

Advances in Comparative-Historical Analysis

Strategies for Social Inquiry

Advances in Comparative-Historical Analysis

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Advances in Comparative-Historical Analysis

Against the backdrop of an explosion of interest in new techniques for data collection and theory testing, this volume provides a fresh programmatic statement about comparative-historical analysis. It examines the advances and distinctive contributions that CHA has made to theory generation and the explanation of large-scale outcomes that newer approaches often regard as empirically intractable. An introductory essay locates the sources of CHA's enduring influence in core characteristics that distinguish this approach, such as its attention to process and its commitment to empirically grounded, deep case-based research. Subsequent chapters explore broad research programs inspired by CHA work; new analytic tools for studying temporal processes and institutional dynamics; and recent methodological tools for analyzing sequences and for combining CHA work with other approaches. This volume is essential reading for scholars seeking to learn about the sources of CHA's enduring influence and its contemporary analytical and methodological techniques.

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Tulia G. Falletti and James Mahoney

Although comparative-historical analysis (CHA) is often understood to entail the comparison of a small to medium number of cases (usually countries or other macro units), we argue in this chapter that it may be more informative to say that this field involves the systematic comparison of sequences (Rueschemeyer and Stephens 1997). We suggest that a principal overarching methodology of comparative-historical analysis is the *comparative sequential method* (see Falletti 2010, 20–4). This method is defined by the systematic comparison of two or more historical sequences. In CHA, the “cases” studied nearly always are decomposed into sequences of events, and CHA causal claims rest upon the inferences derived from the analysis and comparison of those sequences. To take a classic example, Barrington Moore’s (1966) main cases in *Social Origins of Dictatorship and Democracy* include countries such as England, France, the United States, and Germany. But these cases are studied as types of sequences of events that unfold over time. These sequences are the central units of comparison, and they provide the main basis for Moore’s inferences about the causes of dictatorship and democracy.

The comparative sequential method is an overarching methodology in the sense that it can and must encompass more specific methods of cross-case analysis and within-case analysis. The main cross-case methods include simple matching tools such as J. S. Mill’s methods of agreement and difference as well as more complex tools such as statistical analysis and qualitative comparative analysis (QCA). The within-case methods include inductive process tracing and modes of hypothesis testing such as hoop tests and counterfactual analysis. In this chapter, we show how cross-case (in particular, Millian) methods and within-case (specifically, process tracing) are put to use to analyze and compare sequences of events in CHA. We argue that, depending on the *kind* of sequential argument, contrasting sets of methods are more or less

appropriate – and more or less useful – as tools for analyzing sequences and carrying out causal assessment.

To briefly foreshadow our arguments, we contend that process tracing is especially valuable for establishing the features of the events that compose individual sequences (e.g., their duration, order, and pace) as well as the causal mechanisms that link them together. There is no substitute for process tracing when analyzing the events that make up the sequences and processes that are studied in comparative-historical research. For their part, cross-case methods are the basis through which CHA scholars compare and contrast sequences and processes. These methods are used to evaluate whether the specific features of a sequence (e.g., the ordering of events) affect outcomes of interest in previously hypothesized ways. As we highlight, the comparative sequential method brings together the literature on temporality with the literature on case-study methods of causal inference.

Conceptual building blocks

We begin our explication of the comparative sequential method by introducing and defining the concepts that form the building blocks of this approach, emphasizing the distinctions between event and occurrence, and between sequence and process.

Events, occurrences, sequences, and processes

Events are spatially and temporally bounded happenings that can be compared across cases (cf. Abbott 2001; Griffin 1992; Sewell 1996). They are defined by general characteristics specified by the investigator, such that all instances of a given event have certain features in common. Different events are marked by different characteristics, which can vary significantly, depending on their level of analysis (e.g., an assassination versus an international systemic change), their duration (e.g., an economic shock versus an economic depression), their scope of change (a coup versus a revolution), and so on. Events have a fractal character, such that more micro events are always embedded within any given event (e.g., Grzymala-Busse 2011, 1281; Sewell 1996). By our definition, however, events are always happenings that have *general characteristics* that allow for them to apply to multiple cases. With an event, one can inquire meaningfully whether or the extent to which two or more cases experience

8 The comparative sequential method

the same event. Although some historical events may occur only once, if they are events, they could *in principle* have occurred multiple times.

By contrast, we reserve the term *occurrence* for a noncomparable happening that is, by definition, distinctive to a single case. The assassination of Martin Luther King Jr., the Great Depression, World War I, and the 1973 military coup in Chile are examples of occurrences. An occurrence can be recast as an event by viewing it at a more general level of analysis. Thus, these occurrences could be viewed as events if recast as an assassination, a depression, a war, and a military coup. Comparative-historical researchers often discuss occurrences in their historical narratives, but, when these occurrences are given analytic weight in explanation, they are treated as events – that is, as instances of more general phenomena that can be compared across units (Gerring 2007).

Both events and occurrences take place against the backdrop of – and interact with – temporal and spatial *contexts*. The contexts in which events and occurrences occur provide them with meaning and shape their causal effects. A given occurrence or event may trigger a certain reaction or series of events and ultimately an outcome in a given context but a different sequence and outcome in an alternative context (Falletti and Lynch 2009). For example, the bipolar international context of the post–World War II period made the rise of leftist ideologies and governments in the 1960s and 1970s in Latin America a serious political threat in the eyes of large portions of the population. Within that international context, many saw the military coups of that time as a remedy to or a lesser evil than the threat of communism. However, since the inception of the new century, and in a unipolar international context, the rise of the Left in Latin America does not invoke the same ideas of political threat that could explain or justify military intervention.

