

UNDERSTANDING SOCIETY

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<https://undsoc.org/2008/10/29/causal-mechanisms/>

OCTOBER 29, 2008 BY DANIEL LITTLE

Causal mechanisms

The central tenet of causal realism is a thesis about causal mechanisms or causal powers. We can only assert that there is a causal relationship between X and Y if we can offer a credible hypothesis of the sort of underlying mechanism that might connect X to the occurrence of Y. The sociologist Mats Ekström puts the view this way: “the essence of causal analysis is ... the elucidation of the processes that generate the objects, events, and actions we seek to explain” (Ekstrom 1992, p. 115). Authors who have urged the centrality of causal mechanisms for both explanatory and purposes include Nancy Cartwright (Nature’s Capacities and Their Measurements), Jon Elster (Explaining Social Behavior: More Nuts and Bolts for the Social Sciences), Rom Harré (Causal Powers), and Wesley Salmon (Scientific Explanation and the Causal Structure of the World). (Hedstrom and Swedberg’s collection, Social Mechanisms: An Analytical Approach to Social Theory, is a useful source. An important advocate for a realist interpretation of science is Roy Bhaskar’s A Realist Theory of Science.)

Nancy Cartwright is one of the most original voices within contemporary philosophy of science. Cartwright places real causal mechanisms at the center of her account of scientific knowledge. As she and John Dupré put the point, “things and events have causal capacities: in virtue of the properties they possess, they have the power to bring about other events or states” (Dupré and Cartwright 1988). Cartwright argues, for the natural sciences, that the concept of a real causal connection among a set of events is more fundamental than the concept of a law of nature. And most fundamentally, she argues that identifying causal relations requires substantive theories of the causal powers (capacities, in her language) that govern the entities in question. Causal relations cannot be directly inferred from facts about association among variables. As she puts the point, “No reduction of generic causation to regularities is possible” (Nature’s Capacities and Their Measurements, p. 90). The importance of this idea for sociological research is profound; it confirms the notion shared by many researchers that attribution of social causation depends inherently on the formulation of good, middle-level theories about the real causal properties of various social forces and entities.

What is a causal mechanism? Consider this formulation: a causal mechanism is a sequence of events, conditions, and processes leading from the explanans to the explanandum (Varieties Of Social Explanation, p. 15). A causal relation exists between X and Y if and only if there is a set of causal mechanisms that connect X to Y. This is an ontological premise, asserting that causal mechanisms are real and are the legitimate object of scientific investigation.

Aage Sørensen summarizes a causal realist position for sociology in these words: “Sociological ideas are best reintroduced into quantitative sociological research by focusing on specifying the mechanisms by which change is brought about in social processes” (Sørensen 1998, p. 264). He argues that sociology requires better integration of theory and evidence. Central to an adequate explanatory theory, however, is the specification of the mechanism that is hypothesized to underlie a given set of observations. “Developing theoretical ideas about social processes is to specify some concept of what brings about a certain outcome—a change in political regimes, a new job, an increase in corporate performance, ... The development of the conceptualization of change amounts to proposing a mechanism for a social process” (239-240). Sørensen makes the critical point that one cannot select a statistical model for analysis of a set of data without first asking the question, what in the nature of the mechanisms we wish to postulate to link the influences of some variables with others? Rather, it is necessary to have a hypothesis of the mechanisms that link the variables before we can arrive at a justified estimate of the relative importance of the causal variables in bringing about the outcome.

The general nature of the mechanisms that underlie sociological causation has been very much the subject of debate. Two broad approaches may be identified: agent-based models and social influence models. The former follow the strategy of aggregating the results of individual-level choices into macro-level outcomes; the latter attempt to identify the factors that work behind the backs of agents to influence their choices. (Sørensen refers to these as “pull” and “push” models; Sørensen, 1998.) Thomas Schelling’s apt title Micromotives and Macrobehavior captures the logic of the former approach, and his work profoundly illustrates the sometimes highly unpredictable results of the interactions of locally rational behavior. Jon Elster has also shed light on the ways in which the tools of rational choice theory support the construction of largescale sociological explanations (The Cement of Society: A Survey of Social Order). The second approach (the “push” approach) attempts to identify socially salient influences such as race, gender, educational status, and to provide detailed accounts of how these factors influence or constrain individual trajectories—thereby affecting sociological outcomes.

Emphasis on causal mechanisms for adequate social explanation has several salutary effects on sociological method. It takes us away from uncritical reliance on uncritical statistical models. But it also may take us away from excessive emphasis on large-scale classification of events into revolutions, democracies, or religions, and toward more specific analysis of the processes and features that serve to

discriminate among instances of large social categories. Charles Tilly emphasizes this point in his arguments for causal narratives in comparative sociology (Tilly 1995). He writes, “I am arguing that regularities in political life are very broad, indeed transhistorical, but do not operate in the form of recurrent structures and processes at a large scale. They consist of recurrent causes which in different circumstances and sequences compound into highly variable but nonetheless explicable effects” (Tilly 1995, p. 1601).

Citations

1. Dupré, John, and Nancy Cartwright. 1988. Probability and Causality: Why Hume and Indeterminism Don't Mix. *Nous* 22:521-536.
2. Ekstrom, Mats. 1992. Causal explanation of social action: The Contribution of Max Weber and of Critical Realism to a Generative View of Causal Explanation in the Social Sciences. *Acta Sociologica* 35 (2):107(16).
3. Sørensen, Aage B. 1998. Theoretical mechanisms and the empirical study of social processes. In *Social Mechanisms: An Analytical Approach to Social Theory*, edited by P. Hedström and R. Swedberg.
4. Tilly, Charles. 1995. To Explain Political Processes. *American Journal of Sociology*.

📁 **MECHANISMS**

CAUSAL POWERS, REALISM

2 Replies to “Causal mechanisms”



asociologist

OCTOBER 29, 2008 AT 1:31 PM

Are you familiar with Elizabeth Bruch's work in the tradition of Thomas Schelling? She's new-ish faculty in Soc here at Michigan, and she does agent-based modeling of segregation processes (directly inspired by Schelling). It's good stuff, and I think you might enjoy it. I'm particularly wowed by her attempt to measure preferences empirically to then load into a Schelling-style checkerboard model (except replacing the checkerboard with a block-by-block map of LA). Also, it was a pleasure to run into you yesterday!

★ Like



Jim Johnson

OCTOBER 29, 2008 AT 3:12 PM

Dan, The problem with most social science – check any of even the top journals in political science, it gets worse in those lower down the intellectual food chain – is that they simply do not take Cartwright’s point about reducing questions of causality to observation of regularities. Not only that, but most political scientists simply do not think it is important to attend to such “philosophical” matters; they simply want to get on with running their regressions. All f that said, I agree with virtually everything you’ve said here. Jim Johnson

 Like

