

Selecting Cases for Comparative Sequential Analysis: Novel Uses for Old Methods

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I. Introduction

In the lead article of the first issue of *Comparative Politics*, Harold Lasswell posited that the “scientific approach” and the “comparative method” are one in the same (Lasswell 1968: 3). So important is comparative case study research to the modern social sciences that two disciplinary subfields – comparative politics in political science and comparative historical sociology – crystallized in no small part because of their shared use of comparative case study research (Collier 1993; Adams, Clemens, and Orloff 2005: 22-26; Mahoney and Thelen 2015). As a result, a first-principles methodological debate emerged about the appropriate ways to select cases for causal inquiry. In particular, the diffusion of econometric methods in the social sciences exposed case study researchers to allegations that they were “selecting on the dependent variable” and that “selection bias” would hamper the “answers they get” (Geddes 1990). Lest they be pushed to randomly select cases or turn to statistical and experimental approaches, case study researchers had to develop a set of persuasive analytic tools for their enterprise.

It is unsurprising, therefore, that scholarship discussing case selection has profused over the years (ex. Przeworski and Teune 1970; Lijphart 1971; Eckstein 1975; Yin 1984; Geddes 1990; Collier 1993; Faure 1994; George and Bennett 2005; Flyvbjerg 2006; Levy 2008; Seawright and Gerring 2008; Gerring 2007; Brady and Collier 2010; Tarrow 2010). Gerring and Cojocar (2016) synthesize this literature by deriving no less than five distinct types (representative, anomalous, most-similar, crucial, and most-different) and eighteen subtypes of cases, each with its own logic of case selection. It falls outside the scope of this chapter to provide a descriptive overview of each approach to case selection. Rather, the purpose of the

¹ Ph.D. Candidate, Department of Politics at Princeton University. I would like to thank Jennifer Widner and Michael Woolcock for the invitation to write this chapter, Daniel Ortega Nieto for pointing me to case studies conducted by the World Bank’s Global Delivery Initiative that I use as illustrative examples, as well as Jack Levy, Hillel Soifer, Andrew Moravcsik, Cassandra Emmons, Rory Truex, Dan Tavana, Manuel Vogt, and Killian Clarke for constructive feedback.

present inquiry is to place the literature on case selection in constructive dialogue with the equally lively and burgeoning body of scholarship on process tracing (George and Bennett (2005); Brady and Collier (2010); Beach and Pedersen (2013); Bennett and Checkel 2015). I ask a simple question: Should our evolving understanding of causation and toolkit for case-based causal inference courtesy of process tracing scholars alter how scholars approach case selection? If so, why, and what may be the most fruitful paths forward?

To propose an answer, this chapter focuses on perhaps the most influential and widely-used means to conduct qualitative research involving two or more cases: Mill's methods of agreement and difference. Also known as the "most different systems/cases" and "most similar systems/cases" designs, these strategies have not escaped challenge, although, as we will see, many of these critiques were fallaciously premised on case study research serving as a weaker analogue to econometric analysis. Here, I take a different approach: I argue that the traditional use of Millian methods of case selection can indeed be flawed, but rather because it risks treating cases as static units to be synchronically compared rather than as social processes unfolding over time. As a result, Millian methods risk prematurely rejecting and otherwise overlooking (1) ordered causal processes, (2) paced causal processes, and (3) equifinality, or the presence of multiple pathways that produce the same outcome. While qualitative methodologists have stressed the importance of these processual dynamics, they have been less attentive to how these factors may problematize pairing Millian methods of case selection with within-case process tracing (ex. Hall 2003; Tarrow 2010; Falleti and Mahoney 2015). This chapter begins to fill this gap.

Taking a more constructive and prescriptive turn, the chapter provides a set of recommendations for ensuring the alignment of Millian methods of case selection with within-case sequential analysis. It begins by outlining how the deductive use of processualist theories can help reformulate Millian case selection designs to accommodate ordered and paced processes (but not equifinal processes). More originally, the chapter concludes by proposing a new, alternative approach to comparative case study research – *the method of inductive case selection*. By making use of Millian methods to select cases for comparison after a causal process has been identified within a particular case, the method of inductive case selection enables researchers to assess (1) the generalizability of the causal sequences, (2) the logics of scope conditions on the causal argument, and (3) the presence of equifinal pathways to the same outcome. In so doing,

scholars can convert the weaknesses of Millian approaches into strengths and better align comparative case study research with the advances of processualist researchers.

Organizationally, the chapter proceeds as follows: Section II provides an overview of Millian methods for case selection and articulates how the literature on process tracing fits within debates about the utility and shortcomings of the comparative method. Section III then articulates why the traditional use of Millian methods risks blinding the researcher to ordered, paced, and equifinal causal processes, and describes how deductive, processualist theorizing helps attenuate some of these risks. Section IV then develops a new inductive method of case selection and provides a number of concrete examples from development practice to illustrate how it can be used by both scholars and policy practitioners alike. Finally, Section V concludes.

II. Case Selection in Comparative Research

Case Selection Before the Processual Turn

Before “process tracing” entered the lexicon of social scientists, the dominant case selection strategy in case study research sought to maximize causal leverage via comparison, particularly via the “methods of agreement and difference” of John Stuart Mill (1843 [1974]: 388-391).

In Mill’s method of difference, the researcher purposively chooses two (or more) cases that experience different outcomes, despite otherwise being very similar on a number of relevant dimensions. Put differently, the researcher seeks to maximize variation in the outcome variable while minimizing variation amongst a set of plausible explanatory variables. It is for this reason that the approach also came to be referred to as the ‘most similar systems’ or ‘most similar cases’ design – while Mill’s nomenclature highlights variation in the outcome of interest, the alternative terminology highlights minimal variation amongst a set of possible explanatory factors. The underlying logic of this case selection strategy is that because the cases are so similar, the researcher can subsequently probe for the explanatory factor that actually does exhibit cross-case variation and isolate it as a likely cause.

Mill’s method of agreement is the mirror image of the method of difference. Here, the researcher chooses two (or more) cases that experience similar outcomes despite being very different on a number of relevant dimensions. That is, the researcher seeks to minimize variation in the outcome variable while maximizing variation amongst a set of plausible explanatory variables. Confusingly once more, an alternative, independent variable-focused terminology for

this approach was developed: The ‘most different systems’ or ‘most different cases’ design. The underlying logic of this case selection strategy is that it helps the researcher isolate the explanatory factor that is similar across the otherwise different cases as a likely cause.²

Figure 1: Case Selection Setup Under Mill’s Methods of Difference and Agreement

Mill’s method of difference / most similar cases design						
	DV / Outcome	IV1 / Event1	IV2 / Event2	IV3 / Event3	IV4 / Event4	
Case 1:	1	1	1	1	1	
Case 2:	0	1	1	1	0	
		<i>IV1-IV3 d/n covary w/ outcome → Rejected as causally insufficient</i>			<i>IV4 covaries w/ outcome → Identified as likely cause</i>	

Mill’s method of agreement / most different cases design						
	DV / Outcome	IV1 / Event1	IV2 / Event2	IV3 / Event3	IV4 / Event4	
Case 1:	1	1	0	1	1	
Case 2:	1	0	1	0	1	
		<i>IV1-IV3 d/n covary w/ outcome → Rejected as causally unnecessary</i>			<i>IV4 covaries w/ outcome → Identified as likely cause</i>	

Mill himself did not believe that such methods could yield causal inferences outside of the physical sciences (Mill (1843 [1974]: 452). Nevertheless, in the 1970s a number of comparative social scientists endorsed Millian methods as the cornerstones of the comparative method. For example, Przeworski and Teune (1970) advocated in favor of the most different cases design, whereas Lijphart (1971) favored the most similar cases approach. In so doing, scholars sought case selection techniques that would be as analogous as possible to regression analysis: Focused on controlling for independent variables across cases, maximizing covariation between the outcome and a plausible explanatory variable, and treating cases as a qualitative equivalent to a

² Some scholars, such as Faure (1994), distinguish Mill’s dependent-variable driven methods of agreement and difference from the independent-variable driven most similar and most different systems designs, suggesting they are distinct. But because, as Figure 1 shows, Mill’s dependent-variable driven methods also impose requirements on the array of independent variables to permit causal inference via exclusion, this distinction is not particularly fertile.

row of dataset observations. It is not difficult to see why this contributed to the view that case study research serves as the “inherently flawed” version of econometrics (Adams, Clemens, and Orloff 2005: 25; Tarrow 2010). Indeed, despite his prominence as a case study researcher, Lijphart (1975: 165; 1970: 685) concluded that “because the comparative method must be considered the weaker method,” then “if at all possible one should generally use the statistical (or perhaps even the experimental) method instead.” As Hall (2003: 380; 396) brilliantly notes, case study research

“was deeply influenced by [Lijphart’s] framing of it...[where] the only important observations to be drawn from the cases are taken on the values of the dependent variable and a few explanatory variables...From this perspective, because the number of pertinent observations available from small-N comparison is seriously limited, the analyst lacks the degrees of freedom to consider more than a few explanatory variables, and the value of small-N comparison for causal inference seems distinctly limited.”