A *sequence* is a temporally ordered set of events that takes place in a given context (cf. Abbott 2001; Aminzade 1992; Pierson 2004). For example, and to oversimplify, Moore constructs the following sequence for England in the context of early modern Europe: royal peace (event A) → commercialization of agriculture (event B) → destruction of traditional peasantry (event C) and emergence of a strong bourgeoisie (event D) → parliamentary democracy (outcome). The “case” of England is decomposed into events like these that unfold over time in the narrative. Likewise, to use the example of Elizabeth Wood’s (2000) insurgent path to democracy, the following sequence of events led to pacted transitions to democracy in El Salvador and South Africa in the specific context of oligarchic societies with extra-economic coercion of labor: sustained mobilization from below (event A) → decline of profits in the

traditional economic sectors (event B) → change of elite's economic interests (event C) → negotiated transition to democracy (outcome).

In the narratives by Moore and Wood, events are presented as occurrences distinctive to particular cases. For instance, the development of capitalist agriculture in England is discussed by Moore as the Enclosure Movement, which was a singular occurrence. However, he makes it clear that the Enclosure Movement was a transition to capitalist agriculture. Likewise, in Wood's narrative, events such as sustained mobilization from below took different specific forms in El Salvador and South Africa. In El Salvador, sustained mobilization entailed a civil war led by the FMLN (Farabundo Martí Front for National Liberation), whereas in South Africa labor militancy – not guerilla actions – constituted the ANC (African National Congress) as an insurgent counterelite (Wood 2000, 132). While the occurrences are distinctive in each case, they constitute the same event: sustained mobilization from below. When comparative-historical analysts assert that their arguments are consistent with nuanced historical evidence, they often mean that the events in their sequences encompass key occurrences from the societies under study.

Last, a *process* is a particular type of sequence in which the temporally ordered events belong to a single coherent mode of activity. Processes often describe transitions between states, including movement toward a new state or movement away from a prior state. Examples of social, political, and economic processes are democratization, social mobilization, privatization, flexibilization of labor, regulation, and decentralization (examples of natural processes are aging, photosynthesis, evaporation, and combustion). Like events, processes have a fractal character in that smaller, partial, or more restricted processes may be part of larger and more encompassing ones. For example, the process of suffrage expansion is part of a larger process of democratization.

Within a process, the researcher can identify the component events that unfold over time from the start to the end of the theoretically relevant period of analysis. The researcher can identify such events because they belong to a single coherent pattern of reproductive or transformative activity. Thus, the researcher can establish whether the temporal succession of events tends to reproduce the initial conditions and early characteristics of the unit of analysis or whether the events trigger reaction/counterreaction dynamics that considerably change the unit of analysis. In her study of postdevelopmental decentralization in four Latin American countries, Falletti (2010) identifies the specific policies and legal and constitutional changes of administrative, fiscal, and political decentralization, which are the three main component events of

the process of postdevelopmental decentralization. She also explains why the process of decentralization had reproducing features in the cases of Argentina, Brazil, and Colombia but entailed a reactive logic in Mexico.

We contend that CHA is often fundamentally concerned with the comparison of sequences operating in particular contexts, whether these are composed of events that are part of a single underlying process or events that refer to multiple processes. For instance, and to oversimplify again, part of Moore's narrative sequence for China is maintenance of traditional agriculture (event A) → lack of empowerment of the bourgeoisie (event B) and empowerment of the peasantry (event C) → revolution from below (event D) → communist dictatorship (outcome).¹ When one compares this sequence with the earlier sequence for England, one can start to see how Moore arrived at his central insights, such as the necessary role of the commercialization of agriculture (an event that refers to a process of economic transformation) and a strong bourgeoisie (which refers to a process of social class formation) for democracy as well as the importance of a strong traditional peasantry (class formation) and revolution (social mobilization) for communist dictatorship. In Wood's case, the comparison of two dissimilar cases allows her to isolate the common contextual factors (oligarchical societies with extra-economic coercion of labor) that triggered the common sequence of events (protracted mobilization from below and change in elites' interests) and that resulted in negotiated democratic transitions.

Elucidating the concepts of event, sequence, and process allows us to understand the basic units of comparison in much CHA. While CHA scholars do make comparative statements about "whole cases" (e.g., England versus China), these comparative statements are grounded in more disaggregated comparisons of events, sequences, and processes. These disaggregated comparisons are the basis through which CHA researchers make generalizations about the macro units under study.

Types of sequences and processes

Works of CHA vary in the kinds of sequential arguments they construct and compare. In classifying and analyzing ideal-typical sequential arguments, we proceed

¹ As this example suggests, causal sequences may be composed of "nonevents" in which the absence of a happening during a specific temporal period is causally consequential. The outcomes of sequences may also be nonevents. A good example is Tannenwald's (2008) explanation of the "nonuse" of nuclear weapons in the United States since World War II.

in four stages.² First, we classify sequences according to whether their constituent events are causally connected and distinguish between *causal sequences* and *strictly temporal sequences*. Second, we argue that the order and pace of events can be causally consequential for the outcome of interest. We thus also identify *ordered* and *paced* sequences to describe those sequences (whether causal or strictly temporal) in which event ordering and pace matter.

Third, we distinguish process-type sequences depending on whether the direction of initial steps helps establish the direction of the entire sequence. Do initial steps in a particular direction (e.g., toward a particular outcome) induce further movement in that same direction? We specifically distinguish between *self-reproducing processes* (the direction of early steps is followed) and *reactive processes* (the direction of early steps is not followed).

Finally, we distinguish three kinds of self-reproducing processes by taking into account the specific nature of reproduction. In particular, we consider whether the reproductive pattern involves a process of continuity, expansion, or diminishment. On this basis, we identify: *continuous*, *self-amplifying*, and *self-eroding processes*.

These distinctions are analytically and methodologically important because different sequences and processes must be analyzed in different ways, including often with distinct methods. For example, the ways in which process tracing can be most productively applied varies depending on the *kind* of sequence under analysis. Thus, we return to these distinctions in the next sections when we explore cross-case and within-case methods.

