

## GVPT 828B

Fall 2006  
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Tydings 2126E, x54151

### Seminar in Conducting Research

This is an interdisciplinary methods seminar. The focus of this seminar will be to hone skills in conducting quantitative research. It is designed for students who already have quantitative skills and want to further them for their dissertation research and beyond. Each student will be expected to write a paper using quantitative techniques and will also be expected to write critiques of papers that use these techniques.

This is NOT a statistics course, although we shall look at several statistical techniques. It is NOT a research design course, although we shall spend considerable time evaluating research designs. It is NOT a literature course, though we shall spend time looking at what makes a good article and what makes a bad article.

The course IS a tour of the research experience, from start to finish. Where do you get ideas? How can you tell the difference between an idea worth following up and one that is not worth the effort? (I assume that all ideas are good rather than bad, but that some are worth more time than others.) How do you link your ideas to a set of data? Where do you go to get data? At what point does your research design begin to look both worth doing and feasible? At what point does your research design begin to look like it makes sense? We'll read articles submitted for publication and we'll write reviews of manuscripts to see which ones should be published and which ones should not be published.

We shall begin with an overview of methodology in the social sciences—starting with issues of data quality and academic integrity—as well as what constitutes scientific inquiry. We shall consider in some depth whether scientific claims must be testable with quantitative methods—comparing the arguments in King, Keohane, and Verba, Designing Social Inquiry, with those in the critical volume, Brady and Collier's Rethinking Social Inquiry. Do unorthodox techniques have a place in scientific or social scientific investigations? Does an article with impeccable methods constitute better science than a case study? What are the dangers in quantitative research? Are there advantages in qualitative research? Can the two traditions speak to each other? Are the criteria for evaluating quantitative and qualitative research designs similar or fundamentally different?

We shall also look at several statistical techniques and see how they work in practice:

- 1) problems in OLS--multicollinearity, outliers, heteroskedasticity--how to detect them and what (if anything) you can do about them.
- 2) probit and logit--when to use them and why use them? how to calculate meaningful measures of impact from probit and logit. how to evaluate goodness of fit in probit/logit.

Probit/logit: Does it matter? Variations on probit/logit: ordered probit/logit, conditional probit/logit, multinomial logit, Tobit, events count techniques (Poisson and negative binomial regressions).

3) factor analysis--when to use it and when to avoid it.

When we read papers that have been submitted for publication, we shall look at both the theoretical development and the use of statistical techniques. What assumptions do we make when we use commonly employed techniques such as regression analysis? What happens when we violate these assumptions? What alternatives to ordinary least squares are there, and when do we have to use them and when can we stick with ordinary least squares?

All data analysis will be conducted using STATA.

Each student will be expected to complete two manuscript reviews (10 percent of the grade), provide written critiques of the initial research designs of two other seminar members and written critiques of the final paper of two other seminar members (20 percent of the grade), write a short research design for the Mearsheimer-Walt paper on the Israel lobby and U.S. foreign policy (10 percent), and write a paper using a data set you have developed (50 percent of the grade). The statistical analyses will be performed using data sets that you have developed on your own as well as data sets that I shall provide. For each week we consider topics in statistics, there will be an exercise in data analysis using the technique for that week. You can either use the data set that I provide or your own data for these exercises (if you choose the latter, you will have to construct an example yourself). Each participant is expected to prepare an exercise for class discussion for one of the statistical topics beginning in week 5 (10 percent of your grade).

*Each student is expected to select a data set, either of their own or data gathered by someone else to use for the seminar paper. If you don't have your own data set and do not have another data set, please see me and we shall find data that fit your interests.*

On September 24, each student will submit a short (3-5 page) statement of their research design for the course. In this first statement, you should outline your major hypothesis, suggest why it is important, and indicate what data you will use to test it. By October 10, each seminar member will present a longer statement of his/her research design (about 10 pages) outlining his/her hypothesis and develop the theoretical focus in greater detail, as well as indicating again the data source and also the statistical tests to be employed.

On October 10 and 17, students will present their research designs for the course paper (10 percent of the grade)—making a presentation of approximately 10 minutes with 5 minutes of comments from seminar members. The last two classes (**November 28, December 5, and December 12**) will be devoted to presentations of the final papers. **The final paper will be due no later than December 19 at noon in my office.**

When we discuss statistical topics, I shall take the lead and lecture and present data about the topic for half of the class period. Then the first half of the NEXT class will be devoted to student data presentations.