In other words, the predominant case selection approach through the 1990s sought to do its best to reproduce a regression framework in a small-N setting. Hence Lijphart’s concern with the “many variables, small number of cases” problem, which he argued could only be partially mitigated if, *inter alia*, the researcher increases the number of cases and decreases the number of variables across said cases (1971: 685-686). Later works embraced Lijphart’s formulation of the problem even as they sought to address it: For example, Eckstein (1975: 85) argued that a “case” could actually be comprised of many “cases” if the unit of analysis shifted from being, say, the electoral system to, say, the voter. Predictably, such interventions invited retorts: Lieberman (1994) for example, claimed that Millian methods’ inability to accommodate probabilistic causation,³ interaction effects, and multivariate analysis would remain fatal flaws.

Enter Process Tracing

It is in this light that 'process tracing' – a term first used by Hobarth (1972) but popularized by George (1979) and particularly George and Bennett (2005), Brady and Collier (2010), Beach and Pedersen (2013), and Bennett and Checkel (2015) – proved revolutionary for the ways in which

³ In Mill’s method of difference, factors present in both cases are eliminated for being insufficient for the outcome (in the method of agreement, factors that vary across the cases are eliminated for being unnecessary).

social scientists conceive of case study research. Cases have gradually been reconceptualized not as dataset observations but as concatenations of concrete historical events that produce a specific outcome (Goertz and Mahoney 2012). That is, cases are increasingly treated as social processes, where a process is defined as “a particular type of sequence in which the temporally ordered events belong to a single coherent pattern of activity” (Falleti and Mahoney 2015: 214). Although there exist multiple distinct conceptions of process tracing – from Bayesian approaches (Bennett 2015) to set theoretic approaches (Mahoney et al. 2009) to mechanistic approaches (Beach and Pedersen 2013) to sequentialist approaches (Falleti and Mahoney 2015) – their overall *esprit* is the same: Reconstructing the sequence of events and interlinking causal logics that produce an outcome – isolating the ‘causes of effects’ – rather than probing a variable’s mean impact across cases via an ‘effects of causes’ approach.

For this intellectual shift to occur, processualist social scientists had to show how a number of assumptions underlying Millian comparative methods – as well as frequentist approaches more generally – are usually inappropriate for case study research. For example, the correlational approach endorsed by Przeworski and Teune (1970), Lijphart (1971), and Eckstein (1975) treats observational units as homogeneous and independent (Hall 2003: 382; Goertz and Mahoney 2012). Unit homogeneity means that “different units are presumed to be fully identical to each other in all relevant respects except for the values of the main independent variable,” such that each observation contributes equally to the confidence we have in the accuracy and magnitude of our causal estimates (Brady and Collier 2010: 41-42). Given this assumption, more observations are better: Hence Lijphart (1971)’s dictum to “increase the number of cases” and, in its more recent variant, to “increase the number of observations” (King, Keohane, and Verba 1994: 208-230). By independence, we mean that “for each observation, the value of a particular variable is not influenced by its value in other observations” (Brady and Collier 2010: 43). Hence each observation contributes “new information about the phenomenon in question” (Ibid).

By contrast, practitioners of process tracing have shown that treating cases as social processes implies that case study observations are often interdependent and derived from heterogeneous units (Goertz and Mahoney 2012). Unit heterogeneity means that not all historical events, and the observable evidence they generate, are created equal. Hence some observations may better enable the reconstruction of a causal process because they are more proximate to central events under study. Correlatively, this is why historians accord greater ‘weight’ to

primary than to secondary sources, and why primary sources concerning actors central to a key event are more important than those for peripheral figures (Trachtenberg 2009; Tansey 2007). In short, while process tracing may yield a bounty of observable evidence, we seek not to necessarily increase the number, but rather the quality, of observations. Finally, by interdependence we mean that because time is “fateful” (Sewell 2005: 6), antecedent events in a sequence may influence subsequent events. This “fatefulness” has multiple sources. For instance, historical institutionalists have shown how social processes can exhibit path dependencies where the outcome of interest becomes a central driver of its own reproduction (Pierson 1996; Pierson 2000; Mahoney 2000; Hall 2003; Falleti and Mahoney 2015). At the individual level, processual sociologists have noted that causation in the social world is rarely a matter of one billiard ball hitting another, as in Hume’s (1738 [2003]) frequentist concept of “constant conjunction.” Rather, it hinges upon actors endowed with memory, such that the micro-foundations of social causation rest on individuals aware of their own historicity (Sewell 2005; Abbott 2001; 2016).

At its core, eschewing the independence and unit homogeneity assumptions simply means situating case study evidence within its spatio-temporal context (Hall 2003; Falleti and Lynch 2009). This commitment is showcased by the language which process-sensitive case study researchers use when making causal inferences. First, rather than relating 'independent variables' with 'dependent variables,' they often privilege the contextualizing language of relating 'events' to 'outcomes' (Falleti and Mahoney 2015). Second, they prefer to speak not of 'dataset observations' evocative of cross-sectional analysis but of 'causal process observations' evocative of sequential analysis (Brady and Collier 2010; Goertz and Mahoney 2012). Third, they may substitute the language of 'causal inference via concatenation' – a terminology implying that unobservable causal mechanisms are embedded within a sequence of observable events – for that of 'causal inference via correlation' evocative of the frequentist billiard-ball analogy (Waldner 2012: 68). The result is that case study research is increasingly hailed as a “distinctive approach that offers a much richer set of observations, especially about causal processes, than statistical analyses normally allow” (Hall 2003: 397).

III. Threats to Processual Inference and the Role of Theory

While scholars have shown how process tracing methods have reconceived the utility of case studies for causal inference, there remains some ambiguity about the implications for case

selection, particularly using Millian methods. While several works have touched upon this theme (ex. Hall 2003; George and Bennett 2005; Levy 2008; Tarrow 2010) the contribution that most explicitly wrestles with this topic is Falleti and Mahoney (2015), who acknowledge that “the application of Millian methods for sequential arguments has not been systematically explored, although we believe it is commonly used in practice” (Ibid: 226). Falleti and Mahoney argue that process tracing can remedy the weaknesses of Millian approaches: “When used in isolation, the methods of agreement and difference are weak instruments for small-N causal inference...small-N researchers thus normally must combine Millian methods with process tracing or other within-case methods to make a positive case for causality” (Ibid: 225-226). Their optimism about the synergy between Millian methods and process tracing leads them to conclude that “by fusing these two elements, the comparative sequential method merits the distinction of being the principal overarching methodology for [comparative historical analysis] in general” (Ibid: 236).

Falleti and Mahoney’s contribution is the definitive statement of how comparative case study research has long abandoned its Lijphartian origins and fully embraced treating cases as social processes. For it is certainly true that process tracing advocates have shown that some past critiques of Millian methods may not have been as damning as they first appeared. For example, Lieberman’s (1994) critique that Millian case selection requires a deterministic understanding of causation has been countered by set-theoretic process tracers who note that causal processes can indeed be conceptualized as concatenations of necessary and sufficient conditions (Goertz and Mahoney 2012; Mahoney and Vanderpoel 2015). After all, “at the individual case level, the ex post (objective) probability of a specific outcome occurring is either 1 or 0” (Mahoney 2008: 415). Even for those who do not explicitly embrace set-theoretic approaches and prefer to perform a series of “process tracing tests” (like straw-in-the-wind, hoop, smoking gun, and doubly-decisive tests), the objective remains to evaluate the deterministic causal relevance of a historical event on the next linkage in a sequence (Collier 2011; Mahoney 2012). In this light, Millian methods appear to have been thrown a much-needed lifeline.

Yet processualist researchers have implicitly exposed new, and perhaps more damning, weaknesses in the traditional use of the comparative method. Here, Falleti and Mahoney (2015) are less engaged in highlighting how their focus on comparing within-case sequences should push scholars to revisit strategies for case selection premised on assumptions that process tracing advocates have undermined. In this light, I begin by outlining three hitherto underappreciated

threats to inference associated with the traditional use of Millian case selection: potentially ignoring (1) ordered and (2) paced causal processes; and ignoring (3) the possibility of equifinality. I then demonstrate how risks (1) and (2) can be attenuated deductively by formulating processualist theories and then tweaking Millian designs for case selection.