Causal and strictly temporal sequences

Most CHA studies formulate *causal sequential arguments* in which the events in a sequence are understood to be causally connected to one another. These causal chains start with an antecedent cause or condition (*X*) and, through a series of causally connected events (events *A*, *B*, *C*, and so on), culminate in a final outcome of interest (*Y*), as illustrated in the top left quadrant of Table 8.1. These types of sequential arguments can be thought of as pathway explanations. The nature of the causal linkages among events can vary; each event may be understood as necessary for each subsequent event, as

2. It is worth emphasizing this is an ideal-typical classification of sequences, which for the most part thinks of sequences as self-contained units. In reality, however, sequences are often multilayered or interact and intersect with other sequences in complex ways. Some of these nuances will come to the fore in the analysis of Goldstone's (1998) work below.

Table 8.1 Types of sequential arguments in CHA

According to type of linkage between events	According to temporal effects of events	
	Ordered	Paced
Causal	Causally ordered sequences	Causally paced sequences
$X \rightarrow A \rightarrow B \rightarrow C \rightarrow Y$	$X \rightarrow A \rightarrow B \rightarrow C \rightarrow D \rightarrow E \rightarrow Y$	$Fast A \rightarrow B \rightarrow Y$
$\sim X \rightarrow \sim A \rightarrow \sim B \rightarrow \sim C \rightarrow \sim Y$	$X \rightarrow A \rightarrow C \rightarrow D \rightarrow E \rightarrow B \rightarrow \sim Y$	$Slow A \rightarrow B \rightarrow \sim Y$
(Ex.: Rustow 1970)	(Ex.: Rueschmeyer, Stephens, and Stephens 1992)	(Ex.: Collier and Collier 1991; Ahmed 2013)
Strictly temporal	Temporally ordered sequences	Temporally paced sequences
$A \rightarrow B \rightarrow Y$	$A \rightarrow B \rightarrow C \rightarrow Y$	$Fast A \rightarrow B \rightarrow Y$
$B \rightarrow A \rightarrow \sim Y$	$C \rightarrow B \rightarrow A \rightarrow \sim Y$	$Slow A \rightarrow B \rightarrow \sim Y$
(Ex.: Dahl 1971)	(Ex.: Falletti 2010; Smith 2007)	(Ex.: Skocpol 1979)

Notes: \rightarrow indicates causal relationship; \sim indicates lack of causal relationship.

probabilistically increasing the likelihood of each subsequent event, or as a part of conditions that are sufficient for each subsequent event.

Rustow's (1970) theory of the origins of democracy provides a good example of a causal sequential argument, in which the earlier events are necessary conditions for later ones.³ Rustow starts his model with national unity, which he considers a necessary background condition (*X*) (we can also call it context) before the process of democracy can take off. The timing of this event in relation to the first stage of democratization is irrelevant; it may have happened in the recent or in the distant past (Rustow 1970, 351). The process of democratization itself starts with the preparatory phase (event *A*), a period of prolonged and inconclusive political struggle among social classes. Next is the decision phase (event *B*), when the political leadership accepts the existence of diversity and institutionalizes some crucial aspects of democratic procedure (355). This second phase leads to the final habitational phase (event *C*), when the population at large accepts the leadership agreement. In Rustow's model, each event (using our terminology, or phase, using his) is a necessary cause for the event that follows, and the end result is democracy. In this type of causal sequential argument with necessary conditions, the absence of any event entails the absence of outcome.

3. In an excellent analysis of the comparative politics literature on democratization in relation to temporal and institutional arguments, Barrechea, Gibson, and Terrie (forthcoming) cite the works of Rustow and Dahl as examples of sequential arguments. We draw from their article to further explore these early works of democratization as examples of *causal* and *strictly temporal* types of sequential arguments.

CHA works also often encompass the analysis of sequences in which the events are not causally connected to each other, but the temporality of these events (their duration, order, pace, or timing) is causally consequential for the outcome of interest (see second row in Table 8.1). We call these *strictly temporal sequential arguments*.

Dahl (1971) provides excellent examples of strictly temporal sequences in his analysis of the historical events leading to democratization. Dahl asks: "Does sequence matter? Are some sequences more likely than others to lead to mutual security and thus to facilitate the shift toward a more polyarchal regime?" (31). His answer is a resounding yes. When the process of liberalization (or increased public contestation, event *A*) precedes the process of inclusiveness (or increased popular participation, event *B*), the resulting polyarchal regime is more stable (*Y*), as was the case in England and Sweden. On the contrary, "when the suffrage is extended *before* the arts of competitive politics have been mastered" [event *B* before *A*], the resulting political regimes are unstable and could easily reverse to authoritarianism, as was the case in Weimar Germany (Dahl 1971, 38 and following). But contestation does not cause participation, or vice versa (see also Grzymala-Busse 2011, 1275). Instead, Dahl argues that the order of these events is causally consequential for democratic stability as a result of an exogenous factor: the process of political socialization of the excluded social strata, which takes place between the time of increased elite competition and the time of increased popular participation (Dahl 1971, 36). In other words, Dahl suggests that elite competition causes political socialization and the moderation of the masses, a phenomenon that in turn facilitates political regime stability provided it happens before increased participation. Hence, the order in which participation and competition occur is consequential to the political regime's stability, but competition does not cause participation (or vice versa).

