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gess empirical and quantitative methods graduate school of economic & social sciences

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Research Design
Spring 2010
Time **Wednesday, 8:30 – 10:00**
Place **B 6, A 1.03**
Office Hours **Wed. 10:00 – 11:00**

- Description: Quick-and-dirty number-crunching 'quantoids' face them. Carefully describing and interpreting 'smooshes' face them. No matter where they stand on ontological and epistemological grounds and how we stereotype the respective 'other side', all researchers face similar challenges posed to core issues of research design. A **research design** is a plan that specifies how you plan to carry out a research project and, particularly, how you expect to use your evidence to answer your research question.

The goal of this course is twofold. First, it should to provide an overview about the universe of potential research designs for causal inference and their advantages and disadvantages. Second, this course should enable students to see the trade-offs involved in choosing a particular research design in their research projects. Consequently students are expected to have some own ideas about potential research questions to be able to actively participate in those seminar-style meetings that are organized within this lecture course.

Requirements: There are two different requirements for this course.

1. Prepare the readings in advance so that you can come to class with particular questions in mind. You will learn primarily by reading and then discussing that material with your instructor and classmates. The more actively you participate in the discussions the easier it will be to comprehend the new material and the more fun we will have working on this together. The **readings** will be provided by email well in advance. I will reserve the right to request written reaction papers about the content of the readings if it proves necessary to ensure a minimal working knowledge of substance covered in the readings.
2. I expect you to come up with a research question and write a first Version of a short draft research proposal through which you can demonstrate your competence in rigorously applying the issues that were taken up in this course to the design of a

potential (Master or PhD) research project that will answer your research question. Since this should be an exercise that might be of help later on I suggest emphasizing methods and data more than the relevance of the research question (which generally leads to long literature review and a substantive defense of the problem's importance). For this class I will be looking for a project that is well defined and feasible as well as methodologically sound. Consider the **draft proposal** (10 pages) as a take-home exam that is **due 9 June 2010**. Submit it no later than 10 am as a hard-copy (Room 301/302 in D 7, 27).

Extra Credit: Besides reading and discussing the material, an effective way to gain sensitivity for those research design issues is to try to replicate an existing article. I suggest choosing an article that caught your interest while searching for a topic. Make sure you can get hold of the data early on. A brief **replication report** (2-3 pages) about your success in replicating a study together with your results can be submitted anytime during the semester but no later than **9 June 2010**.

17 February **Introduction**

24 February **Core Issues of Research Design**

1) In the introduction of Gschwend/Schimmelfennig (2007) there is a 2x2-typology of research designs on page 14. Can you come up with exemplary research questions that would fit in each of these four cells?

2) Do you believe KKV mantra that for all types of research design there is the same underlying logic of inference?

3) What are "observable implications" of a theory? Provide an example.

- King, Gary; Robert Owen Keohane, and Sidney Verba. 1994. "The Science in Social Science." In *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton: Princeton University Press.
- Gschwend, Thomas, and Frank Schimmelfennig. 2007. "Introduction: Designing Research in Political Science-A Dialogue." In *Research Design in Political Science: How to practice What They Preach?* Ed. Thomas Gschwend and Frank Schimmelfennig. Houndmills: Palgrave MacMillan, 3-33.
- De Vaus, David. 2001. *Research Design in Social Research*. Thousand Oaks, CA: Sage, chapter 1.

3 March **Conceptualization and Measurement**

1) Do you have an example ready of a fuzzy concept? Any idea on how to specify it further to improve it?

2) Make up an example on an unreliable measure with high validity.

- Wonka, Arndt. 2007. "Concept Specification in Political Science Research." In *Research Design in Political Science: How to Practice What They Preach?* Ed. Thomas Gschwend and Frank Schimmelfennig. Houndmills: Palgrave MacMillan, 41-61.
- Miller, Bernhard. 2007. "Making Measures Capture Concepts: Tools for Securing Correspondence between Theoretical Ideas and Observations." In *Research Design in Political Science: How to Practice What They Preach?* Ed. Thomas Gschwend and Frank Schimmelfennig. Houndmills: Palgrave MacMillan, 83-102.
- De Vaus, David. 2001. *Research Design in Social Research*. Thousand Oaks, CA: Sage, chapter 2.

10 March **Case Selection**

1) What are KKV's guidelines for case-selection?

2) What is the problem with selection on the dependent variable?

3) Do you agree with Ebbinghaus' warnings of a "Lets-take-what-we-can-get" approach to case selection?

- Ebbinghaus, Bernhard. 2005. "When Less is More." *International Sociology* 20(2): 133-152.
- King et al. 1994. "Determining What to Observe." In *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Ed. Gary King, Robert Owen Keohane and Sidney Verba. Princeton: Princeton University Press, 115-149.
- Collier, David; James Mahoney, and Jason Seawright. 2004. "Claiming Too Much: Warnings about Selection Bias." In *Rethinking Social Inquiry: Diverse tools, Shared Standards.* Ed. Henry E. Brady and David Collier. Lanham: Rowman & Littlefield, 85-102.

17 March **Statistical Control**

1) What is the logic of statistical control within a quantitative research design?

2) Is the logic the same for factor-centric and outcome-centric research designs?

- Clarke, Kevin A. 2005. "The Phantom Menace: Omitted Variable Bias in Econometric Research." *Conflict Management and Peace Science* 22(4): 341-352.
- Sieberer, Ulrich. 2007. "Selecting Independent Variables: Competing Recommendations for Factor-Centric and Outcome-

Centric Research Designs." In *Research Design in Political Science: How to Practice What They Preach?* Ed. Thomas Gschwend and Frank Schimmelfennig. Houndmills: Palgrave MacMillan, 163-182.

