Strategies of causal analysis and comparative research designs
(14335.0700 / 14335.5017)

Thursdays, 12:00-13:30

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module: 1335SMPo02 (Forschungsprojekt)
first session: 12.10.17
last session: 01.02.18
room: Gottfried-Keller-Str. 6, EG, no. 0.06

Please also regularly check the CCCP information on teaching:
http://www.cccp.uni-koeln.de/en/public/teaching/

The course introduces participants to the more recent debate about causal analysis and inference in the social sciences. 'Causal inference' means that we infer the presence of a causal relation based on an empirical association between events. We observe that smokers have an increased risk of catching lung cancer. How can we know that it is smoking that causes lung cancer and not something else? Throughout modern history, two democracies have never fought each other. Is it because they are democratic?

To get an understanding of what it requires to answer such questions, we first discuss a small number of fundamental issues on causation and causal inference. We introduce the distinction between inference and explanation, and effects and mechanisms. In the next step, we distinguish multiple theories of causation trying to establish criteria that should help in separating the causal empirical associations from the non-causal ones. In the first part, we briefly discuss the meaning of 'identification' and its role for theory-formation research design. In the second part, we consider research designs and what is called "empirical strategies" for enhanced causal inference. We will mainly focus on natural experiments and quasi-experiments (regression-discontinuity designs, instrumental variables, differences-in-differences).

Throughout the course, we will look at different empirical studies using one of these designs and discuss their strengths and weaknesses.

Topics and readings

Part 1: Fundamentals of causation

12.10.17: Causation in political science: What is at stake

- Przeworski, Adam (2007): Is the science of comparative politics possible? Boix, Carles and Susan C. Stokes (ed.): *Oxford handbook of comparative politics*. Oxford: Oxford University Press: 147-171.
- Angrist, Joshua D. and Jörn-Steffen Pischke (2009): *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton: Princeton University Press: chap. 1.
- Pomeranz, Dina (2017): *Impact evaluation methods in public economics*. working paper.

19.10.17: Effects, mechanisms and explanation

- Brady, Henry A. (2008): Causation and explanation in social science. Box-Steffensmeier, Janet M., Henry Brady and David Collier (ed.): *The Oxford handbook of political methodology*. Oxford: Oxford University Press: 217-270.
- Hedström, Peter and Petri Ylikoski (2010): Causal mechanisms in the social sciences. *Annual Review of Sociology* 36 (1): 49-67.

26.10.17: A pluralistic view and a challenging view

- Johnson, R. Burke, Federica Russo and Judith Schoonenboom (2017): Causation in mixed methods research: The meeting of philosophy, science, and practice. *Journal of Mixed Methods Research* forthcoming.
- Ragin, Charles C. (1997): Turning the Tables: How Case-Oriented Research Challenges Variable-Oriented Research. *Comparative Social Research* 16: 27-42.

02.11.17: Discussion of participants' designs

- no readings

09.11.17: Modern causal inference: Experiments and equivalents

- Cook, Thomas D. and Vivian C. Wong (2008): Better quasi-experimental practice. Alasuutari, Pertti, Leonard Bickman and Julia Brannen (ed.): *The sage handbook of social research methods*. Thousand Oaks: Sage: 134-165.
- Morton, Rebecca B. and Kenneth C. Williams (2010): *Experimental Political Science and the Study of Causality: From Nature to the Lab*. Cambridge: Cambridge University Press: chap. 1.

Part 2: Natural experiments

16.11.17: Natural experiments: Intro

- Dunning, Thad (2008): *Natural experiments in the social sciences: A design-based approach*. Cambridge: Cambridge University Press: chap. 1, 8, 9.

23.11.17: Natural experiments: Examples

- Cesarini, David, Magnus Johannesson and Sven Oskarsson (2014): Pre-birth factors, post-birth factors, and voting: Evidence from Swedish adoption data. *American Political Science Review* 108 (1): 71-87.

- Bhavnani, Rikhil R. (2009): Do electoral quotas work after they are withdrawn? Evidence from a natural experiment in India. *American Political Science Review* 103 (1): 23-35.

30.11.17: Natural experiments: Cautions
- Sekhon, Jasjeet S. and Rocío Titiunik (2012): When natural experiments are neither natural nor experiments. *American Political Science Review* 106 (1): 35-57.
- Slothuus, Rune (2010): When Can Political Parties Lead Public Opinion? Evidence from a Natural Experiment. *Political Communication* 27 (2): 158-177.