Ordered and paced sequences

In both the causal and strictly temporal types of sequential arguments in CHA, the order and pace of the events may be causally relevant. Thus, we distinguish between *ordered sequential arguments* and *paced sequential arguments*. With ordered sequential arguments, the temporal order of the events in a sequence is causally consequential for the outcome of interest (Abbott 2001; Aminzade 1992; Falletti 2010; Jacobs 2008; Pierson 2004). *Timing matters* in the sense that the temporal relationship among events is consequential. For example, Smith (2007) makes an ordered sequential argument: the timing of

oil wealth exploitation in relation to economic development and state institutional building is consequential to regime stability. As he writes, "The effect of oil wealth on politics and institutions is not a question of *whether* oil but *when*" in relation to economic development and state institutional building (193). Falletti (2010) makes a similar ordered sequential claim. She argues that if political decentralization precedes administrative decentralization in the sequence of decentralization reforms, subnational governments are likely to end up with higher levels of political and fiscal autonomy than if the order of events is the reverse.

The events in an ordered sequential argument may or may not be causally connected. Rueschmeyer, Stephens, and Stephens's (1992) classic work on capitalist development and democracy provides a good example of a causal and ordered sequential argument. In this pathway explanation, the earlier events are (for the most part) sufficient for each subsequent event. Schematically, the authors argue that capitalism, with its consequent process of industrialization (event *A*) weakens the landed upper class (event *B*) and strengthens the working and other subordinate classes (event *C*), who are brought together in factories and cities, where they associate and organize (event *D*). Capitalism, moreover, improves the means of communication and transportation, facilitating nationwide organization (reinforcing event *D*). Thus, the working class can successfully demand its own political incorporation (event *E*), which results in successful democratization (outcome *Y*) (Rueschmeyer, Stephens, and Stephens 1992, 271–2).⁴ If the sequence was different, such that the weakening of the landed upper class happened after labor class incorporation (i.e., event *E* preceded event *B*), the result would be a highly unstable regime or a reversal to authoritarianism (as was the case in Argentina after working class incorporation with Peronism).

Paced sequential arguments are similar to ordered sequences except that the speed or duration of events – not their timing relative to one another – is causally consequential (Abbott 2001; Aminzade 1992; Grzymala-Busse 2011; Pierson 2004).⁵ For example, in Collier and Collier's (1991) causal sequential argument of regime type, the unusually extended duration of labor incorporation in Mexico (slow event *A*) meant that this episode lasted until the

⁴ Rueschmeyer, Stephens, and Stephens (1992) also analyze transnational and state-centered processes in their explanation of democracy.

⁵ Our general category of paced sequential argument encompasses more fine-grained distinctions found in other work on temporality (e.g., Aminzade 1992; Grzymala-Busse 2011). For our purposes here, the general category of paced sequential argument is useful, though we recognize that it includes considerations about duration, speed, and pace that others may want to keep distinct.

Table 8.2 Types of processes in CHA

Type of process	Definition	Diagram of process	Examples
<i>Self-reproducing</i>	Initial events in a particular direction induce subsequent events to move the process in the same direction.	<i>Continuous process</i> $A \rightarrow A \rightarrow A \rightarrow A \rightarrow A$	Jacobs (2010); Skocpol (1999)
		<i>Self-amplifying process</i> $A \rightarrow A \rightarrow A \rightarrow A \rightarrow A$	Arthur (1994); David (1985); Spruyt (1994)
		<i>Self-eroding process</i> $A \rightarrow A \rightarrow A \rightarrow A \rightarrow A$	Onoma (2010); Rosenblatt (2013)
<i>Reactive</i>	Events are linked via reaction/counterreaction dynamics.	$A \rightarrow \sim A \rightarrow B \rightarrow \sim B \rightarrow Y$	Collier and Collier (1991); Riofrancos (2014)

amplify (e.g., the concentration of elite power over time); or (3) erode (e.g., institutional decay dynamics). These differences in reproductive logic permit us to distinguish three types of self-reproducing processes: *continuous*, *self-amplifying*, and *self-eroding processes*, represented graphically in Table 8.2.

In a *continuous process*, an early event is stably reproduced over time or leads to other events that maintain the underlying process in (approximately) a continuously stable form. Scholars often formulate continuous sequential arguments to characterize the perpetuation of longstanding policies, such as social security in the United States (Jacobs 2010). Organizational continuity often can also be described as a continuous process (e.g., Skocpol 1999).⁶ Other phenomena that are often analyzed as continuous processes include cultural characteristics, institutional outcomes, and geographic features.

With a *self-amplifying process*, the initial events move the sequence in a particular direction, such that it becomes more and more likely that the process will be expanded, increased, strengthened, or otherwise enhanced. Over time, the process (or its outcome) does not remain stable but increases, grows, or becomes more prominent as a result of self-amplifying mechanisms. Famous examples of self-amplifying processes come from economic history, where technologies capitalize on small initial advantages and experience rapid proliferation via increasing returns (e.g., Arthur 1994; David 1985). Likewise, evolutionary processes are often subject to self-amplification as an innovation and adaptation spreads within a population. The proliferation of the modern state has been explained in these terms (Spruyt 1994). Economists characterize self-amplifying processes with the expression *increasing returns*.

⁶ At times, a continuous background process may become, in the words of Soifer (2012), a permissive condition for change, combining with an intersecting sequence of events, at which juncture the process's logic of reproduction may change to a self-amplifying or self-eroding one.

Great Depression (event *B*), which in turn helps explain the radical form of party incorporation in Mexico (outcome $\sim Y$). That is, if the labor incorporation period had been shorter in Mexico (as in most of Latin America), it may well have been less radical in content. In her study of electoral system choice in the USA and Europe, Ahmed (2013) provides another example of a causal and paced argument. She argues that the time elapsed between industrialization and the electoral incorporation of the adult male population was consequential to the relative strength of labor organizations. Where suffrage was extended soon after industrialization (event *B* quickly follows event *A*), unions remained weak. The longer suffrage expansion (event *B*) was delayed after industrialization (event *A*), the more likely that workers would organize to achieve their political and economic goals (49). Skocpol's (1979) classic work on the outcomes of social revolutions contains a strictly temporal *and* a paced type of argument. She argues that the pace at which revolutionaries consolidated state power affected the extent to which they transformed state, class, and societal structures. In Russia, revolutionaries were forced by circumstances to rapidly consolidate power, which implied a more thoroughgoing transformation than in France, where the revolutionary reconstruction of state power unfolded more gradually.