Risk 1: Ignoring Ordered Processes

Process-sensitive social scientists have long noted that “the temporal order of the events in a sequence [can be] causally consequential for the outcome of interest” (Falleti and Mahoney 2015: 218; see also Pierson 2004: 54-78). For example, where individual acts of agency play a critical role – such as political elites’ response to a violent protest – “reordering can radically change subject’s understanding of the meaning of particular events,” altering their response and the resulting outcomes (Abbott 1995: 97).

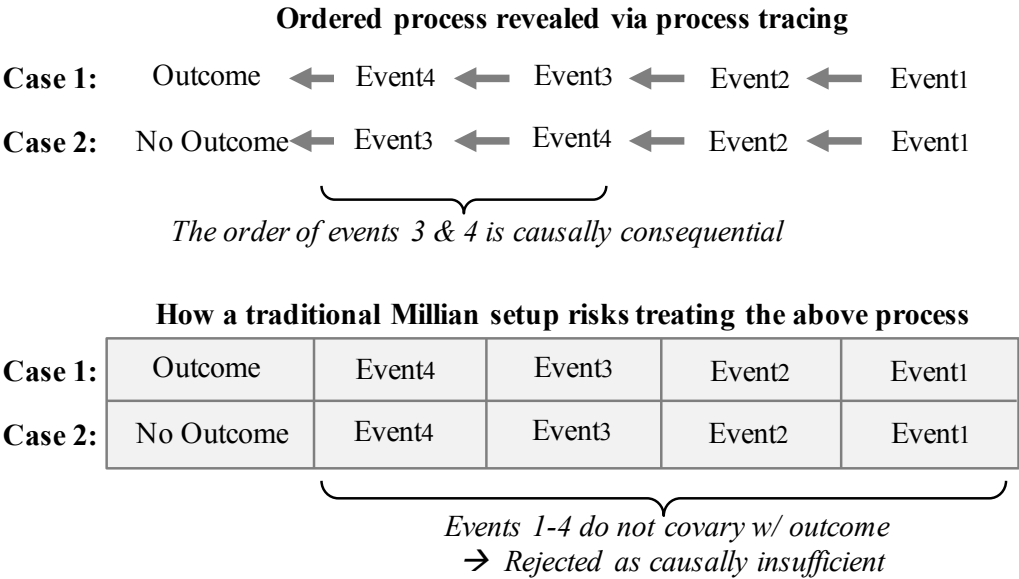
An evocative illustration is provided by Sewell (1996)’s analysis of how the storming of the Bastille in 1789 produced the modern concept of “revolution.” After overrunning the fortress, the crowd freed the few prisoners held within it, shot, stabbed, and beheaded the Bastille’s commander, and paraded his severed head through the streets of Paris (Sewell 1996: 850). When the National Assembly heard of the taking of the Bastille, it first interpreted the contentious event as “disastrous news” and an “excess of fury;” Yet when the King subsequently responded by retreating his troops to their provincial barracks, the Assembly recognized that the storming of the Bastille had strengthened its hand, and proceeded to reinterpret the event as a patriotic act of protest in support of political change (Ibid: 854-855). The King’s reaction to the Bastille thus bolstered the Assembly’s resolve to “invent” the modern concept of revolution as a “legitimate rising of the sovereign people that transformed the political system of a nation” (Ibid: 854-858). Proceeding counterfactually, had the ordering of events been reversed – had the King withdrawn his troops before the Bastille had been stormed – the National Assembly would have had little reason to interpret the popular uprising as a patriotic act legitimating reform rather than a violent act of barbarism.

Temporal ordering may also alter a social process’ political outcomes through macro-level mechanisms. For example, consider Falleti (2005; 2010)’s analysis of the conditions under which state decentralization – the devolution of national powers to subnational administrative bodies – increases local political autonomy in Latin America. Through process tracing, Falleti

demonstrates that when fiscal decentralization precedes electoral decentralization, local autonomy is increased, since this sequence endows local districts with the monetary resources necessary to subsequently administer an election effectively. However, when the reverse occurs, such that electoral decentralization precedes fiscal decentralization, local autonomy is compromised. For although the district is being offered the opportunity to hold local elections, it lacks the monetary resources to administer them effectively, endowing the national government with added leverage to impose conditions upon the devolution of fiscal resources.

For our purposes, what is crucial to note is not simply that temporal ordering matters, but that in ordered processes it is not the presence or absence of events that is most consequential for the outcome of interest. For instance, in Falleti’s analysis both fiscal and electoral decentralization occur. This means that a traditional Millian framework risks dismissing some explanatory events as causally irrelevant on the grounds that their presence is insufficient for explicating the outcome of interest (see Figure 2).

Figure 2: *How Ordered Processes Risk Being Ignored by a Millian Setup*



The way to deductively attenuate the foregoing risk is to develop an ordered theory and then modify the traditional Millian setup to assess the effect of ordering on an outcome of interest. That is, deductive theorizing aimed at probing the causal effect of ordering can guide us in

constructing an appropriate Millan case selection design, like that in Figure 3. In this example, we redefine the fourth independent variable to measure not the presence or absence of a fourth event, but rather to measure the ordering of two previously defined events (in this case, events 1 and 2). This case selection setup would be appropriate if deductive theorizing predicts that the outcome of interest is produced when event 1 is followed by event 2 (such that, unless this specific ordering occurs, the presence of events 1 and 2 is insufficient to generate the outcome). In other words, if Millian methods are to be deductively used to select cases for comparison, the way to guard against prematurely dismissing the causal role of temporal ordering is to explicitly theorize said ordering *a priori*. If this proves difficult or the researcher lacks sufficient knowledge to develop such a theory, it is advisable to switch to the more inductive method for case selection outlined in the next section.

Figure 3: *Deductively Incorporating Ordered Processes Within a Millian Setup*

	Outcome	IV1= Event1	IV2= Event2	IV3= Event3	IV4= Event1→Event2
Case 1:	1	1	1	1	1
Case 2:	0	1	1	1	0

Risk 2: Ignoring Paced Processes

Processualist researchers have also emphasized that, beyond temporal order, “the speed or duration of events... is causally consequential” (Falleti and Mahoney 2015: 219). For example, social scientists have long distinguished an “eventful temporality” (Sewell 1996) from those “big, slow moving” incremental sequences devoid of rapid social change (Pierson 2003). For historical institutionalists, this distinction is illustrated by “critical junctures” – defined as “relatively short periods of time during which there is a substantially heightened probability that agents’ choices will affect the outcome of interest” (Capoccia and Kelemen 2007: 348; Capoccia 2015: 150-151) – on the one hand, and those “causal forces that develop over an extended period of time,” such as “cumulative” social processes, sequences involving “threshold effects,” and “extended causal chains” on the other hand (Pierson 2004: 82-90; Mahoney and Thelen 2010).

An excellent illustration is provided by Beissinger (2002)'s analysis of the contentious events that led to the collapse of the Soviet State. Descriptively, the sequence of events has its origins in the increasing transparency of Soviet institutions and freedom of expression accompanying Gorbachev's Glasnost (Ibid: 47). As internal fissures within the Politburo began to emerge in 1987, Glasnost facilitated media coverage of the split within the Soviet leadership (Ibid: 64). In response, "interactive attempts to contest the state grew regularized and began to influence one another" (Ibid: 74). These challenging acts mobilized around previously dormant national identities, and for first time – often out of state incompetence – these early protests were not shut down (Ibid: 67). Protests reached a boiling point in early 1989 as the first semi-competitive electoral campaign spurred challengers to mobilize the electorate and cultivate grievances in response to regime efforts to "control nominations and electoral outcomes" (Ibid: 86). By 1990 the Soviet State was crumbling, and "in many parts of the USSR demonstration activity... had become a normal means for dealing with political conflict" (Ibid: 90).