Part 3: Regression-discontinuity designs
07.12.17: Regression-discontinuity designs: Intro
- Dunning, Thad (2008): *Natural experiments in the social sciences: A design-based approach*. Cambridge: Cambridge University Press: chap. 3.
- Smith, Leah M., Linda E. Lévesque, Jay S. Kaufman and Erin C. Strumpf (2017): Strategies for evaluating the assumptions of the regression discontinuity design: A case study using a human papillomavirus vaccination programme. *International Journal of Epidemiology* 46 (3): 939-949.

14.12.17: Regression-discontinuity designs: Examples
- Eggers, Andrew C. and Jens Hainmueller (2009): MPs for sale? Returns to office in postwar British politics. *American Political Science Review* 103 (4): 513-533.
- Michalopoulos, Stelios and Elias Papaioannou (2014): National institutions and subnational development in Africa. *The Quarterly Journal of Economics* 129 (1): 151-213.

21.12.17: Regression-discontinuity designs: Cautions
- Cuesta, Brandon de la and Kosuke Imai (2016): Misunderstandings about the regression discontinuity design in the study of close elections. *Annual Review of Political Science* 19 (1): 375-396.
- McCauley, John F. and Daniel N. Posner (2015): African borders as sources of natural experiments promise and pitfalls. *Political Science Research and Methods* 3 (2): 409-418.

Part 4: Instrumental variables
11.01.18: Instrumental variables: Intro and example
- Dunning, Thad (2008): *Natural experiments in the social sciences: A design-based approach*. Cambridge: Cambridge University Press: chap. 14.
- Sovey, Allison J. and Donald P. Green (2011): Instrumental Variables Estimation in Political Science: A Readers' Guide. *American Journal of Political Science* 55 (1): 188-200.
- Worrall, John L. and Tomislav V. Kovandzic (2010): Police Levels and Crime Rates: An Instrumental Variables Approach. *Social Science Research* 39 (3): 506-516.

18.01.18: Instrumental variables: Example and cautions
- Lind, Jo Thori (2017): An Instrumental Variables Approach to the Effect of Parties on Political Outcomes. *Working Paper*: https://folk.uio.no/jlind/papers/rain.pdf.

- Dunning, T. (2008): Model Specification in Instrumental-Variables Regression. *Political Analysis* 16 (3): 290-302.

25.01.18: Differences-in-differences: Intro and examples
- Intro: Worldbank (2011): Impact Evaluation in Practice: chap. 6.
- Example: Bechtel, Michael M. and Jens Hainmueller (2011): How lasting is voter gratitude? An analysis of the short- and long-term electoral returns to beneficial policy. *American Journal of Political Science* 55 (4): 852-868.

Part 5: Qualitative research
01.02.18: Qualitative research
- Gerring, John and Rose McDermott (2007): An experimental template for case study research. *American Journal of Political Science* 51 (3): 688-701.
- Hale, Henry E. (2011): Formal constitutions in informal politics: Institutions and democratization in post-soviet Eurasia. *World Politics* 63 (4): 581-617.

Course requirements and grading

Prior exposure to quantitative methods is recommended. The exam is a portfolio exam, meaning that you have to submit multiple written assignments over the course of the term (deadlines will be fixed in first session of course). At the beginning of the course, participants have to identify a research question they would like to answer with an empirical study. The first written assignment asks for an elaboration of the theoretical argument by fleshing the macro/cross-case relationship and the underlying mechanism. In a second step, the participants should consider possible confounders (you will learn in class what a 'confounder' is) and how this might impair causal inference.

During the second part of the course, participants are expected to write three short reviews of empirical studies applying a specific type of design (natural experiment, regression-discontinuity, instrumental variable). The last paper involves a discussion of how one of the designs we discuss in class can be used to answer the research question developed at the beginning. You should not do an empirical study and not implement the design. Instead, the goal is to make participants understand the problems of causal inference in plain observational designs (that is, non-experiments) and make you think about quasi-experimental designs ideally giving you results that are similar to experimental results.

Each of the written assignments is graded and commented within seven days. The first two assignments on your theoretical argument and problems of confounding each get a weight of 15%. The three reviews are weighted with 15% each. The last assignment is weighted with 25%.