SOCIOLOGY 8890 – EVENT HISTORY & PANEL METHODS

Spring 2012
11:45-2:15 Wednesdays, 1114 Social Science

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The events in our lives happen in a sequence in time, but in their significance to ourselves they find their own order: the continuous thread of revelation. – Eudora Welty

DESCRIPTION

This course is designed to help you develop a solid working knowledge of both event history analysis and panel data models. It would be ideal for students considering a dissertation using such techniques, but also appropriate for those who just want more hands-on experience with methodologies that have become increasingly popular in both scientific and policy work. Event methods are terrific when researchers want to predict whether and when something happens -- for example, wars, births, deaths, strikes, crimes, or job promotions. Using examples that take nations, states, and individuals as the units of analysis, we'll cover topics such as demographic life tables, survival and hazard analysis, competing risks, proportional hazards, and time-varying covariates. In the second half of the course, we'll bridge from the concept of time-varying predictors to panel models in which both the independent and dependent variables are changing over time. Here we'll cover lagged dependent variables, first differences, fixed and random effects, clustering, and other topics. The course will be pitched at a level that will make it accessible to anyone who has taken the sociology graduate statistics course (8811) or equivalent. We'll focus on the basics and learning to apply these basics well.

OBJECTIVES

1. The course will help you develop a more nuanced understanding of two important classes of quantitative research techniques in the social sciences. We’ll emphasize useful and powerful general tools, such as proportional hazards models for the analysis of events and fixed effects models for the analysis of panel data.

2. The seminar will provide support, encouragement, and an opportunity for you to make significant progress on one or more of your own research projects.

3. In using and explaining these models, you will sharpen your written and oral research presentation skills.

4. We will work through empirical pieces by some top sociological researchers. As you develop your own research, it is useful to see how others have translated propositions into testable hypotheses, devised appropriate methodologies to test them, and presented the results to diverse audiences.

5. The course will stimulate your thinking about research design and analysis more generally. This includes how we produce our knowledge, its meaning and relevance, and the utility of
various tools. Such big-picture considerations may help you to make creative research choices that are personally meaningful and professionally rewarding. I'll encourage you to articulate and develop your own research values, principles, and orientation to the field.

6. Finally, a graduate seminar should encourage your professional development as you make the transition from student to independent social scientist. I will share "backstage" information from the articles we read, including files, data sets, and other materials that may show you different facets of the research and publication process.

READINGS

3. You will also read some challenging research articles throughout the semester, but I’ve limited the number of required readings to just a few per week – emphasizing solid and accessible applications of the techniques we discuss, rather than the brilliant statistical innovations that brought us these techniques. I’ve put some of my own work on this syllabus—not because it is exemplary but to help us talk through concrete design considerations and research choices.

RECOMMENDED REFERENCES FOR YOUR SHELVES

We will dip into the following books this term, so you will get a chance to preview many different approaches to the subject. Those interested in developing practical expertise in the area should purchase and reference them (if not read them, stem to stern).


REQUIREMENTS

1. An original seminar project is required of all students. This may take the form of a research proposal or prospectus, a conference paper, a manuscript that you intend to submit for journal publication, or a write-up of your initial foray into a new area. Every student is starting in a different place, so I expect great variation in the sorts of projects that you produce. Do not waste your time on a paper that will only be used to meet course requirements. The seminar project should advance your own career and research agenda. A basic two-page brainstorming proposal is due on 2/13.
2. Presentation skills are increasingly important to social researchers. Every student will give two short (5-10 minute) powerpoint presentations, showing results of their event history (on 3/13) and panel data analysis (on 5/1). These are not a big part of your grade, but (in my humble opinion) truly essential to your professional success.
   a. Due on 3/13: slides for 5-10-minute talk and EHA write-up (no more than 5 pages):
• EHA research question(s) and data
• Results: Non-parametrics, “bivariate,” and multivariate (e.g., Cox, discrete-time, competing risk)
• Caveats and next steps to improve the analysis

b. Due on 5/1: slides for 5-10-minute longitudinal data talk and write-up (no more than 5 pages):
• Longitudinal research question(s) and data
• Results: present a basic cross-sectional model (e.g., OLS regression), a lagged dependent variable or difference model, and something beyond that (e.g., fixed and/or random effects; growth curve)
• Caveats and next steps to improve the analysis

3. Seminars are constructed in interaction. I will provide a brief setup at each meeting and try to provide an environment in which everyone feels comfortable participating, but responsibility for the seminar is borne collectively. This means that you must come to class prepared to discuss the readings (preferably with written comments and at least one question of your own) and to have considered how the course materials will affect your work. A rough guideline: everyone should speak at least once during each course meeting.