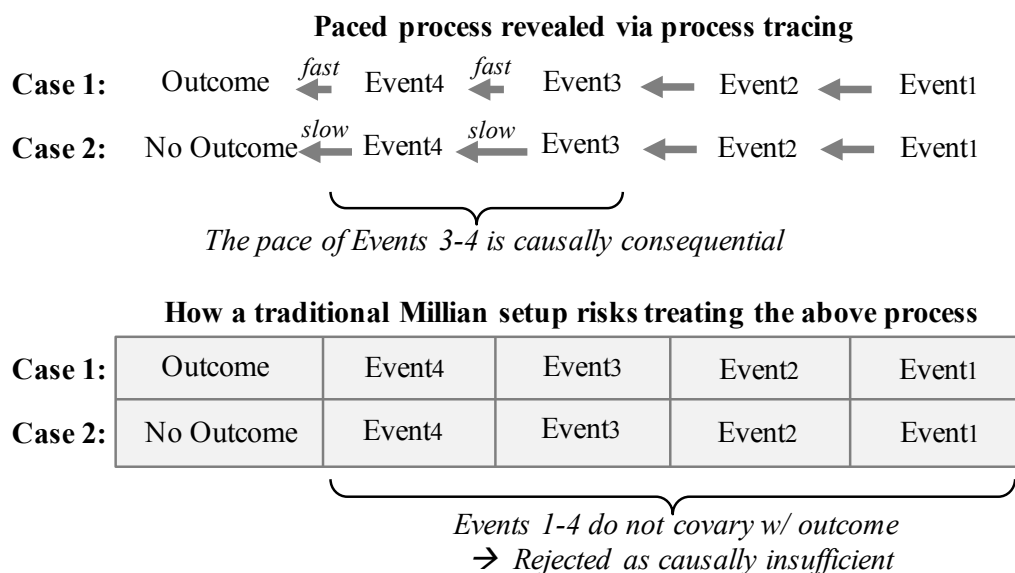
Crucially, Beissinger stresses that to understand the causal dynamics of the Soviet State's collapse, highlighting the chronology of events is insufficient. For the 1987-1990 period comprised a moment of "thickened history" where "what takes place... has the potential to move history onto tracks otherwise unimaginable... all within an extremely compressed period of time" (Ibid: 27). Information overload, the density of interaction between diverse social actors, and the diffusion of contention engendered "enormous confusion and division within Soviet institutions," allowing the hypertrophy of challenging acts to play "an increasingly significant role in their own causal structure" (Ibid: 97; 27). In this light, the temporal compression of a sequence of events can bolster the causal role of human agency and erode the constraints of social structure. Proceeding counterfactually, had the exact same sequence of contentious events unfolded more slowly, it is doubtful that the Soviet State would have suddenly collapsed.

Many examples of how the prolongation of a sequence of events can render them invisible, and thus produce different outcomes, could be referenced. Consider, for example, how global climate change – which is highlighted by Pierson (2004: 81) as a prototypical process with prolonged time horizons – conditions the psychological response of social actors. As a report from the American Psychological association underscores, "climate change that is construed as rapid is more likely to be dreaded," for "people often apply sharp discounts to costs or benefits that will occur in the future...relative to experiencing them immediately" (Swim et al.

2009: 24-25; Loewenstein and Elster 1992). This logic is captured by the metaphor of the “boiling frog” – “place a frog in a pot of cool water, and gradually raise the temperature to boiling, and the frog will remain in the water until it is cooked” (Boyatzis 2006: 614).

What is important to note is that, once more, paced processes are not premised on the absence or presence of their constitutive events being causally determinative; rather, they are premised on the duration of events (or their temporal separation) bearing explanatory significance. Hence the traditional approach to case selection risks neglecting the causal impact of temporal duration on the outcome of interest (see Figure 4).

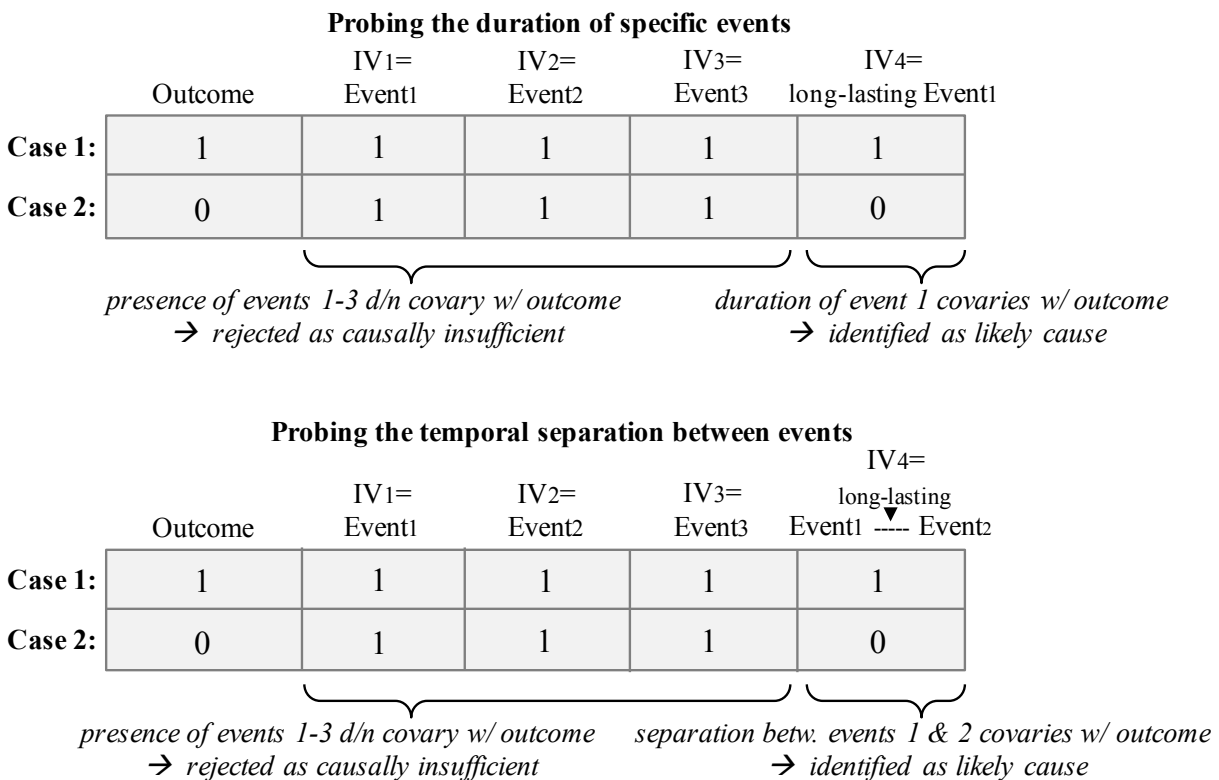
Figure 4: Paced Processes Risk Being Ignored by a Millian Setup



Here, too, the way to deductively assess the causal role of pacing on an outcome of interest is to explicitly develop a paced theory before selecting cases for empirical analysis. On the one hand, we might theorize that it is the duration of a given event that is causally consequential; On the other hand, we might theorize that it is the temporal separation of said event to other events that is significant. Figure 5 suggests how a researcher can assess both theories through a revised Millian design. In the first example, we define a fourth independent variable measuring not the presence of a fourth event, but rather the temporal duration of a previously defined event (in this case, event 1). This would be an appropriate case selection design to assess a theory predicting that the outcome of interest occurs when event 1 unfolds over a prolonged period of time (such

that if event 1 unfolds more rapidly, its mere occurrence is insufficient for the outcome). In the second example, we define a fourth independent variable measuring the temporal separation between two previously defined events (in this case, events 1 and 2). This would be an appropriate case selection design for a theory predicting that the outcome of interest only occurs when event 1 is temporally distant to event 2 (such that events 1 and 2 are insufficient for the outcome if they are proximate). Again, if the researcher lacks *a priori* knowledge to theorize how a paced process may be generating the outcome, it is advisable to adopt the inductive method of case selection described in Section IV.

Figure 5: Deductively Incorporating Paced Processes Within a Millian Setup



Risk 3: Ignoring Equifinal Causal Processes

Finally, researchers have noted that causal processes may be mired by equifinality – the fact that “multiple combinations of values that produce the same outcome” (Mahoney 2008: 424; see also

George and Bennett 2005; Goertz and Mahoney 2006). More formally, set-theoretic process tracers account for equifinality by emphasizing that, in most circumstances, “necessary” conditions or events are actually INUS conditions – individually necessary components of an unnecessary but sufficient combination of factors (Mahoney and Vanderpoel 2015: 15-18).

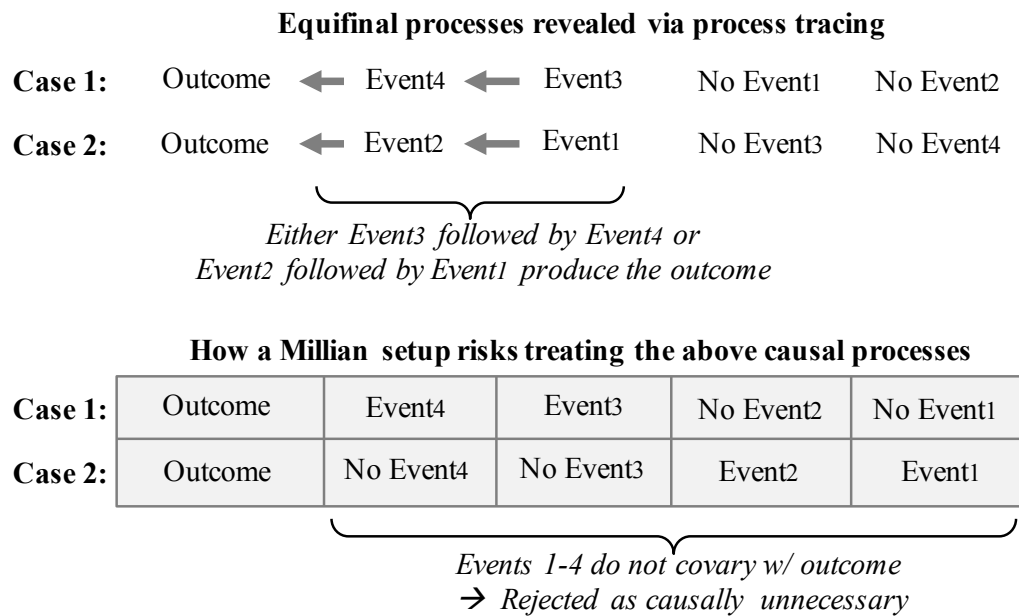
One of the reasons why processualist social scientists increasingly take equifinality seriously is the recognition that causal mechanisms may be context-dependent. Sewell’s work stresses that “the consequences of a given act...are not intrinsic to the act but rather will dependent on the nature of the social world within which it takes place” (Sewell 2005: 9-10). And Falletti and Lynch (2009: 2; 11) argue that “causal effects depend on the interaction of specific mechanisms with aspects of the context within which these mechanisms operate,” hence the necessity of imposing “scope conditions” on theory building. One implication is that the exact same sequence of events in two different settings may produce vastly different causal outcomes. The flip side of this conclusion is that we should not expect a given outcome to always be produced by the same sequence of events.