Self-reproducing and reactive processes

Whether causal or strictly temporal, ordered or paced, sequential arguments can be further differentiated depending on whether their events follow a self-reproducing or reactive logic. On the one hand, sequences may embody events that move consistently in a particular direction and that track an outcome over time. Adapting Stinchcombe's (1968) terminology, we call these sequences *self-reproducing processes*. On the other hand, early events in a sequence may produce a series of reactions and counteractions that do not move the process in a consistent direction. With a *reactive process*, early events are followed by backlashes and reversals of direction, which in turn may trigger further backlashes and reversals, such that the final outcome of the sequence may appear unrelated to early events in the sequence (Mahoney 2000).

If a sequence of events is characterized by a *self-reproducing process*, the movement of initial events in a particular direction induces subsequent events that move the process in the same direction. Over time, it becomes more and more difficult to reverse direction or return to the original starting point (Hacker 1998, 2002; Pierson 2000; see also Thelen 1999, 2003). Although the events are linked by self-reproduction mechanisms, the underlying process may (1) remain unchanged (e.g., a background constant condition); (2)

In such processes, the probability of further steps along a given path increases with each move down that path (Arthur 1994; David 1985). Each individual step may be only a small change, but each step reinforces the direction of the prior one, and together the steps add up to a large cumulative effect.

With a *self-eroding process*, the logic of transformation is self-reproducing, but each event in the sequence serves to weaken, diminish, or undermine the configuration found in the early stages of the sequence. Each step down the path moves away from the established outcome associated with the early process and makes it increasingly less likely that the outcome or the process itself will be sustained. The status quo becomes harder and harder to maintain. Gradual processes of decay, drift, and exhaustion may be examples of self-eroding processes: in these sequences each event can feed into the next and diminish a prior pattern or process. For instance, the institutionalization of private property rights in Kenya was marked by a sequence in which the land titling process was rigged with fraud. Each fraudulent move triggered another fraudulent move and made the preservation of legal practices less and less likely over time, eroding the institutionalization of private property rights (Onoma 2010). Likewise, in Rosenblatt's (2013) comparative study of political party vibrancy, the phenomenon of trauma – the shared experience of a revolution or a civil war – activates retrospective loyalty and enhances party vibrancy. However, trauma is marked by decreasing returns: as time goes by, the generation that suffered political trauma ages out and the new generation does not forge the strong bonds that previously kept the party vibrant.

Finally, sequences may also unleash *reactive processes* in which events are linked together via reaction/counterreaction dynamics (Mahoney 2000). Each event is a cause of each subsequent event because it triggers a reaction or a response to the prior event. The events in these sequences are *transformative* in the sense that they change and perhaps reverse prior events (Sewell 1996). Often, reactive processes entail causal chains in which the initial event and the final event seemingly bear little relationship to one another, yet they are connected by virtue of the reaction/counterreaction dynamics that compose the overall causal chain. For example, in Collier and Collier's (1991) argument, the reactive sequences marking populist/postpopulist dynamics in Latin America moved countries from labor incorporation periods to party system regimes through a complex set of intermediary steps marked by reversals and backlashes. Riofrancos (2014) also makes a reaction/counterreaction sequential argument when analyzing the political interactions between indigenous movements and the state in Ecuador from the early 1990s to the present. In her explanation of the institutionalization of an extractivist discourse, Riofrancos traces the succession of political events

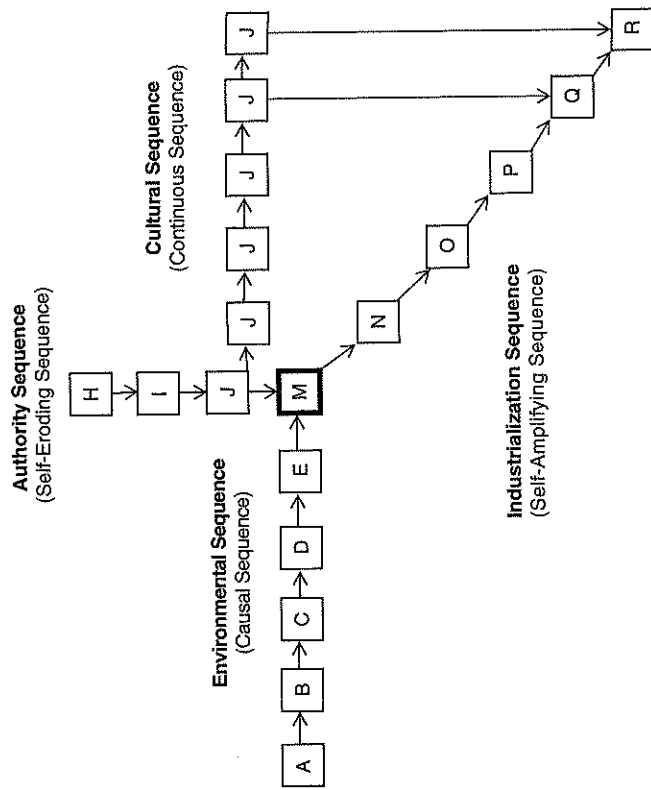
that confront indigenous movements with the state and through which the discourse of *extractivismo* evolves.⁷ In both examples, the basic mechanism of change is reaction/counterreaction.