Required books:

King, Keohane, and Verba, Designing Social Inquiry (Princeton, paper), henceforth KKV  
Brady and Collier, Rethinking Social Inquiry (Rowman & Littlefield, paper)  
Long and Freese, Regression Models for Categorical Dependent Variables Using STATA  
(Stata Press, paper)  
Berry and Feldman, Multiple Regression in Practice (Sage, paper)  
Fox, Regression Diagnostics (Sage, paper)  
Kim and Mueller, Factor Analysis (Sage, paper)  
Goodman, Intuition (Dial Press)

Allegra Goodman's best selling Intuition is a novel about scientific fraud. We shall consider the issue of fraud and the need for replication later in the semester. Since Goodman's novel is fairly long, you should begin reading it at your leisure as soon as possible.

Articles marked by an asterisk will be available as part of a zipped file on my web site.

## Topic

1 The Nature of Social Science Research: Where Ideas Come From and How to Judge Results

9/5 KKV, chs. 1-3.

**Assignment for 9/12: Write a short (no more than 5 pages) research design on how to evaluate the claims in the paper "The Israel Lobby and U.S. Foreign Policy" by John J. Mearsheimer and Stephen M. Walt, available at [http://ksgnotes1.harvard.edu/Research/wpaper.nsf/rwp/RWP06-011/\\$File/rwp\\_06\\_011\\_walt.pdf](http://ksgnotes1.harvard.edu/Research/wpaper.nsf/rwp/RWP06-011/$File/rwp_06_011_walt.pdf). Evaluate their arguments in terms of social science methodology—including issues of measurement, hypothesis testing, and the evidence presented. How might this study be formulated as a quantitative research design? Be prepared to discuss your paper in class on 9/12.**

2 Data Sources, Data Quality, Measurement, and Presentation of Results

9/12 Floyd Norris, "Market Place," New York Times (January 22, 1998), D11.  
Boyce Rensberger, "An Extraterrestrial Link: Sunspots and Life Span," Washington Post (May 24, 1993), A3.  
Kenneth Chang, "On Scientific Fakery and the Systems to Catch It," New York Times (October 15, 2002)  
George Johnson, "At Lawrence Berkeley, Physicists Say a Colleague Took Them for a Ride," New York Times (October 15, 2002)  
Jane E. Brody, "Separating Gold from Junk in Medical Studies," New York Times (October 22, 2002)

KKV, chs. 4-6.  
Brady and Collier, chs. 1-2

**Short statement of research design due in class.**

3 The Challenge to Quantitative Research

**9/19** Brady and Collier, chs. 3-6, 9.  
\*Shalev, "Limits and Alternatives to Multiple Regression in Quantitative Research"

4 Review of Stata and Discussion on How to Organize a Publishable Paper

Long and Freese, Regression Models for Categorical Dependent Variables Using STATA, chs. 1-2.

\*King, "Publication, Publication" (to be distributed as PDF).

**No written assignment, but come to class prepared to discuss the article by Bella DePaulo, "Sex and the Single Voter." Use the 1996 ANES on the course web site (or any other ANES data set you have access to) to investigate her claims. What are the strengths and weaknesses of her argument?**

**9/24** Brady and Collier, chs. 10-13

5 Problems with Ordinary Least Squares

**10/3 Seminar meets in OACS Lab 1 Tydings Hall**

Berry and Feldman, entire

KKV, 122-124.

Fox, 10-40, 49-53

Peter Lange and Geoffrey Garrett, "The Politics of Growth: Strategic Interaction and Economic Performance in the Advanced Industrial Democracies, 1974-1990," Journal of Politics, 47 (1985):792-827.

Robert W. Jackman, "The Politics of Economic Growth in the Industrial Democracies," Journal of Politics, 49 (1987):231-241.

Lange and Garrett, "The Politics of Growth Reconsidered," Journal of Politics, 49 (1987): 257-274.

George W. Downs and David M. Roche, "Interpreting Heteroskedasticity," American Journal of Political Science, 23 (1979):816-828.

Richard Williams, "Outliers" (on course web page)

Robert A. Yaffee, "Robust Regression Modelling With Stata" (on course web page)

\*UCLA Regression With Stata, uclaregressionwithstata.doc

**For week 5: Perform a regression analysis of variables of your choice from either**

**your own data set or one of the data sets on the course home page. Then test for collinearity and homoskedasticity. What do you find?**

**Longer statement of research design due in class and e-mailed to your commentators at least three days before class.**

6-7 Presentations of research designs

**10/10-17 Seminar meets in OACS Lab 4 Tydings Hall October 10  
Seminar meets in OACS Lab 1 Tydings Hall October 17**

Each seminar member will have 10 minutes to present their initial research design and two seminar members will have 5 minutes each to present a critique, which must be in writing (and will be graded).

8 Probit and Logit Models

**10/24 Seminar meets in OACS Lab 1 Tydings Hall**

Long and Freese, Regression Models for Categorical Dependent Variables Using STATA, chs. 4-5.

