INVITED RESPONSE

Process tracing, abstraction, and varieties of cognitive interest

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ABSTRACT
This comment responds specifically to some points made by Trampusch and Palier in this volume, particularly the distinction between inductive and deductive approaches, and the inquiry into the ‘added value’ of process tracing.

My comment responds specifically to some points made by Trampusch and Palier (2016), particularly the distinction between inductive and deductive approaches, and the inquiry into the ‘added value’ of process tracing. As befits a comment, this is a highly selective response, leaving out the crucial questions raised already by Abbott (1984) and still discussed in this issue, the questions how to construe a causal sequence, and how to measure event sequences, that is straddle the qualitative/quantitative divide.

Process tracing is described as a methodology aiming to open up the ‘black box’ of relationships linking dependent and independent variables in a causal chain, a process evolving over time. I shall argue that process tracing is one among several approaches to the analysis of social macro phenomena, and which approach is most productive depends on our cognitive interest, and on the nature of the explanandum. The same holds for different modes of process tracing.

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Process tracing, it is said, takes time seriously. Of course, every process, every action or reaction involves time. The distinguishing mark of ‘process tracing’ is that process here refers to a sequence of steps, a causal chain unfolding over time, linking distant causes and effects. This is not always clear when ‘process’ and ‘mechanism’ are used synonymously; confusingly, the term mechanism is applied both to direct causal links and to sequences of several steps. Events where effect directly follows cause, as in the bursting of an overextended balloon, do not call for elaborate process tracing. The same holds for a bank run resulting in bankruptcy: The connection between bankruptcy and the sudden rush of depositors withdrawing their deposits from a bank holding only 10 per cent in equity is direct and immediate. Diffusion processes as an epidemic, a bank run or a panic breaking out in a theatre in the event of a fire, are best analysed using collective behaviour models. The macro phenomena that are the aggregate effect of individual action follow the logic of emergence, or self-organisation in the natural science sense of that term (Mayntz 2009), rather than a sequential process logic.

Admittedly, the distinction between one-shot processes and multi-step sequences is blurred where the steps in a causal chain involve different levels of reality, such as, for example, in psychological explanations of the behavioural frustration-aggression mechanism, or more generally in Coleman’s famous Macro → Micro → Macro model (Coleman 1990). The causal chain connecting the Protestant ethic with a capitalist economy involves micro and macro phenomena, individual behaviour and social structure. This would indeed be a proper case for process tracing, but process tracing...
emphasises the sequence of events in time, not interaction between levels of reality. For process tracing, levels of conceptual abstraction, that is, levels in the methodological rather than the ontological sense are important. Levels of reality are addressed in political science models of multi-level governance that link events or decisions at different political levels, say the national, the European and the international. Processes in multi-level systems obviously involve time, and they can be described as sequences (for an example see Benz and Mayntz 2015), but the dominant cognitive interest is on interaction rather than sequence.

In addition to collective action models and multi-level interaction, there is yet a third analytical approach that vies with process tracing in the study of social macro phenomena – the systems approach. Here the focus is not the unfolding of a causal sequence over time, but the exact interdependencies between different factors and processes, jointly producing a specific outcome, interdependencies between factors possibly involved at different points in the causal chain. Again time is obviously involved, but the focus of systems analysis is on interdependencies, not sequence: It is a different cognitive interest.

For causal process tracing, the level of generality (or abstraction) at which the explanandum, the effect in a causal chain is defined, is crucial. Take the example of World War I or the French Revolution. It is, of course, possible to try and formulate general statements about the sequence of events leading to interstate war, or about revolutions defined as forceful removal of an incumbent regime by former subjects in a collective act of violence. But the preconditions of, and the successive steps common to all empirical cases belonging to the category interstate war, or revolution, explain very little about the two specific events. Complex macro phenomena are the result of a confluence of different processes, involving a multitude of factors effective at different stages of the process. There are fewer, but more abstractly formulated factors involved in the causal sequence leading to ‘20th century capitalism’ than to ‘capitalism in 20th century USA’: generalisation requires paring down a complex reality to the bones, metaphorically speaking, of the lowest common denominator. What is at stake here is a difference in cognitive interest: nomothetic or idiosyncratic, generalising about a category of cases, or explaining a specific, unique case. There are those who would restrict the social sciences to the search for regularities, drawing a sharp boundary between history and social science. Fully realising that ‘unique’ simply means ‘not perceived as an instance in a general category’, I have always maintained that the attempt to explain complex single phenomena is a legitimate endeavour for a social scientist.