For example, consider Sewell’s critique of Skocpol (1979)’s *States and Social Revolutions* for embracing an “experimental temporality.” Skocpol deploys Millian methods of case selection to theorize that the great social revolutions – the French, Russian, and Chinese revolutions – were caused by a conjunction of three necessary conditions: “(1) military backwardness, (2) politically powerful landlord classes, and (3) autonomous peasant communities” (Sewell 2015: 93). Yet to permit comparison, Skocpol assumes that the outcomes of one revolution, and the process of historical change more generally, have no effect on a subsequent revolution (Ibid: 94-95). This approach amounts to “cutting up the congealed block of historical time into artificially interchangeable units,” ignoring the fatefulness of historical sequences (Ibid). For example, the Industrial Revolution “intervened” between the French and Russian Revolutions, and consequently one could argue that “the revolt of the Petersburg and Moscow proletariat was a necessary condition for social revolution in Russia in 1917, even if it was not a condition for the French Revolution in 1789” (Ibid: 94-95). What Sewell is emphasizing, in short, is that peasant rebellion is an INUS condition (as is a proletariat uprising), rather than a necessary condition.

Another prominent example of equifinality is outlined by Collier (1999: 5-11)’s review of the diverse pathways through which democratization occurs. In the elite-driven pathway,

emphasized by O'Donnell and Schmitter (1986), an internal split amongst authoritarian incumbents emerges; this is followed by liberalizing efforts by some incumbents, which enables the resurrection of civil society and popular mobilization; finally, authoritarian incumbents negotiate a pacted transition with opposition leaders. By contrast, in the working class-driven pathway, emphasized by Rueschemeyer, Stephens, and Stephens (1992), a shift in the material balance of power in favor of the democracy-demanding working class and against the democracy-resisting landed aristocracy causes the former to overpower the other, and via a democratic revolution from below a regime transition occurs. Crucially, Collier (1999: 12) emphasizes that these two pathways need not be contradictory (or exhaustive): The elite-driven pathway appears more common in the Latin American context during the second wave of democratization; whereas the working class-driven pathway appears more common in Europe during the first wave of democratization.

Figure 6: *Equifinal Causal Processes Risk Being Ignored by a Millian Setup*



What is crucial is that Millian case selection is premised on there being a single cause underlying the outcome of interest. As a result, Millian methods risk dismissing a set of events as causally irrelevant *ex ante* in one case simply because that same set of events fails to produce the outcome in another case (see Figure 6). Unlike ordered and paced processes, there is no clear way to

leverage deductive theorizing to reconfigure Millian methods for case selection and accommodate equifinality. However, I argue that the presence of equifinal pathways can be fruitfully probed if we embrace a more inductive approach to comparative case selection, as the next section outlines.

IV. A New Approach: The Method of Inductive Case Selection

If a researcher wishes to guard against ignoring consequential temporal dynamics but lacks the *a priori* knowledge necessary to develop a processual theory and tailor their case selection strategy, is there an alternative path forward? Yes, indeed: I suggest that researchers could wield most similar or most different cases designs to (1) probe causal generalizability, (2) reveal scope conditions, and (3) explore the presence of equifinality.⁶ To walk through this more inductive case selection approach, I engage some case studies from development practice to illustrate how researchers and practitioners alike could implement and benefit from the method.

Tempering the Deductive Use of Millian Methods

To begin, one means to insure against a Millian case selection design overlooking an ordered, paced, or equifinal causal process (in the absence of deductive theorizing) is to be wary of leveraging the methods of agreement and difference to eliminate potential explanatory factors (Falleti and Mahoney 2015: 225-226). That is, the decision to discard an explanatory variable or historical event as causally unnecessary (via the method of agreement) or insufficient (via the method of difference) may be remanded to the process tracing stage, rather than being made *ex ante* at the case selection stage.

Notice how this recommendation is particularly intuitive in light of the advances in process tracing methods. Before this burgeoning literature existed, Millian methods were called upon to accomplish two things at once: (1) Provide a justification for selecting two or more cases for social inquiry and (2) yield causal leverage via comparison and the elimination of potential explanatory factors as unnecessary or insufficient. But process tracing methodologists have showcased how the analysis of temporal variation disciplined via counterfactual analysis, congruence testing, and process-tracing tests renders within-case causal inference possible even

⁶ The proposed approach bears several similarities to Soifer (2018)'s fertile analysis of how "shadow cases" in comparative research can contribute to theory-building and empirical analysis.

in the absence of an empirical comparative case (George and Bennett 2005; Gerring 2007; Collier 2011; Mahoney 2012; Beach and Pedersen 2013; Bennett and Checkel 2015; Levy 2015). That is, the ability to make causal inferences need not be primarily determined at the case selection stage.

The foregoing implies that if a researcher does not take temporal dynamics into account when developing their theory, the use of Millian methods should do no more than to provisionally discount the explanatory purchase of a given explanatory factor. The researcher should then bear in mind that as the causal process is reconstructed from a given outcome, the provisionally discounted factor may nonetheless be shown to be of causal relevance – particularly if the underlying process is ordered or paced, or if equifinal pathways are possible.

Despite these limitations, Millian methods might fruitfully serve additional functions from the standpoint of case selection, particularly if researchers shift (1) when and (2) why they make use of them. First, Millian methods may be as – if not more – useful *after* process tracing of a particular case is completed rather than to set the stage for within-case analysis. Such a chronological reversal – process tracing followed by Millian case selection, instead of Millian case selection followed by process tracing – inherently embraces a more inductive, theory-building approach to case study research (Falleti and Mahoney 2015: 229-231) which, I suspect, is far more commonly used in practice than is acknowledged. I refer to this approach as *the method of inductive case selection*, where “theory-building process tracing” (Beach and Pedersen 2013: 16-18) of a single case is subsequently followed by the use of a most-similar or most-different cases design.

Getting Started: Selecting the Initial Case

The method of inductive case selection begins by assuming that the researcher has justifiable reasons for picking a particular case for process tracing and is subsequently looking to contextualize the findings or build a theory outwards. Hence the first step involves picking an initial case. Qualitative methodologists have already supplied a number of plausible logics for selecting a single case, and I describe three non-exhaustive possibilities here: (1) theoretical or historical importance; (2) policy relevance and salience; and (3) empirically puzzling nature.

First, an initial case may be selected due to its theoretical or historical importance. Eckstein (1975), for example, defines an idiographic case study as a case where the specific

empirical events/outcome serve as a central referent for a scholarly literature. As an illustration, Gerring and Cojocaru (2015: 11) point to North and Weingast (1989)'s influential study how the Glorious Revolution in 17th century Britain favorably shifted the constitutional balance of power for the government to make credible commitments to protecting property rights (paving the way for the financial revolution of the early 18th century). Given that so much of the scholarly debate amongst economic historians centers on the institutional foundations of economic growth, North and Weingast's case study was "chosen (it would appear) because of its central importance in the [historical political economy] literature on the topic, and because it is [...] a prominent and much-studied case" (Gerring and Cojocaru 2015: 11). In other words, North and Weingast (1989)'s study is idiographic in that it "aim[s] to explain and/or interpret a single historical episode," but it remains "theory-guided" in that it "focuses attention on some theoretically specified aspects of reality and neglects others" (Levy 2008: 4).