John H. Aldrich and Charles F. Cnudde, "Probing the Bounds of Conventional Wisdom," American Journal of Political Science, 19 (1975):571-608.

Steven J. Rosenstone and Raymond Wolfinger, "The Effect of Registration Laws on Voter Turnout," American Political Science Review, 72 (1978):22-45.

**For week 6: Using the 1996 ANES, select the feeling thermometer for Democrats (demtherm) and select variables of your choice to explain feelings for the Democratic party running a regression. Then use the dichotomized thermometer demthermdum and run a regression, a probit, and a logit. Compare the three with the initial regression for the full thermometer.**

9 Advanced Topics in Probit/Logit and Sample Selection Models

**10/31 Seminar meets in OACS Lab 1 Tydings Hall**

Long and Freese, Regression Models for Categorical Dependent Variables Using STATA, chs. 6, 8.

Guy Whitten and Harvey Palmer, "Heightening Comparativists Concern for Model Choice-Voting Behavior in Great Britain and the Netherlands," American Journal of Political Science, 40 (1996): 231-260.

R. Michael Alvarez and Jonathan Nagler, "When Politics and Models Collide: Estimating Models of Multiparty Elections," American Journal of Political Science, 42 (1998):55-96.

Kevin B. Grier, Michael C. Munger, and Brian E. Roberts, "The Determinants of Industry Political Activity, 1978-1986," American Political Science Review, 88 (1994): 911-926.

Jonathan S. Krasno, Donald Phillip Green, and Jonathan Cowden, "The Dynamics of Campaign Fundraising in House Elections," Journal of Politics, 56 (1994):459-474.

**Write review of anonymous article: "Social Capital and Government Performance in Large American Cities"**

**For week 7: Select variables of your choice and run two or more models using ANY of the techniques we discussed this week—and compare the estimates.**

10 Factor Analysis

**11/7 Seminar meets in OACS Lab 4 Tydings Hall**

Kim and Mueller, entire

Herbert F. Weisberg, "Dimensionland: An Excursion into Spaces," American Journal of Political Science, 18 (1974):743-776.

11 Scientific Fraud and Replication

**11/14** Goodman, Intuition, entire

\*Kelves, "The Assault on David Baltimore"

\*Dobbs, Wade, Kolata, and Bosman in scientificfraud.doc

Questions for discussion in class: Is scientific fraud only of concern to hard scientists? Can there be scientific fraud in political science? How do we determine scientific fraud in political science? Does group work in the hard sciences make it easier or more difficult to commit—and to expose—scientific fraud? Does the need to do funded research lead to more scientific fraud? Do you believe that Cliff Banneker committed scientific fraud? Was Robin Decker an honorable whistleblower or a jealous junior scientist whose own ideas were not leading to a distinguished scientific career? What would you do in her place?

12 Replication and The Peer Review Process

**11/21** Shaw, "The Methods Behind the Madness: Presidential Electoral College Strategies, 1988-1996," Journal of Politics, 61 (1999):893-913.

Shaw, "Erratum for 'The Methods behind the Madness'," Journal of Politics, 66 (2004): 611-615.

Reeves, Chen, and Nagano, "A Reassessment of 'The Methods Behind the Madness: Presidential Electoral College Strategies, 1988-1996'," Journal of Politics, 66

(2004): 616-620.

King, "Replication, Replication," PS: Political Science and Politics, 28 (1995): 442-452; at <http://gking.harvard.edu/files/replication.pdf>

\*Herrnson, "Replication, Verification, Secondary Analysis, and Data Collection in Political Science," PS: Political Science and Politics, 28 (1995): 452-455.

\*Sniderman, "Evaluation Standards for a Slow-Moving Science," PS: Political Science and Politics, 28 (1995): 464-467.

Is replication a solution to the problem of scientific fraud? What are the benefits and weaknesses of replication?

### The Peer Review Process

\*Kaplan, van Rooyen et al., Sweitzer and Cullen, Berezin, and Lock in peerreview.doc

\*Campanario, "Have Referees Rejected Some of the Most-Cited Articles of All Time?"

\*Starbuck, "Turning Lemons into Lemonade: Where Is the Value of Peer Review?"

\* Bedeian, "The Manuscript Review Process"

**Write review of anonymous article: "Ethnic Minority Interest Group Attributes and Foreign Policy Influence"**

13-15 Paper presentations

**11/28, 12/5, 12/12 Seminar meets in OACS Lab 1 Tydings Hall**

Each seminar member will have 15 minutes to present their final papers and two seminar members will have 7 minutes each to present a critique, which must be in writing (and will be graded), followed by about 10 minutes of general discussion. **Each paper must be sent by e-mail to discussants at least 5 days before the presentation.**