24 March **Causal Inference**

1) How do we have to design our research project to be able to establish that an independent variable indeed causes our dependent variable?

2) In what sense do different conceptions of causality differ from one another and what are the consequences in terms of research design?

- King, Gary; Robert Owen Keohane, and Sidney Verba. 1994. "Causality and Causal Inference." In *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton: Princeton University Press, 75-91.
- Goldthorpe, John H. 2001. "Causation, Statistics and Sociology." *European Sociological Review* 17(1), 1-20.
- Freese, Jeremy. 2007. "Replication Standards for Quantitative Social Science. Why not Sociology?" Sociological Methods & Research 36(2), 153-172.

Easter Recess ***No class***

14 April **Causal Inference with Observational Data**

1) What is the problem for causal inference with non-experimental data?

2) Which potential solutions are out there?

- Nichols, Austin. 2007. "Causal Inference with Observational Data." *The Stata Journal* 7(4): 507-541.
- De Vaus, David. 2001. "Causation and the Logic of Research Design." In *Research Design in Social Research*. Ed. David De Vaus. Thousand Oaks, CA: Sage, 34-52.
- Winship, Christopher, and Stephen L. Morgan. 1999. "The Estimation of Causal Effects from Observational Data." *Annual Rev. Sociol.* 25: 659-706.

21 April **Replication & Publication**

- King, Gary. 1995. "Replication, Replication." *Political Science and Politics* 28(September): 444-452.

- King, Gary. 2006. "Publication, Publication." *Political Science and Politics* 39(January): 119-125.
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28 April **Causal Inference in Case Studies**

1) Can causal inferences in factor-centric and outcome-centric case studies be approached by the same logic?

- Dür, Andreas. 2007. "Discriminating among Rival Explanations: Some Tools for Small-n Researchers." In *Research Design in Political Science: How to Practice What They Preach?* Ed. Thomas Gschwend and Frank Schimmelfennig. Houndmills: Palgrave MacMillan, 183-200.
- Gerring, John, and Rose McDermott. 2007." An Experimental Template for Case Study Research." *American Journal of Political Science* 51(3): 688-701.
- Sekhon, Jasjeet S. 2004. "Quality Meets Quantity: Case Studies, Conditional Probability and Counterfactuals." *Perspectives of Politics* 2(2): 281-293.

5 May **Narratives and Case Study Design**

1) What are strengths and weaknesses of case study research design?
2) In what sense can analytic narratives ameliorate a given case study design?

- Bates, Robert H., Avner Greif, Margaret Levi, Jean-Laurent Rosenthal, and Barry R. Weingast.1998. "Introduction." In *Analytic Narratives*. Princeton: Princeton University Press, 3-22.
- George, Alexander L., and Andrew Bennett. 2005. *Case Studies and Theory Development in the Social Sciences*. MIT Press, Cambridge Massachusetts, Chapter 10, 205-232.
- Gerring, John. 2004. "What Is a Case Study and What Is It Good for?" *American Political Science Review* 98(2): 341-354.

12 May **Nested Analysis**

1) Is Nested Analysis a panacea for all research design problems?

2) If not, under what conditions and for what type of problems is it a reasonable addition to our toolbox?

- Lieberman, Evan S. 2005. "Nested Analysis as a Mixed-Method Strategy for Comparative Research." *American Political Science Review* 99(3): 435-452.
- Rohlfing, Ingo. 2008. "What You See and What You Get – Pitfalls

and Principles of Nested Analysis in Comparative Research." *Comparative Political Studies* 41(11): 1492-1514.
- Seawright, Jason, and John Gerring. 2008. "Case Selection Techniques in Case Study Research." *Political Research Quarterly* 61(2): 294-308.

19 May **Experiments**

1) What is the difference between these traditions McDermott is talking about?

2) Should we care about external validity?

3) For what type of questions would you design an experiment?

- McDermott, Rose. 2002. "Experimental Methodology in Political Science." *Political Analysis* 10(4): 325-342.
- Mook, Douglas G. 1983. "In Defense of External Invalidity". *American Psychologist* 38, 379-387.
- Sniderman, Paul M., and Douglas B. Grob. 1996. "Innovations in Experimental Design in Attitude Surveys." *Annual Review of Sociology* 22, 377-399.
- Rutchick, Abraham M. 2010. "Deus Ex Machina: The Influence of Polling Place on Voting Behavior." *Political Psychology* 31(2), 210-225.

26 May **Simulation**

1) Be prepared to come up with a potential example of how you might employ a simulation methodology as part of a research design for your hypothetical master thesis.

- Benoit, Kenneth. 2001. "Simulation Methodologies for Political Scientists." *Political Methodologist* 10(1), 12-16.
- Cederman, Lars-Erik. 2001. "Simulation Methodologies for Political Scientists*." Political Methodologist* 10(1), 16-22.
- Clough, Emily. 2001. "Computational Modeling from a Graduate Student Perspective." *Political Methodologist* 10(1), 26-28.
- Taber, Charles S. 2001. "Of Spells, Potions and Computational Social Science." *Political Methodologist* 10(1), 23-26.

Moreover, sociologist should read in addition the Macy/Willer review article while polisci students should read the De Marchi/Page chapter.

- Macy, Michael M., and Robert Willer. 2002. "From Factors to Actors: Computational Sociology and Agent-Based Modeling." *Annual Review of Sociology* 28, 143-146.

- De Marchi, Scott, and Scott E. Page. 2008. “Agent-Based Modeling.” In The Oxford Handbook of Political Science. Ed. Janet M. Box-Steffensmeier, Henry E. Brady and David Collier. New York: Oxford University Press, 71-94.

2 June **Semester Wrap-up**