POLICIES

• Your course grade is determined by written work and seminar participation. I intend to weight participation at 20%, seminar projects at 60%, and presentations at 20% (10% each). Active seminar participation is a necessary but not sufficient condition to earning an “A” grade.
• You do not want an incomplete hanging over your head. In almost every case, it is better to turn in “work in progress” than to delay said progress by taking an incomplete.
• Teaching Philosophy (attached)
• Department Policies (attached)
• Software. We will stick to ever-improving Stata as much as possible in this course, though programs such as SAS, RATE, CTM, LIMDEP, R, and even good old’ SPSS do a nice job estimating many of these models. I have had great luck with SAS in my research life, but have been slowly making the transition to Stata.
• My training is in sociology rather than statistics and my goal is to help you become a better user of these techniques. But we are all still learning and I may not be able to answer every question that you may have. If I don’t know the answer and we can’t figure it out together, I pledge not to wave my hands and fabricate a seemingly-plausible-but-wrong answer.

TENTATIVE OUTLINE

1. 1/23 WELCOME and THE BIG PICTURE

“Every designers’ dirty little secret is that they copy other designers’ work. They see work they like, and they imitate it. Rather cheekily, they call this inspiration.”
— Aaron Russell

Introductions; Course logic; Requirements; Software

Keywords
Change; Events; Causality; Design; Becoming a responsible “user”

2. 1/30 EVENT HISTORY BASICS & NON-PARAMETRIC APPROACHES [628 OPEN]

“A designer can mull over complicated designs for months. Then suddenly the simple, elegant, beautiful solution occurs ... it feels as if God is talking! And maybe He is.” — Leo Frankowski
Keywords
Censoring and Truncation; Survival; Hazard distributions; Life tables; Kaplan-Meier

How To


A Clear Example

My Reference Point [not required]

3. 2/6 PARAMETRIC AND SEMI-PARAMETRIC MODELS

“Design is a plan for arranging elements in such a way as best to accomplish a particular purpose.” — Charles Eames

Keywords
Specifying baseline hazard (exponential, Weibull, log logistic, log normal, Gompertz); Assessing fit; Proportional hazards

How To
Box-Steffensmeier and Jones. Chapter 4. Pp. 47-68. The Cox Proportional Hazards Model.

A Clear Example (or Two)


My Reference Point [not required]

4. 2/13 A WHOLE FREAKING DAY ON DATA AND DESIGN [628 OPEN]

“Data is [are] sexy.” — Hans Rosling

Due: two-page brainstorming proposal, specifying the following:
 o Research questions
    Offer both an event history question and a panel data question
    e.g., Does inter-ethnic economic competition predict genocide? [an event]
- e.g., Does inter-ethnic economic competition predict inter-ethnic homicide? [changes in a level or rate]
  - Your data possibilities and needs
    - (1) Currently do-able; (2) do-able with effort; or (3) maybe after tenure?
    - e.g., I've got a list of genocides with dates and nations that I could connect with a publicly available 100-nation data set. [I'd call this a “2”]
  - Analytic approach
    - How will your design answer the question?
    - e.g., I should be able to do some basic non-parametric analysis and test bivariate relationships – I've got to think harder about ways to isolate the effects of economic competition from competing explanations. [Fair enough]
  - Likely Barriers
    - How far do you think you can get this semester?
    - e.g., I'd like to create basic survival and hazard plots and run some basic multivariate models, but I may not be able to chase down all the controls I'll need in 10 weeks.
    - What's your back-up plan for completing presentations and the seminar project?

Discussion: Setting up and analyzing person-period data

Keywords
Person-period data

5. 2/20 MULTIPLE EVENTS, COMPETING RISKS and MODEL SELECTION

“Truly elegant design incorporates top-notch functionality into a simple, uncluttered form.” — David Lewis

Keywords
Repeated events; Competing risks; Royston-Parmar

How To
Box-Steffensmeier and Jones, Chapter 6. Issues in Model Selection Pp. 85-94.
Box-Steffensmeier and Jones, Chapter 10. Models for Multiple Events Pp. 155-82.

