett, D. Scott and Allan C. Stam. 1996. "The Duration of Interstate Wars, 1816-1985." *American Political Science Review* 90(June): 239-257.

Bennett, D. Scott. 1997. "Measuring Rivalry Termination, 1816-1992." *Journal of Conflict Resolution* 41 (April).

Bennett, D. Scott. 1997. "Testing Alternative Models of Alliance Duration, 1816-1984." *American Journal of Political Science* 41 (July): 846-78.

Chapter 3, Box-Steffensmeier & Jones: Models for Event History Data (section on estimation).

Topic 5: Discrete-Time Models

Required:

Berry, Frances Stokes and William D. Berry. 1990. "State Lottery Adoptions As Policy Innovations: An Event History Analysis." *American Political Science Review* 84(June): 395-415.

Beck, Nathaniel, Jonathan N. Katz, and Richard Tucker. 1998. "Taking Time Seriously: Time-Series-Cross-Section Analysis with a Binary Dependent Variable." *American Journal of Political Science* 42(October): 1260-88.

Recommended:

Allison, Paul D. 1984. *Event History Models*. Sage Press.

Long, J. Scott, Paul D. Allison and Robert McGinnis. 1993. "Rank Advancement in Academic Careers: Sex Differences and the Effects of Productivity" *American Sociological Review* 58(October): 703-722.

Gasiorowski, Mark J. 1995. "Economic Crisis and Political Regime Change: An Event History Analysis." *American Political Science Review* 89 (December): 882-897.

Goertz, Gary and Paul F. Diehl. 1995. "The Initiation and Termination of Enduring Rivalries: The Impact of Political Shocks." *American Journal of Political Science* 39(February): 30-52.

Mooney, Christopher Z., and Mei-Hsien Lee. 1995. "Legislative Morality in the American States: The Case of Pre-*Roe* Abortion Reform." *American Journal of Political Science* 39(August): 599-627.

Mintrom, Michael. 1997. "Policy Entrepreneurs and the Diffusion of Innovation." *American Journal of Political Science* 41(July): 738-770.

Grattet, Ryken, Valerie Jenness and Theodore R. Curry. 1998. "The Homogenization And Differentiation of Hate Crime Law in the United States, 1978-1995: Innovation and Diffusion in the Criminalization of Bigotry." *American Sociological Review* 63(April): 286-307.

Dassel, Kurt and Eric Reinhardt. 1999. "Domestic Strife and the Initiation of Violence at Home and Abroad." *American Journal of Political Science* 43(January).

Werner, Suzanne. 1999. "The Precarious Nature of Peace: Resolving the Issues, Enforcing the Settlement, and Renegotiating the Terms." *American Journal of Political Science* 43(July): 912-934.

Chapter 2, Box-Steffensmeier & Jones: Semi-Parametric and Discrete-Time Models for Event History Data (Discrete-time section).

Topic 6: Model Selection, Assessment, Specification, & Diagnostic Methods for Event History Models

Duration Dependence

Required:

Bennett, D. Scott. 1999. "Parametric Models, Time-Dependence, and Time-Varying Data Revisited." *American Journal of Political Science* 43 (January).

Zorn, Christopher J.W. 2000. "Modeling Duration Dependence." *Political Analysis.*

Recommended:

Warwick, Paul and Stephen T. Easton. 1992. "The Cabinet Stability Controversy: New Perspectives on a Classic Problem." *American Journal of Political Science* 36 (February): 122-146.

Alt, James, and Gary King. 1994. "Transfers of Governmental Power: The Meaning of Time Dependence." *Comparative Political Studies* 27(2): 190-210.

Beck, Nathaniel, and Simon Jackman. 1998. "Beyond Linearity by Default: Generalized Additive Models." *American Journal of Political Science* 42 (April).

Clark, David H., and Robert A. Hart, Jr. 1998. "Controlling Duration Dependence in Conflict Analyses: A Replication and Extension of 'Regime Types and Status Quo Evaluations.'" *American Journal of Political Science* 42 (October).

Residual Analysis

Required:

Chapter 8, Blossfeld & Rohwer: Methods to Check Parametric Assumptions

Chapter 10, Blossfeld & Rohwer: Problems of Model Specification

Box-Steffensmeier, Janet M., and Christopher J. W. Zorn. "Duration Models and Proportional Hazards in Political Science." Presented at the 1998 Annual Meeting of the Midwest Political Science Association, Chicago.

Recommended:

Chapter 11, Klein, John P., and Marvin L. Moeschberger. 1997. *Statistics for Biology and Health.* New York: Springer-Verlag.

Chapter 4, Box-Steffensmeier & Jones: Model Selection, Assessment, Specification, and Diagnostic Methods for the Event History Model.

Topic 7: Methods and Models for Complicated Events

Heterogeneity and Multiple Events

Required :

Box-Steffensmeier, Janet M., and Christopher J.W. Zorn. "Modeling Heterogeneity in Duration Models." Presented at the 1999 Annual Meeting of the Political Methodology Society, College Station, Texas.

Diermeier, Daniel, and Randy T. Stevenson. 1999. "Cabinet Survival and Competing Risks." *American Journal of Political Science* (October).

Recommended:

Strang, David and Nancy Brandon Tuma. 1993. "Spatial and Temporal Heterogeneity in Diffusion." *American Journal of Sociology* 99(November): 614-639.

Chapter 5, Box-Steffensmeier & Jones: Methods and Models for Complicated Events (Heterogeneity and Multiple Events section).

Split-Population Models

Required :

Chung, Ching-Fan, Peter Schmidt, and Ann D. Witte. 1991. "Survival Analysis: A Survey." *Journal of Quantitative Criminology* 7(March):59-98.

Recommended:

Box-Steffensmeier, Janet M., and Peter Radcliffe. 1996. "Split-Population Survival Models: An Application to the Timing of PAC Contributions." Presented at the 1996 Annual Meeting of the American Political Science Association, San Francisco.

Hettinger, Virginia, and Christopher Zorn. 1999. "Signals, Models, and Congressional Overrides of the Supreme Court." Paper presented at the Annual Meeting of the Midwest Political Science Association, Chicago.

Sy, Judy P., and Jeremy G. Taylor. 1999. "Estimation in a Cox Proportional Hazards Cure Model." Typescript. University of Michigan.

Chapter 5, Box-Steffensmeier & Jones: Methods and Models for Complicated Events (Split-Population Model section).

Topic 8: Social Science and Event History

Required :

Chapter 6, Box-Steffensmeier & Jones: What Have We Learned and Where Are We Going?

Two Important Considerations (inserted here at request of OSU lawyers):

Academic Honesty. All of the work you do in this course is expected to be your own. Absolutely no cheating or plagiarism (using someone else's words or ideas without proper citation) will be tolerated. Any cases of cheating or plagiarism will be reported to the university committee on academic misconduct and handled according to university policy.

Disability. Students with disabilities are responsible for making their needs known to the instructor, and seeking available assistance, in a timely manner. Course materials are available in alternative formats upon request. For such materials please contact Mr. Wayne DeYoung, 2140 Derby Hall, 154 North Oval Mall, 292-2880.