Sequences and processes applied to the CHA of industrialization

Examples of several of the sequences and processes described above are found in Jack Goldstone's (1998) work on the origins of the Industrial Revolution (see Figure 8.1). In this work, the environmental sequence (events A–E in Figure 8.1) is a causal sequence in which each event is a logical response to each prior event; at certain points (e.g., C → D), the sequence moves along via reaction/counterreaction dynamics, such that it has components of a reactive sequence. By contrast, the industrialization sequence (events M–R) is a self-amplifying process and exhibits positive feedback. Each step in the causal chain serves to expand a process of industrialization that was launched with the invention of the steam engine. By the end of the sequence, industrialization has amplified to the point that a return to a preindustrial past is impossible. The example also contains a continuous process represented by the stable reproduction of a liberalizing culture open to technological experimentation. The endurance of this background event is important because it influences the industrialization sequence at various points. Most important, this continuous sequence intersects with the environmental sequence to produce the first steam engine (event M), which in turn launches the industrialization sequence. This “coming together” or collision of separately determined sequences is common in comparative-historical research, and it is sometimes described as a *conjunction* (e.g., Mahoney 2000).

The Goldstone example is an illustration of a sequential argument in which the timing and duration of earlier events matters for subsequent events. For example, the long duration of context condition A (limited forest area, abundant coal, and cold climate) was essential for the environmental sequence to continue along its path. This event had to endure for England to become dependent on coal (event B), itself a long-run event, and eventually exhaust much of the coal supply (event C). Issues of duration, speed, and order can also affect the dynamics of self-reproducing sequences. For example, the ordering of events is consequential in the self-amplifying industrialization sequence of

⁷ At times, counterreactions may seek to preempt more radical change. Other examples of preemptive counterreactions can be found in the literature on the origins of social welfare provision. In her analysis of social policy creation in Uruguay at the beginning of the twentieth century, for instance, Castiglioni (2014) argues that the Uruguayan state sought to preempt or anticipate the otherwise likely mobilization of the working class.



- Key:
- A: Limited forest area, abundant coal near sea, and cold climate.
 - B: Long-term heavy reliance on coal for heat.
 - C: Surface coal is exhausted.
 - D: Effort to dig for deeper coal.
 - E: Ground water fills mine shafts.
 - H: Limited monarchy.
 - I: Limited Anglican authority and toleration.
 - J: Liberalizing culture open to technological experimentation.
 - M: Development of first steam engine.
 - N: Improvement of steam engine.
 - O: Reduction in coal prices.
 - P: Reduction in price of iron and steel.
 - Q: Development of railways and ships.
 - R: Mass distribution of industrial production and goods.

Note: Adapted from Mahoney (2000).

Figure 8.1 Goldstone's explanation of English industrialization

the Goldstone example. A reduction in the price of iron and steel (event *P*) would not have spurred the development of railways and ships (event *Q*) if it had occurred substantially earlier. With many chains of events, in fact, it is difficult to imagine a different ordering. For instance, it seems inconceivable

that the development of railways and ships (event *Q*) could occur before the development of the first steam engine (event *M*). The more basic point is simply that issues of order and pace frequently are important to the logic of all kinds of sequences in CHA work.

Finally, the Goldstone example illustrates how a single-country study may embody multiple sequences and processes. It has long been noted that multiple observations may be contained within a single case, such that a small-*N* study actually entails a large number of observations (Campbell 1975; Collier 1993; George and Bennett 2005; Rueschemeyer 2003). Our point here, however, is that one can view the main "cases" of a comparative-historical study in terms of sequences. This is certainly true for any historical work that systematically compares two or more sequences within a given case. With these studies, the sequences are central units of analysis, not only the national or other spatial unit in which they are located. In turn, when one treats sequences as central units of analysis, it is possible to revisit traditional CHA methods, which are often understood to apply mainly or exclusively to the macrospatial unit under analysis. A new vantage point for thinking about CHA methods comes into being by treating sequences and processes as core units of analysis and comparison.

Cross-case methods

In this section, we consider how the kinds of sequences and processes under analysis can shape the kinds of methods (or specific applications of a given method) that are most appropriate for assessing causal hypotheses. Perhaps the most basic comparative techniques are J. S. Mill's method of agreement and method of difference. As conventionally employed, the method of agreement matches cases that share a given outcome, and it eliminates any potential causal factor that is not shared by these cases. The rationale of this eliminative procedure is that the factor is not *necessary* for the outcome. By contrast, as conventionally used, the method of difference compares a case in which the outcome is present to a case in which it is absent. If these cases share a given causal factor, that factor is eliminated as a potential explanation. The logic of this eliminative procedure is that the factor is not *sufficient* for the outcome (Mahoney 1999).

When used in isolation, the methods of agreement and difference are weak instruments for small-*N* causal inference. Most simply, while these

methods may be able to discover that an individual factor is *not* necessary/sufficient for an outcome, they cannot establish that a given condition is necessary/sufficient. Small-*N* researchers thus normally must combine Millian methods with process tracing or other within-case methods to make a positive case for causality. Alternatively, they can attempt to use stronger variants of cross-case methods, such as QCA and statistical analysis (Lieberman, Chapter 9, this volume; Ragin 2000, 2008). However, these methods may require the analysis of a medium number of cases, such that the design is no longer a small-*N* analysis.

The application of Millian methods for sequential arguments has not been systematically explored, although we believe it is commonly used in practice. With ordered sequential arguments, one evaluates hypotheses about the relative timing of events by comparing two or more sequences. Normally, the design entails the use of the method of difference, but it can also be combined with the method of agreement. For example, Ertman (1997) hypothesizes that the early timing (before 1450) of sustained geopolitical competition for Latin Europe led these countries to develop patrimonial states (rather than bureaucratic states). If Ertman had only analyzed the Latin European countries, the resulting method of agreement design would have led him to depend on counterfactual reasoning to support his argument about the importance of timing. However, Ertman also carried out a method of difference design by comparing Latin Europe to the German countries, cases where bureaucratic states were created. In the German states, Ertman shows how the late timing (after 1450) of sustained geopolitical competition allowed leaders to take advantage of the latest techniques of administration and finance and thereby develop more coherent bureaucracies. While this method of difference comparison does not clinch Ertman's ordered sequential argument, it does make it more plausible and allows him to avoid a purely counterfactual argument.