A Clear Example (or Two)


My Reference Point [not required]

6. 2/27 TIME-VARYING COVARIATES / DISCRETE-TIME LOGITS [628 OPEN]

“Design is easy. All you do is stare at the screen until drops of blood form on your forehead.” — Marty Neumeier

Keywords
discrete-time; TVC (15):
7. 3/6 FROM TIME-VARYING COVARIATES TO PANEL DATA

“Our opportunity, as designers, is to learn how to handle the complexity, rather than shy away from it, and to realize that the big art of design is to make complicated things simple.” — Tim Parsey

Keywords
Regression review; Static-score; lags; differencing; GMM

How To

A Clear Example (or two)


My Reference Points [not required]


8. 3/13 CATCH-UP AND PRESENTATIONS [628 OPEN]

“Every designers’ dirty little secret is that they copy other designers’ work. They see work they like, and they imitate it. Rather cheekily, they call this inspiration.” — Aaron Russell

Due: slides for 5-10-minute talk and write-up (no more than 5 pages):

- EHA research question(s)
- Data
- Results: Non-parametric, “bivariate,” and multivariate
- Caveats and next steps to improve the analysis
9. 3/27 LINEAR FIXED EFFECTS MODELS [628 OPEN]

“The most innovative designers consciously reject the standard option box and cultivate an appetite for thinking wrong.” — Marty Neumeier

Keywords
LSDV; xtreg

How To

A Clear Example

My Reference Point [not required]

10. 4/3 FIXED EFFECTS MODELS II – TIME SERIES APPROACHES AND EVENTS

Keywords
Stationarity, balance

How To

A Clear Example (or two)


My Reference Point [not required]
The Contingent Effect of Incarceration on State Health Outcomes.

11. 4/10 FIXED EFFECTS LOGIT, COUNT, AND EVENT MODELS [628 OPEN]

“Design is where science and art break even.” — Robin Mathew

Keywords
GEE, Poisson, Negative Binomial

How To
Allison, Chapter 5. Fixed Effects for (Repeatable) Events, Pp. 70-86.
A Clear Example

12. 4/17 BRIDGING FROM FIXED EFFECTS TO STRUCTURAL EQUATIONS

“Design should never say, “Look at me.” It should always say, ‘Look at this.’” — David Craib

Keywords
Instrumental variables; MPlus; Latent variables

How To

A Clear Example

13. 4/24 BRIDGING TO MIXED AND MULTI-LEVEL APPROACHES [628 OPEN]

“Design is the application of intent - the opposite of happenstance, and an antidote to accident.” — Robert L. Peters

Keywords
Growth curve; Latent trajectory; Level-1 and Level-2

How To


14. 5/1 CATCH-UP AND PRESENTATIONS

“Good design is a renaissance attitude that combines technology, cognitive science, human need, and beauty to produce something that the world didn’t know it was missing.” — Paola Antonelli

Due: slides for 5-10-minute talk and write-up (no more than 5 pages):
- Longitudinal research question(s)
- Data
- Results: present a basic cross-sectional model (e.g., OLS regression), a lagged dependent variable or difference model, and a fixed or random effect model
- Caveats and next steps to improve the analysis
15. 5/8 LAST DAY! Let’s do lunch

“Design is not the narrow application of formal skills, it is a way of thinking.” — Chris Pullman

Due: projects

Want More? It was difficult to keep the reading list manageable, but I’ve got lots more recommendations for classic treatments and contemporary applications of these techniques.

UGGEN'S TEACHING GOALS AND PHILOSOPHY

1. **Respect for Students.**
   The other points are really a subset of this one. Education is a service industry, but you cannot simply purchase a unit of education the way you would buy other commodities. Instead, you must devote time and energy to learning. I respect those students who must make work, family, or other commitments their top priority. Nevertheless, to benefit from the class and to be rewarded with a high grade, you must find time to do the work.

2. **Procedural Justice or Fairness.**
   In my non-statistics classes, I typically grade exams and papers anonymously (by identification numbers rather than names) to avoid favoritism or other biases. Universal standards and strict deadlines are the best way I know to provide equal opportunities for all students.

3. **High Standards for Excellence.**
   I reserve grades of A for outstanding work that engages course materials with original thought and creativity or a mastery of technical skills. You can receive a B by doing all of the work well and a C by meeting all course requirements.

4. **Opportunities for Independent Work.**
   All must meet the basic requirements. For those wishing to engage the material at the highest level, I allow flexibility for more ambitious projects.

5. **Responsiveness and Accountability.**
   You will have the opportunity to evaluate me and to critique the course in time for me to make changes that will benefit you. If you think I have failed to live up to the principles or philosophies here listed, please let me know about it.

6. **Accessibility.**
   I will be available to you during office hours and flexible in scheduling appointments outside these hours (including nights and weekends).