While the causes of the Glorious Revolution are a much-debated topic amongst economic historians, they have less relevance to researchers and practitioners focused on assessing the effects of contemporary public policy interventions. Hence a second logic for picking a first case for process tracing is its policy-relevance and salience. George and Bennett (2005: 263-286) define a policy-relevant case study as one where the outcome is of interest to policymakers and its causes are at least partially amenable to policy manipulation. For example, one recent World Bank case study (El-Saharty and Nagaraj 2015) analyzes how HIV/AIDS prevalence amongst vulnerable sub-populations – particularly female sex workers – can be reduced via targeted service delivery. To study this outcome, two states in India – Andhra Pradesh and Karnataka – were selected for process tracing. There are three reasons why this constitutes an appropriate policy-relevant case selection choice. First, the outcome of interest – a decline in HIV/AIDS prevalence amongst female sex workers – was present in both Indian states. Second, because India accounts for almost 17.5% of the world population and has a large population of female sex workers, this outcome was salient to the government (Ibid: 3). Third, the Indian government had created a four-phase "National AIDS Control Program (NACP)" spanning from 1986

through 2017, meaning that at least one set of possible explanatory factors for the decline in HIV/AIDS prevalence comprised policy interventions that could be manipulated.⁷

A third logic for picking an initial case for process tracing is its puzzling empirical nature. One obvious instantiation is when an exogenous shock or otherwise significant event/policy intervention yields a different outcome from the one scholars and practitioners expected.⁸ For example, in 2004 the federal government of Nigeria partnered with the World Bank to improve the share of Nigeria's urban population with access to piped drinking water. This partnership – the National Urban Water Sector Reform Project (NUWSRP1) – aimed to “increase access to piped water supply in selected urban areas by improving the reliability and financial viability of selected urban water utilities” and by shifting resources away from “infrastructure rehabilitation[s]” that had failed in the past (Hima and Santibanez 2015: 2). Despite \$200 million worth of investments, ultimately the NUWSRP1 “did not perform as strongly on the institutional reforms needed to ensure sustainability” (Ibid). Given this puzzling outcome, the World Bank conducted an intensive case study to ask why the program did “not fully meet its essential objective of achieving a sustainable water delivery service” (Ibid).⁹

The common thread of these three logics for selecting an initial case is that the case itself is theoretically or substantively important and that its empirical dynamics – underlying either the outcome itself or its relationship to some explanatory events – are not well understood. That being said, the method of inductive case selection merely presumes that there is some theoretical, policy-related, empirical, or normative justification to pick the initial case.

Probing Generalizability Via a Most Similar Cases Design

It is after picking an initial case that the method of inductive case selection contributes novel guidelines for case study researchers by reconfiguring how Millian methods are used. Namely, how should one (or more) additional cases be selected for comparison, and why? This question

⁷ This study found that the expansion of clinical services into government facilities embedded in the public health system, the introduction of peer educators, and the harmonization of large quantities of public health data underlay the timing and breadth of the decline in HIV/AIDS amongst female sex workers.

⁸ What Levy (2008:13) calls a “deviant” case – which “focus on observed empirical anomalies in existing theoretical propositions” – would also fit within the category of a puzzling case.

⁹ Process tracing revealed that a conjunction of factors – management turnover and a lackluster culture of staff performance at the state level, inadequate coordination at the federal level, premature disbursement of funds, and citizen aversion to the commercialization of the public water supply – underlay the initially perplexing underperformance of the urban water delivery project.

presumes that the researcher wishes to move beyond an idiographic, single-case study for the purposes of generating inferences that can travel. Yet in this effort, we should take seriously process tracing scholars' argument that causal mechanisms are often context-dependent. As a result, the selection of one or more comparative cases is not meant to uncover universally generalizable abstractions; rather, it is meant to contextualize the initial case within a set or family of cases that are spatio-temporally bounded.

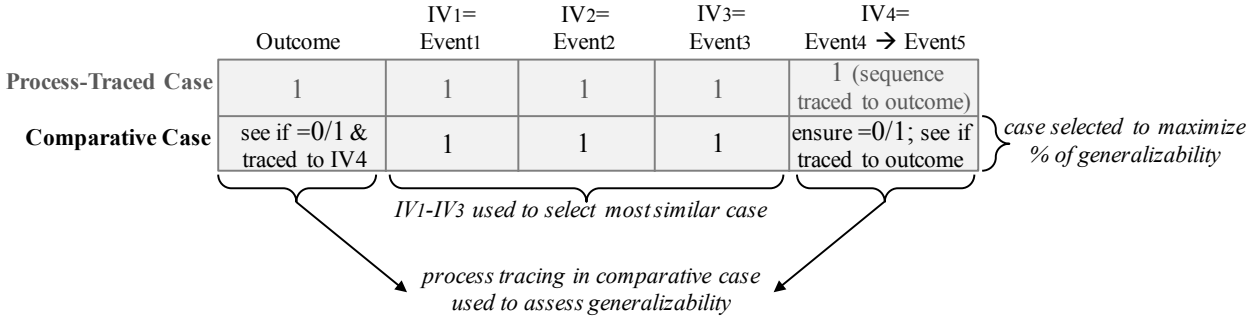
That being said, the first logical step is to understand whether the causal inferences yielded by the process-traced case can indeed travel to other contexts (Goertz 2017: 239). This constitutes the first reconfiguration of Millian methods: The use of comparative case studies to assess generalizability. Specifically, after within-case process tracing reveals a factor or sequence of factors as causally important to an outcome of interest, the logic is to select a case that is as contextually analogous as possible such that there is an higher probability that the causal process will operate similarly in the second case. This approach exploits the context-dependence of causal mechanisms to the researcher's advantage: Similarity of context increases the probability that a causal mechanism will operate similarly across both cases. By "context," it is useful to follow Falleti and Lynch (2009: 14) and to be

"concerned with a variety of contextual layers: those that are quite proximate to the input (e.g., in a study of the emergence of radical right-wing parties, one such layer might be the electoral system); exogenous shocks quite distant from the input that might nevertheless effect the functioning of the mechanism and, hence, the outcome (e.g., a rise in the price of oil that slows the economy and makes voters more sensitive to higher taxes); and the middle-range context that is neither completely exogenous nor tightly coupled to the input and so may include other relevant institutions and structures (the tax system, social solidarity) as well as more atmospheric conditions, such as rates of economic growth, flows of immigrants, trends in partisan identification, and the like."

For this approach to yield valuable insights, the researcher focuses on 'controlling' for as many of these contextual explanatory factors (crudely put, for as many independent variables) as possible. In other words, the researcher selects a most similar case: If the causal chain similarly operates in the second case, this would support the conclusion that the causal process is likely at

work across the constellation of cases bearing ‘family resemblances’ to the process-traced case (Soifer 2018). Figure 7 displays the logic of this design:

Figure 7: Probing Generalizability by Selecting a Most Similar Case



As in Figure 7, suppose that process tracing of Case 1 reveals that some sequence of events (in this example, event 4 followed by event 5) caused the outcome of interest. The researcher would then select a most similar case (a case with similar values/occurrences of other independent variables/events (here, IV1-IV3) that might also influence the outcome). The researcher would then scout whether the sequence in Case 1 (event 4 followed by event 5) also occurs in the comparative case. If it does, the expectation for a minimally generalizable theory is that it would produce a similar outcome in Case 2 as in Case 1. Correlatively, if the sequence does not occur in Case 2, the expectation is that it would not experience the same outcome as Case 1. These findings would provide evidence that the explanatory sequence (event 4 followed by event 5) has causal power that is generalizable across a set of cases bearing family resemblances.

For example, suppose a researcher studying democratization in Country A finds evidence congruent with the elite-centric theory of democratization of O’Donnell and Schmitter (1986) described previously. To assess causal generalizability, the researcher would subsequently select a case – Country B – that is similar in the background conditions that the literature has shown to be conducive to democratization, such as level of GDP per capita (Przeworski and Limongi 2000; Boix and Stokes 2003) or belonging to the same “wave” of democratization via spatial and temporal proximity (Collier 1991; Huntington 1993). Notice that these background conditions in Case B have to be at least partially exogenous to the causal process whose generalizability is being probed: That is, they cannot constitute the events that directly comprise the causal chain revealed in Case A. One way to think about them is as factors that in Case A appear to have been

necessary, but less proximate and important, conditions for the outcome. Here, importance is determined by the ‘extent that they are [logically/counterfactually] present only when the outcome is present’ (Mahoney et al. 2009: 119), whereas proximity is determined by the degree to which the condition is “tightly coupled” with the chain of events directly producing the outcome (Falleti and Mahoney 2015: 233).