The joint application of the methods of agreement and difference also can be used with paced sequential arguments. One compares cases that are matched on a number of dimensions but that experienced a causal process at a different speed or with events of varying durations. For example, Prasad (2012) uses the method of difference in conjunction with a paced sequential argument to explain why the United States did not develop a robust public welfare state whereas European cases did. She argues that the stunning endurance of US economic prosperity during the late nineteenth and early twentieth centuries, itself rooted in the vast material resources of the country, set the United States down a path that allowed the government to

avoid building a welfare state to reconcile citizens to capitalism. At the same time, Prasad applies a method of agreement design to account for the similar outcomes among the European cases, where sporadic and unreliable growth consistently encouraged welfare state formation.

The matching logic of Millian-type methods furthermore is often implicitly used for the study of self-reproducing sequences. For instance, with a self-amplifying logic, scholars may employ time periods as their cases and treat each increase in the magnitude of the phenomenon of interest as an outcome that repeats across multiple periods. The method of agreement can then be used in the search for a common source of the repeating outcome; factors that are not shared across each time period can be eliminated as nonessential. This logic applies well to famous examples of path dependence and technological standards, such as the QWERTY keyboard (David 1985). In the explanation of QWERTY, technological efficiency is eliminated as a possible explanation, given that efficiency was present only in the initial time periods when QWERTY was first adopted. Thereafter, QWERTY was inferior to available alternative options, such that technological efficiency was not necessary for QWERTY's reproduction over time.⁸

When temporal sequences are analyzed as particular types of processes, it is natural to treat those processes as the centerpiece of the comparative analysis. One compares and contrasts the nature of democratization, bureaucratization, colonization, and so on. With such comparisons, however, *events* are the basis for the similarities and differences that exist across sequences. For example, consider Kohli's (2004) argument about the colonial origins of types of states in the developing world. In Korea, the sequence of events is approximately as follows: Japanese colonial strategy of economic transformation and political control (event *A*) → introduction of new state personnel, bureaucratic techniques, and well-organized police force (event *B*) and modernization of agriculture and promotion of exports (event *C*) and control of peasants and workers (event *D*) → cohesive-capitalist postcolonial state (event *E*). In Nigeria, by contrast, indirect British colonial rule followed a

⁸ Recent work on critical junctures also suggests new ways in which Millian methods may be used for sequential analysis. For example, Soifer (2012) recommends that scholars first select potential critical juncture cases by matching them on the outcome of interest (i.e., applying the method of agreement). If these cases are marked by critical junctures, he argues, they all must feature a "permissive condition" – that is, an underlying context in which the causal power of agency is increased (see also Capoccia, Chapter 6, this volume). The permissive condition must be present because, in Soifer's (2012) framework, permissive conditions are *necessary* but not sufficient for a critical juncture. As he puts it, "Cases where the permissive condition is absent are not relevant for testing" (1590). The eliminative logic of Millian methods thus serves as a first cut for testing potential critical junctures.

quite different sequence: British colonial strategy of rule “on the cheap” (event A) → empowerment of traditional chiefs and hands-off administration (event B) and maintenance of traditional agriculture (event C) and manipulation of ethnic divisions (event D) → patrimonial postcolonial state (event E). While Kohli certainly compares Korea and Nigeria, he does so by assessing the sequences of events in their colonial and postcolonial histories. The macro units differ because of the contrasting sets of events that constitute colonial and other processes in their histories.

CHA scholars employ different strategies when analyzing and aggregating events to compare sequences and processes. For example, Kohli’s (2004) approach is to examine how similar processes are constituted by contrasting forms of events across different countries. Thus, Kohli studies events across countries that are part of the same kinds of colonial processes: colonial state building, colonial agricultural policy, and colonial political governance. These two countries differ because they sharply contrast in the events that constituted these processes, which also allows Kohli to generalize broadly about differences in processes of colonialism itself (e.g., intensive and transformatory colonialism in Korea versus indirect and laissez-faire colonialism in Nigeria). Other scholars aggregate events based on their intensity or their temporal properties. For example, Skocpol’s (1979) comparative study of social revolutions compares processes such as international pressure across cases by exploring how events endowed those processes with different intensities and durations. The differences at the level of events allow her to generalize across cases about differences in the nature of the process of international pressure.

Finally, it bears emphasis that, even with Millian methods, the analysis of sequences usually demands a focus on *combinations of factors*, not individual factors. These combinations are often temporal configurations. For example, with ordered sequences, the analyst explores combinations of temporally ordered causal factors, such as *AB* versus *BA*, treating each combination as an individual factor for the purposes of using Millian methods. Likewise, analysts may distinguish two sequences with the same basic events (e.g., *ABC*) on the basis of the duration of those events (e.g., whether event *B* was long or short in duration). This kind of comparative analysis is like QCA in that it puts the emphasis on the effects of packages of variables or configurations, not the effects of discrete individual variables. However, unlike atemporal versions of QCA, it assumes that the causal contribution of each event within a combination depends on its temporal characteristics and its temporal position within the configuration.

Process tracing

Process tracing is the foundational method of within-case analysis in CHA. Yet, the literature on process tracing has generally not explicitly engaged the literature on temporal analysis. Here we try to begin to correct that omission by linking process tracing to the analysis of sequences and the temporal effects of events as they unfold over time.