This view is shared at least by some scholars emphatically engaged in process tracing. Trampusch and Palier (2016) distinguish two modes of process tracing: it can be (mainly) inductive, that is, theory generating, or (mainly) deductive, that is, theory testing. However, looking at the definitions of process tracing compiled in Table 2, one can identify a third, explanatory mode of process tracing. Among the ‘(mainly) inductive’ definitions, this mode is represented by Van Evera’s concept of backward process tracing, and among the ‘(mainly) deductive’ definitions by Haverland and Blatter’s ‘causal process tracing’. These concepts correspond to the analytical approach I have spelled out as Kausale Rekonstruktion (Mayntz 2002a, 2002b), probing its theoretical potential for the analysis of social macro phenomena. Beach and Pedersen (2013) similarly argue for a third mode of process tracing which they call explaining-outcome process tracing, in distinction to theory testing and theory building process tracing. While the term process tracing highlights processes as the object of investigation, the term causal reconstruction is in fact ‘looking backward’ – ‘tracing’ or ‘reconstructing’ the sequence of events that preceded and ultimately led to a unique, composite effect – the French Revolution, World War II, or the financial crisis of 2008.

Evidently, process tracing can be applied to the financial crisis of 2008 that played out at the level of individual citizens, investors, banks and the international financial system. Many authors have described and analysed steps in the causal chain leading up to the crisis, though none to my knowledge did so explicitly using the process tracing framework. The process leading to the crisis started with a bubble in the US housing market, a bubble that resulted from the confluence of specific political and socio-economic developments (e.g. low interest rates as a substitute for rising household
income, competition and technology-driven ‘business models’ of American banks). The crisis caused by the sudden bursting of the bubble spread beyond the USA because big banks, having become transnational financial corporations, had invested in securitised US subprime mortgages that had been rated favourably by the dominant rating agencies. Since most major banks had cut bank capital (equity) to the lowest permissible level, the drop in the value of their – securitised – assets brought several of them to the brink of bankruptcy, drying up the interbank financial market, and causing a ‘credit crunch’ that affected the real economy. Over time, the process moved through a maze of pre-existing conditions that became relevant step by step – different conditions at successive steps.

In the causal reconstruction of the crisis a number of theories from political science, political economy and economics have been used, theories of systemic risk, of herding behaviour, of organisational culture and so on. But is the particular sequence of events leading up to the crisis a case for deductive and/or inductive process tracing? The crisis falsified empirically the widely held ‘efficient market theory’, which rules out the occurrence of a crisis like this; unintentionally, the crisis was a ‘test’ – of a highly general economic theory. There was no social science theory that either predicted or precluded the crisis; in fact it would be exceedingly difficult to develop a theory where this particular outcome of this particular sequence of events would be one empirical instance of a larger category of events. As Reinhart and Rogoff (2009) put it in their title, ‘This time is different’. Reviewing several centuries of crises, they show indirectly that a theory of processes leading to financial crisis could be formulated – but only at a level of abstraction (or generality) where many factors causally important for the crisis of 2008 are ignored. For such a theory, the explanandum, the crisis of 2007/2008 would have to be defined in abstract terms, for instance as a banking crisis in distinction to a currency or a stock market crisis. This would be a radical conceptual simplification of a crisis experienced as a conjuncture of asset devaluation, the illiquidity of financial institutions, the bankruptcy of banks, the breakdown of the interbank market and the unavailability of credit. A more comprehensive definition of the final outcome of the process requires – or permits, if you like – to include more features and more factors in the causal chain leading to it, thus coming closer to a ‘full’ explanation.