An example related to the impact of service delivery in developmental contexts can be drawn from the World Bank’s case study of HIV/AIDS interventions in India. Recall that this case study actually spanned across two states: Andhra Pradesh and Karnataka. In a traditional comparative case study setup, the selection of both cases would seem to yield limited insights: After all, they are contextually similar – “Andhra Pradesh and Karnataka [...] represent the epicenter of the HIV/AIDS epidemic in India. In addition, they were early adopters of the targeted interventions” – and they also experience a similar outcome – “HIV/AIDS prevalence among female sex workers declined from 20 percent to 7 percent in Andhra Pradesh and from 15 percent to 5 percent in Karnataka between 2003 and 2011” (El-Saharty and Nagaraj 2015: 7; 3). In truth, this comparative case study design makes substantial sense: Had the researchers focused on the impact of the Indian government’s NACP program only in Andhra Pradesh or only in Karnataka, one might have argued that there was something unique about either state that rendered it impossible to generalize the causal inferences. By instead demonstrating that favorable public health outcomes can be traced to the NACP program in both states, the researchers can support the argument that the intervention would likely prove successful to other contexts to the extent that they are similar to Andhra Pradesh and Karnataka.

One risk of the foregoing approach is highlighted by Sewell (2005: 95-96): Contextual similarity may suggest cross-case interactions that hamper the ability to treat the second, most similar case as if it were independent of the process-traced case. For example, an extensive body of research has underscored how protests often diffuse across proximate spatio-temporal contexts through mimicry and the modularity of repertoires of contention (Tilly 1995; Tarrow 1998). And returning to the World Bank case study of HIV/AIDS interventions in Andhra Pradesh and Karnataka, one concern is that because these states share a common border, cross-state learning or other interactions might limit the value added of a comparative design over a single case study, since the second case may not constitute truly new data. The researcher should be highly sensitive to this possibility when selecting and subsequently process tracing the most similar

case: The greater the likelihood of cross-case interactions, the lesser the likelihood that it is a case-specific causal process – as opposed to cross-case diffusion mechanism – that is doing most of the explanatory work.

Conversely, if the causal chain is found to operate differently in the second, most similar case, then the researcher can make an argument for rejecting the generalizability of the causal explanation with some confidence. The conclusion would be that the causal process is *sui generis* and requires the “localization” of the theoretical explanation for the outcome of interest (Tarrow 2010: 251-252). In short, this would suggest that the process-traced case is an exceptional or deviant case, given a lack of causal generalizability even to cases bearing strong family resemblances. Here, we are using the 'strong' notion of 'deviant:'. The inability of a causal process to generalize to similar contexts substantially decreases the likelihood that “other cases” could be explained with reference (or even in opposition) to the process-traced case.

There is, of course, the risk that by getting mired in the weeds of the first case, the researcher is unable to recognize how the overall chronology of events and causal logics in the most similar case strongly resembles the process-traced case. That is, a null finding of generalizability in a most similar context calls on the researcher to probe whether they have descended too far down the “ladder of generality,” requiring more abstract conceptual categories to compare effectively (Sartori 1970; Collier and Levitsky 1997).

Probing Scope Conditions and Equifinality Via a Most Different Cases Design

A researcher that has process-traced a given case and revealed a factor or sequence of factors as causally relevant may also benefit from leveraging a most different cases approach. This case selection technique yields complementary insights to the most similar cases design described in the previous section, but its focus is altogether different: Instead of uncovering the degree to which an identified causal process travels, the objective is to try to understand where and why it fails to travel and whether alternative pathways to the same outcome may be possible.

More precisely, by selecting a case that differs substantially from the process-traced case in background characteristics, the researcher maximizes contextual heterogeneity and the likelihood that the causal process will not generalize to the second case (Soifer 2018). Put differently, the scholar would be selecting a least likely case for generalizability, because the context-dependence of causal mechanisms renders it unlikely that the same sequence of events

will generate the same outcome in the second case. This would offer a first cut at establishing “scope conditions” upon the generalizability of the theory (Tarrow 2010: 251) by isolating which contextual factors prevented the process from producing the outcome in the most different case.

Figure 8 provides a visual illustration of what this design could look like. Suppose, once more, that process tracing in Case 1 has revealed that some event 4 followed by event 5 generated the outcome of interest. To maximize the probability that we will be able to place scope conditions on this finding, we would select a comparative case that is most different to the process-traced case (a case with different values/occurrences of other independent variables/events (denoted as IV1-IV3 in Figure 8) that might also influence the outcome) but which also experienced the sequence of event 4 followed by event 5. Given the contextual differences between these two cases, the likelihood that the same sequence will produce the same outcome in both is low, which then opens up opportunities for the researcher to probe the logic of scope conditions. In this endeavor, temporality can serve as a useful guide: A means for restricting the set of potential contextual factors that prevented the causal process from reproducing the outcome in Case 2 is to identify at what chronological point the linkages between events 4 and 5 on the one hand and the outcome of interest on the other hand branched off from the way they unfolded in Case 1. The researcher can then scout which contextual factors exuded the greatest influence at that temporal location and identify them as central to the scope conditions to be placed upon the findings.

Figure 8: *Probing Scope Conditions by Selecting a Most Different Case*

	Outcome	IV1= Event1	IV2= Event2	IV3= Event3	IV4= Event4 → Events
Process-Traced Case	1	1	0	1	1 (sequence traced to outcome)
Comparative Case	see if =1 & traced to IV4	0	1	0	ensure =1; see if traced to outcome

IV1-IV3 used to select most different case
process tracing in comparative case used to discern possible scope conditions
case selected to minimize % of generalizability

To provide an example for how this logic of inquiry can work, consider a recent case study focused on understanding the effectiveness of Mexico’s conditional cash transfer program – *Oportunidades*, the first program of its kind – in providing monetary support to the female heads

of indigenous households (Alva Estrabridis and Ortega Nieto 2015). The program suffered from the fact that indigenous beneficiaries dropped out at higher rates than their non-indigenous counterparts. In 2009 the World Bank spearheaded an Indigenous Peoples Plan (IPP) to bolster service delivery of cash transfers to indigenous populations, which crucially included “catering to indigenous peoples in their native languages and disseminating information in their languages” (Ibid: 2). A subsequent impact evaluation found that “[w]hen program messages were offered in beneficiaries’ mother tongues, they were more convincing, and beneficiaries tended to participate and express themselves more actively” (Ibid; Mir et al. 2011).

Researchers might well be interested in the portability of the foregoing finding, in which case the previously described most-similar cases design is appropriate – for example, a comparison with the *Familias en Accion* program in Colombia may be undertaken (Attenasio et al. 2005). But they might also be interested in the limits of the policy intervention – in understanding where and why it is unlikely to yield similar outcomes. To assess the scope conditions upon the “bilingualism” effect of cash transfer programs, a most different cases design is appropriate. Thankfully, conditional cash transfer programs are increasingly common even in historical, cultural, and linguistic contexts markedly different from Mexico, most prominently in sub-Saharan Africa (Lagarde et al. 2007; Garcia and Moore 2012). Selecting a comparative case from sub-Saharan Africa should prove effective for probing scope conditions: The more divergent the contextual factors, the less likely it is that the policy intervention will produce the same outcome in both contexts.

On the flip side, in the unlikely event that part or all of the causal process is nonetheless reproduced in the most different case, the researcher would obtain a strong signal that they have identified one of those rare causal explanations of general scope. In coming to this conclusion, however, the researcher should be wary of “conceptual stretching” (Sartori 1970: 1034), such that there is confidence that the similarity in the causal chain across the most different cases lies at the empirical level and is not an artificial byproduct of imprecise conceptual categories (Bennett and Checkel 2015: 10-11). Here process tracing, by pushing researchers to not only specify a sequence of “tightly-coupled” events (Falleti and Mahoney 2015: 233), but also to collect observable implications about the causal mechanisms concatenating these events, can guard against conceptual stretching: By opening the “black box” of causation through detailed

within-case analysis, process tracing limits the researcher’s ability to posit “pseudo-equivalences” across contexts (Sartori 1970: 1035).

Selecting a most different case vis-à-vis the process-traced case is also an excellent strategy for probing equifinality – for maximizing the likelihood that the scholar will be able to probe multiple causal pathways to the same outcome. To do so, it is not sufficient to merely ensure divergence in background conditions; it is equally necessary to follow Mill’s method of agreement by ensuring that the outcome in the process-traced case is also present in the second, most different case. By ensuring minimal variation in outcome, the scholar guarantees that process tracing the second case will lead to the desired destination; By ensuring maximal variation in background conditions, the scholar substantially increases the likelihood that process tracing will reveal a slightly or significantly different causal pathway to said destination. Should an alternative route to the outcome be found, then its generalizability could be assessed using the most similar cases approach described previously.