7. **Openness to Diverse Perspectives.**
   Sharing your experiences and understandings (publicly or privately) enriches the course for your fellow students, especially when you disagree with me.

8. **Enthusiasm for the Subjects I Teach and for Teaching as a Vocation.**
   I cannot expect you to really engage the course materials if I am bored with them. Therefore, I will make every effort to make the texts, lectures, and assignments current, relevant, and intellectually engaging.

9. **Skills, Knowledge, and Attitudes.**
   I teach: (1) technical and life skills that will benefit you inside and outside of the classroom; (2) abstract and concrete knowledge about the social world; and, (3) attitudes promoting the free and good-humored exchange of ideas.
COLLEGE OF LIBERAL ARTS POLICY

GRADES: University academic achievement is graded under two systems: A-F (with pluses and minuses) and S-N. Choice of grading system and course level (1xxx/3xxx/4xxx) is indicated on the registration website; changes in grade scale may not be made after the second week of the semester. Some courses may be taken under only one system; limitations are identified in the course listings. The Department of Sociology requires A-F registration in courses required for the major/minor. University regulations prescribe the grades that will be reported on your transcript.

A Represents achievement that is outstanding relative to the level necessary to meet course requirements (4.00 grade points)
A- 3.67 grade points
B+ 3.33 grade points
B Achievement significantly above the level necessary to meet course requirements (3.00 grade points)
B- 2.67 grade points
C+ 2.33 grade points
C Achievement that meets the basic course requirements in every respect (2.00 grade points)
C- 1.67 grade points
D+ 1.33 grade points
D Achievement worthy of credit even though it fails to meet fully the course requirements (1.00 grade point)
F Performance that fails to meet the basic course requirements (0 grade points)
S Represents achievement that is satisfactory, which is equivalent to a C- or better.
N No credit. Its use is now restricted to students not earning an S on the S-N grade base
I Incomplete, a temporary symbol assigned when the instructor has a "reasonable expectation" that you 1) can successfully complete unfinished work on your own no later than one year from the last day of classes and 2) believes that legitimate reasons exist to justify extending the deadline for course completion. The instructor may set date conditions for make-up work. If a course is not completed as prescribed or not made up as agreed within the year, the I will lapse to an F if registered on the A-F grade base or an N if registered on the S-N grade base.
W Official withdrawal from a course after the end of the second week of the semester. You must file a course cancellation request before the end of the sixth week of the semester to ensure that the W, rather than the F, will be formerly entered on your record.

FINAL EXAMINATIONS (see Calendar web site at http://onestop.umn.edu/onestop/Calendars/FinalExams.html): You are required to take final examinations at the scheduled times. Under certain circumstances, however, you may request final examination schedule adjustment in your college office. Instructors are obligated to schedule make-up examinations within the final examination period for students who have three final examinations within a 16-hour period. Instructors also are encouraged to reschedule examinations for students with religious objections to taking an examination on a given day. You must submit your request for an adjustment in your schedule at least two weeks before the examination period begins. For assistance in resolving conflicts, call the CLA Student Information Office at 625-2020. If you miss a final, an F or N is recorded. You must obtain the instructor's permission to make up the examination. Final examinations may be rescheduled by the instructor only through the official procedure for that purpose (as noted on the above web page). Final examinations may not be scheduled for the last day of class or earlier or for Study Day. If an examination is rescheduled at the instructor's request, and you have an examination conflict because of it, you are entitled to be given the final examination at an alternative time within the regularly scheduled examination period for that semester.

CLASS ATTENDANCE: As a CLA student, you are responsible for attending class and for ascertaining the particular attendance requirements for each class or department. You should also learn each instructor's policies concerning make-up of work for absences. Instructors and students may consult the CLA Classroom, Grading, and Examination Procedures Handbook for more information on these policies (http://advisingtools.class.umn.edu/egep/).

COURSE PERFORMANCE AND GRADING: Instructors establish ground rules for their courses in conformity with their department policies and are expected to explain them at the first course meeting. This includes announcement of office hours and location, the kind of help to be expected from the instructor and teaching assistants, and tutorial services, if available. The instructor also describes the general nature of the course, the work expected, dates for examinations and paper submissions, and expectations for classroom participation and attendance. Instructors determine the standards for grading in their classes and will describe expectations, methods of evaluation, and factors that enter into grade determination. The special conditions under which an incomplete (I) might be awarded also should be established. The college does not permit you to submit extra work to raise your grade unless all students in the class are afforded the same opportunity.