Clearly a choice must be made: a ‘fuller’ explanation of a specific effect, that is this particular crisis, lowers the chance of generalisation. Put differently: The chance of theory testing and of theory development increases with the growing level of abstraction at which a causally reconstructed process and its outcome are conceived. This is related to ontological assumptions nicely spelled out by Abbott more than 30 years ago (Abbott 1988), which ultimately concern the lawfulness or historical uniqueness of social phenomena. The nature of the explananda fruitfully subjected to explanatory process tracing, or causal reconstruction, differs from that of cases suited to theory testing and theory development.

Inductive process tracing, that is process tracing for the purpose of theory development, promises ‘added value’ if we are dealing with many cases having properties varying along causally relevant dimensions, thus permitting systematic comparison. Tracing social policy decisions with different, measurable distributive features, through the right/left composition of governments, to different kinds of election systems would be a case in point. Theory development involving sequences needs an explanandum that can be conceived (and operationalised!) as an instance of a (more general) category. This means that inductive process tracing becomes more difficult as the complexity of the explanandum increases and there are fewer comparable cases – two obviously connected properties.

Feasibility, however, is not the only criterion in the choice of inductive process tracing. Our cognitive interest need not lie in generalising theoretically about, say, ‘technological innovation’, a category that includes the telephone, the steam engine, missiles, the railroad, electricity and refrigerators. There are many detailed causal reconstructions of the development of specific technologies, and it is of course possible to identify factors (conditions) common to a large range of technological innovations, such as invention, demand and state support. But the cognitive interest guiding
most research into technological development is not to formulate a general theory of technological innovation, it is to identify the social, economic and political consequences of specific technologies; these are very different for innovations such as the railroad or the spinning jenny, and result from significantly different processes.

Process tracing for the purpose of testing presupposes that there is a theory to be tested, a theory about generalised sequences, not about mechanisms that operate at one specific step in the causal chain. Deductive process tracing thus depends on successful theory building by means of inductive process tracing. Understandably, there are not many testable theories at the societal macro level. The theory of modernisation, formulated on the basis of modern Western democracies and subsequently applied to developing countries in other parts of the world, is one of few positive instances of deductive process tracing at this level. There are more testable theories at the meso and micro levels of social reality where comparative research is easier to conduct. Inductive process tracing and deductive process tracing are closely interdependent exercises; whether process tracing has ‘added value’, deductively or inductively, depends on the kind of ‘effect’ to be explained.

If abstraction facilitates theory development and testing, it also has a price, to be paid in verstehen, the subjective feeling of truly understanding how something came about. There are two ways of explaining an observed macro phenomenon: by showing that it is an instance of a known regularity, or by showing how it came about. The need to understand how something has come about is most evident in the case of events that surprise us, historical events like the recent financial crisis or the dissolution of the Soviet Union. In such cases, explanatory causal reconstruction that applies theory to specific steps in the causal chain, but does not seek to generalise the whole sequence, is a suitable approach. As Fritz Scharpf has pointed out to me, causal reconstruction that seeks to detail the role of, and the interconnections among, multiple factors has also added practical value as a guide to political intervention; the post-crisis efforts at financial market reform that targeted the different, previously identified causes of the crisis are a case in point.

An interest in explanatory causal reconstruction rather than generalisation is typically attributed to the qualitative rather than the quantitative social scientist, and it also comes with a price. Backward process tracing, or causal reconstruction of an effect already given, easily conveys the impression of determinacy. This is very evident in the literature on technology development, where given technological innovations like the railroad or the telephone often appear to be the necessary outcome of a process moving straight from scientific discovery to prototype production and from there to widespread utilisation. Trampusch and Palier (2016) discuss the issue of determinism versus probability. But probability that can be calculated is not the same as contingency, an ontological category. Contingency means that each step in a reconstructed causal chain need not have occurred as it did, though there are reasons why it did. Process tracing in all its forms aims to answer the question ‘why Y?’, not the counterfactual question ‘why not A?’. Contingency calls for attention not simply to sequence, to choices that have in fact been made, but to missed opportunities and critical junctures, issues closer to the heart of nonlinear systems theory than to political theory.

Disclosure statement

No potential conflict of interest was reported by the author.

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