Figure 9: Probing Equifinality by Selecting a Most Different Case with the Same Outcome

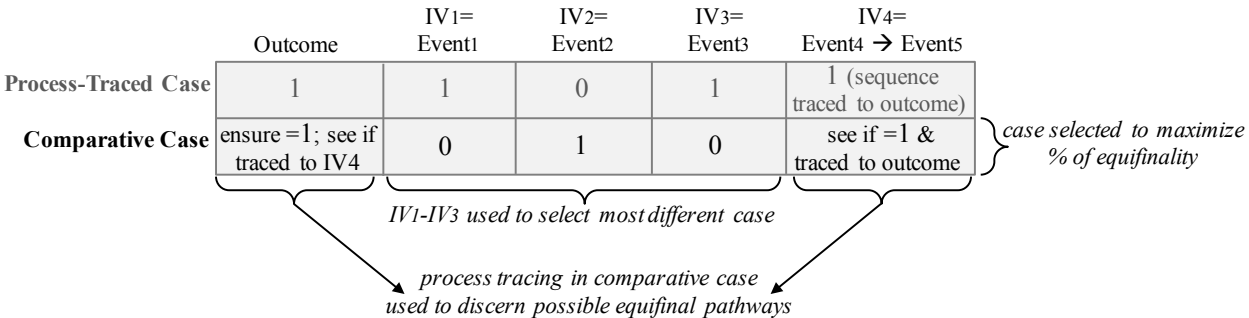


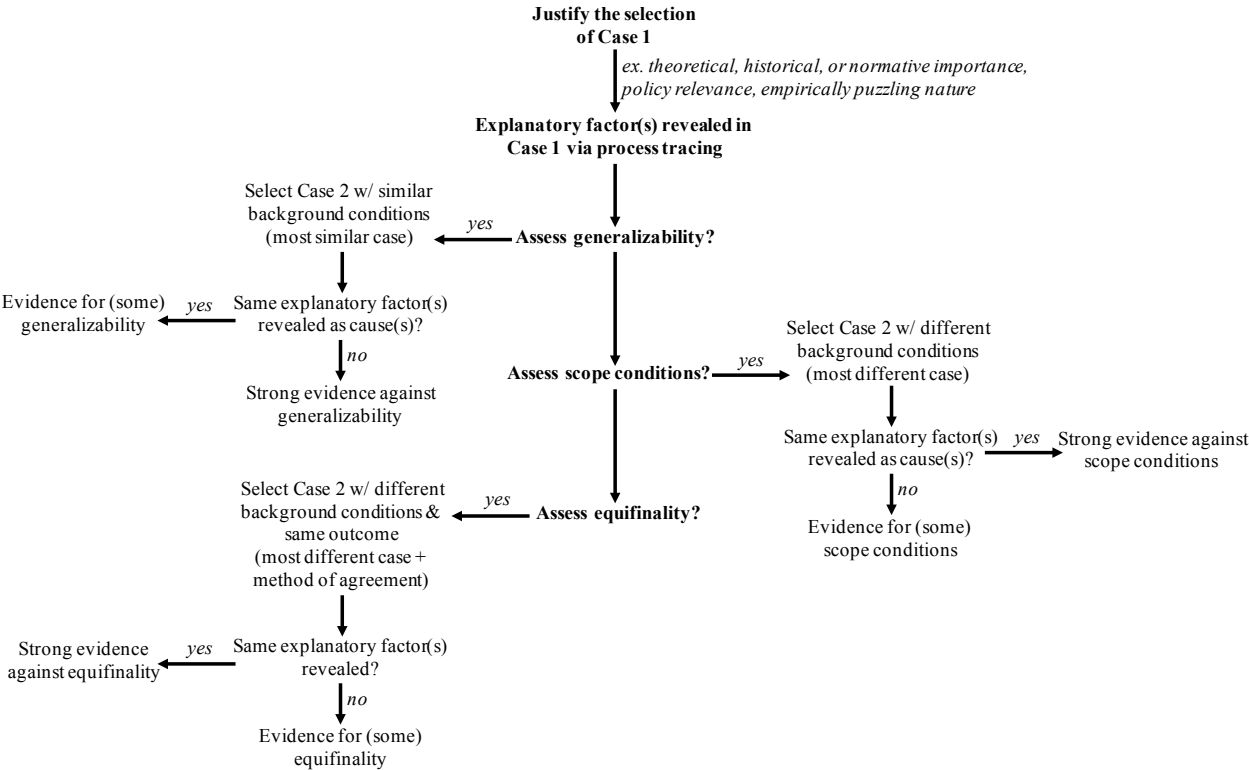
Figure 9 visualizes what this case selection design might look like. Here, as in previous examples, suppose process tracing in Case 1 provides evidence that event 4 followed by event 5 produced the outcome of interest. The researcher then selects a case with the same outcome, but with different values/occurrences of some independent variables/events (in this case, IV1-IV3) that may influence the outcome. Working backwards from the outcome to reconstruct the causal chain that produced it, the researcher then probes whether (i) the sequence (event 4 followed by event 5) also occurred in Case 2, and (ii) whether the outcome of interest can be retraced to said sequence. Given the contextual dissimilarities between these most different cases, such a finding is rather unlikely, which would subsequently enable to the researcher to probe whether some

other factor (perhaps IV2/event 2 in the example of Figure 9) produced the outcome in the comparative case instead, which would comprise clear evidence of equifinality.

To return to the concrete example of Mexico’s conditional cash transfer program’s successful outreach to marginalized populations via bilingual service provision, an alternative route to the same outcome might be unearthed if a cash transfer program without bilingual outreach implemented in a country characterized by different linguistic, gender, and financial decision-making norms proves similarly successful in targeting marginalized populations. Several factors – including recruitment procedures, the size of the cash transfers, the requirements for participation, and the supply of other benefits (Lagarde et al. 2007: 1902) – could interact with the different setting to produce similar intervention outcomes, regardless of whether multilingual services are provided. Such a finding would suggest that these policy interventions can be designed in multiple ways and still prove effective.

To conclude, the method of inductive case selection complements within-case analysis by supplying a coherent logic for probing generalizability, scope conditions, and equifinality. To summarize, Figure 10 provides a roadmap of this approach to comparative case selection:

Figure 10: Case Selection Roadmap to Assess Generalizability, Scope Conditions, Equifinality



In short, if the researcher has the requisite time and resources, a multi-stage use of Millian methods to conduct four comparative case studies could prove very fertile. The researcher would begin by selecting a second, most-similar case to assess causal generalizability to a family of cases similar to the process-traced case; Subsequently, a third, most-different case would be selected to surface possible scope conditions blocking the portability of the theory to divergent contexts; and a fourth, most different case experiencing the same outcome would be picked to probe equifinal pathways. This sequential, four-case comparison would substantially improve the researcher's ability to map the portability and contours of both their empirical analysis and their theoretical claims.¹¹

V. Conclusion

The method of inductive case selection converts process tracing meant to simply “craft a minimally sufficient explanation of a particular outcome” into a methodology used to build and refine a causal theory – a form of “theory-building process-tracing” (Ibid: 16-18). Millian methods are called upon to probe the portability of a particular causal process or causal mechanism and to specify the logics of its relative contextual-dependence. In so doing, they enable theory-building without presuming that the case study researcher holds the *a priori* knowledge necessary to account for complex temporal dynamics at the deductive theorizing stage. Both of these approaches – deductive, processualist theorizing on the one hand, and the method of inductive case selection on the other hand – provide some insurance against Millian methods leading the researcher into ignoring the ordered, paced, or equifinal structure that may underlie the pathway(s) outcome of interest. But, I would argue, the more inductive approach is uniquely suited for research that is not only process-sensitive, but also open to novel insights supplied by the empirical world that may not be captured by existing theories.

Furthermore, case study research often does (and should!) proceed with the scholar outlining why an outcome is of interest, and then seeking ways to not only make inferences about what produced said outcome (via process tracing) but situating it within a broader empirical and theoretical landscape (via the method of inductive case selection). This approach pushes scholars to answer that pesky yet fundamental question – why should we care or be

¹¹ Many thanks to Rory Truex for highlighting this implication of the roadmap in Figure 5.

interested in this case/outcome? – before disciplining their drive for generalizable causal inferences. After all, the deductive use of Millian methods tell us nothing about why we should care about the cases selected – yet arguably this is an essential component of any case selection justification. By deploying a most similar or most different cases design after an initial case has been justifiably selected due to its theoretical or historical importance, policy relevance, or puzzling empirical nature, the researcher is nudged towards undertaking case study research yielding causal theories that are not only comparatively engaged, but also substantively interesting.

The method of inductive case selection is most useful when the foregoing approach constitutes the *esprit* of the case study researcher. Undoubtedly, deductively-oriented case study research (see Lieberman 2005; 2015) and traditional uses of Millian methods will continue to contribute to social scientific understanding. Nevertheless the perils of ignoring important sequential causal dynamics – particularly in the absence of good, processualist theories – should caution researchers to proceed with the greatest of care. In particular researchers should be willing to revise both theory building and research design to its more inductive variant should process tracing reveal temporal sequences that eschew the analytic possibilities of the traditional comparative method.

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