CLASSROOM BEHAVIOR: You are entitled to a good learning environment in the classroom. Students whose behavior is disruptive either to the instructor or to other students will be asked to leave (the policies regarding student conduct are outlined in the CLA Classroom, Grading, and Examination Procedures on-line at http://advisingtools.class.umn.edu/egep/).

ELECTRONIC DEVICES: University instructors may restrict or prohibit the use of personal electronic devices in his or her classroom, lab, or any other instructional setting. For the complete policy, visit: http://www.policy.umn.edu/Policies/Education/Education/CLASSROOMPED.html

SCHOLASTIC CONDUCT: The University Student Conduct Code defines scholastic dishonesty as follows: Scholastic Dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain
dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. Students cannot evade (intentionally or unintentionally) a grade sanction by withdrawing from a course before or after the misconduct charge is reported. This also applies to late withdrawals, including discretionary late cancellation (also known as the "one-time-only drop"). For the complete policy, visit: http://www1.umn.edu/regents/policies/academic/Student_Conduct_Code.pdf

STUDENT MENTAL HEALTH AND STRESS MANAGEMENT: As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student’s ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via http://www.mentalhealth.umn.edu/.

A REMINDER OF RELEVANT POLICIES AND PROCEDURES

* SOCIOLOGY DEPARTMENT POLICIES *

GRADE INFORMATION: Grades are due in the Office the Registrar within 3 business days after the final examination. No information regarding grades will be released by the department office staff to anyone except designated personnel in Records and college offices. Students may access their own grades through their computer account. They may do this by following the directions on the One Stop web site at http://onestop.umn.edu/.

INCOMPLETES: It is the instructor’s responsibility to specify conditions under which an Incomplete (I) grade is assigned. Students should refer to the course syllabus and talk with the instructor as early as possible if they anticipate not completing the course work. Coursework submitted after the final examination will generally be evaluated down unless prior arrangements are made in writing by the instructor. University policy states that if completion of the work requires the student to attend class in substantial part a second time, assigning an “I” grade is NOT appropriate. Incompletes are appropriate only if the student can make up the coursework independently with the same professor.

MAKE-UP EXAMINATIONS: Arrangements for special examinations must be made directly with the instructor who taught the course and who is responsible for approving and supervising the examination or making individual arrangements. Circumstances for missing an exam include, but are not necessarily limited to: verified illness, participation in athletic events or other group activities sponsored by the University, serious family emergencies, subpoenas, jury duty, military service, and religious observances. It is the responsibility of the student to notify faculty members of such circumstances as far in advance as possible.

GRADE CHANGES: Grades properly arrived at are not subject to renegotiation unless all students in the class have similar opportunities. Students have the right to check for possible clerical errors in the assignment of grades by checking with the instructor and/or teaching assistant. Students with justifiable complaints about grades or classroom procedures have recourse through well-established grievance procedures. You are expected to confer first with the course instructor. If no satisfactory solution is reached, the complaint should be presented in writing to the department associate chair and/or the department academic advisor (909 Soc Sci). If these informal processes fail to reach a satisfactory resolution, other formal procedures for hearing and appeal can be invoked. See the departmental advisor in 923 Social Sciences to explore options.

DISABILITY SERVICES: Students with disabilities that affect their ability to participate fully in class or to meet all course requirements are encouraged to bring this to the attention of the instructor so that appropriate accommodations can be arranged. For more info contact Disabilities Services in 230 McNamara.

SEXUAL HARASSMENT: University policy prohibits sexual harassment as defined in the December 1998 policy statement, available at the Office of Equal Opportunity and Affirmative Action. Questions or concerns about sexual harassment should be directed to this office in 419 Morrill Hall.

SOCIOLOGY PROGRAMS INFORMATION: The Sociology Department offers two options for the Bachelor of Arts degree and a Bachelor of Science degree. We also have an Honors Program. Students interested in majoring in Sociology should attend an information meeting about the major. Meetings are held about once a week. Sign up for a meeting in 909 Social Sciences. Further information can be obtained from the following persons and offices:

General information, Sociology Department, 909 Social Sciences - 624-4300
Coordinator of Undergraduate Advising, Bobby Bryant, 923 Social Sciences – 624-4300
Director of Undergraduate Studies, Professor Teresa Swartz, 1172 Social Sciences - 624-2310
Sociology Honors Advisor, Professor Joachim Savelsberg, 948 Social Sciences - 624-3343
Director of Graduate Studies, Professor Ann Meier, 1074 Social Sciences – 624-9828 and/or Graduate Program Associate, Becky Drasin, 931 Social Sciences - 624-2093