From the rapidly growing literature on process tracing (Beach and Pedersen 2013; Bennett and Checkel 2015; Kittel and Kuehn 2013), two basic logics of inquiry may be distinguished. The first mode of process tracing is an inductive approach in which the analyst derives propositions and formulates sequences from empirical observations (Hall 2013, 27). This mode of process tracing is often used for the purpose of *theory development* through the identification of key events and through the specification of hypotheses about how these events connect together to form sequences and processes. The second mode of process tracing embodies a deductive logic of inquiry, in which scholars deduce propositions from more basic premises and carry out (implicitly or explicitly) *process tracing tests*. This mode is often used to test specific causal claims that were initially formulated from inductive process tracing or derived theoretically. We discuss each logic in turn.

Inductive process tracing

Inductive process tracing is perhaps the most powerful method in CHA for formulating new theory. It is commonly used to identify the events that comprise the core sequences and processes at the center of most CHA works. Inductive process tracing plays a large role in the construction of any complex, conjunctural, and multilayered historical narrative, including – we presume – the Goldstone (1998) example summarized above. Inductive process tracing is essential to the enterprise because the analyst cannot anticipate in advance many of the key events that comprise sequences and processes of central analytic importance. As a result, inductive analysis must be used to formulate historical-sequential arguments in most CHA studies (Bennett and Elman 2006, 263).

Inductive process tracing operates on two levels. At one level, it allows for the discovery of specific events in a sequence that were not anticipated (i.e., novel theory generation). These discoveries may then lead the scholar

to reformulate key aspects of the originating theory. At another level, the inductive approach is particularly useful for pulling out and assembling events into coherent and connected sequences. Inductive process tracing allows the CHA researcher to go back and forth between theory and events to build a coherent sequential argument that can then be evaluated further using other within-case tests or comparisons to other cases.

Inductive process tracing furthermore works well for identifying the events that comprise specific kinds of processes. With self-reproducing sequences, an inductive process tracing approach can help the analyst assess the amplitude of change (or lack of change) between events. In these sequences, the order of events might be theoretically deduced in advance, but the understanding of the extent to which the unfolding of events leads to a continuous reproduction of the underlying process of interest, the amplification of that process, or to its self-erosion will most likely require an in-depth analysis of the events and direction (or trajectory) of the sequence. At least to some degree, the process tracing researcher must let the events and their effects “speak for themselves” when establishing the specific logic of self-reproduction. The occurrences and events themselves – as found in the established historical evidence – can make it clear to the researcher whether a reactive or reproductive logic is at work, and, if the latter, whether that logic involves continuity, amplification, or erosion. When formulating theory and building sequential hypotheses, therefore, the process tracing researcher might be best served by not deploying too-strict theoretical expectations that could act as blinders and straightjacket the interpretation of the process under study.

Strictly temporal sequences also lend themselves naturally to the application of this kind of inductive process tracing. With these sequences, researchers do not propose or presume causal connections among the events of interest. Nor do they explore the historical material to determine whether a specific piece of evidence is present in order to carry out a process tracing test. Instead, they situate events from the historical record into a larger (temporal or spatial) context and analyze whether the order in which they unfold is consequential for the outcome of interest. For example, Caraway’s (2004) recommendation of “episodic analysis” for single-country studies of democratization presupposes this approach. For Caraway, each episode corresponds to the inclusion of previously excluded groups based on class, gender, or race. Inductive process tracing allows the researcher to “consider the sequencing of the extension of democratic citizenship, the extent to which previous expansions of the franchise affected the next round of democratization, and the extent to which transnational factors altered domestic debates” (455,

emphasis added). This approach to temporal sequences facilitates an in-depth analysis of the unfolding of events and their cumulative or interactive effects on the outcome of interest.

While inductive process tracing is significantly a tool for theory formulation, it has substantial implications for theory testing. In CHA, as in other modes of research, the omission of essential variables or the misspecification of relationships among variables can cause serious problems for causal analysis. Inductive process tracing is a key instrument for avoiding omitted variable bias and for formulating theories that are correctly specified. Both the capacity of CHA to generate new theory and the capacity of CHA to build theories that can withstand intense empirical scrutiny depend on sound inductive process tracing.

Process tracing tests

Process tracing tests – such as hoop tests and smoking gun tests – are also a central mode of within-case analysis used with the comparative sequential method (Bennett 2008; Collier 2011; Mahoney 2012; 4 Rohlfing 2013; Van Evera 1997). These tests have a deductive logic in which an analyst combines specific insights from a case with established principles and general knowledge to make a logical (deductive) inference about that case. When compared to inductive process tracing, deductive process tracing tests usually have a more focused purpose. They are often applied to specific links within inductively or deductively derived causal chains. They can be used to help show that controversial links in a sequence are in fact causal. Process tracing tests can also be used to determine whether specific hypotheses about ordering and pace are correct.

All process tracing tests leverage specific pieces of evidence, typically events from within a case. Scholars use the existence of certain events (or the absence of certain events) as their evidence for making inferences (Bennett 2008; Collier, Brady, and Seawright 2010; Mahoney 2010; McKeown 1999).⁹ CHA researchers often actively search for specific revealing pieces of evidence in much the same way as a detective looks for key clues to solve a case.

For some hypotheses, a specific piece of evidence from within a case (e.g., the presence of some specific event) in effect *must* be present for the hypothesis to be true. This kind of evidence allows for a *hoop test*: the hypothesis must

⁹ As Bennett (2008; Bennett and Colin 2006) points out, process tracing is closely analogous to Bayesian inference in the sense that the discovery of evidence can lead us to update our subjective beliefs about the validity of particular explanations (see also Humphreys and Jacobs 2013).

“jump through the hoop” (e.g., the event must be present) to warrant further consideration. Failing a hoop test in effect *eliminates* a hypothesis, but passing a hoop test does not confirm a hypothesis (though it can lend support for the hypothesis).

In other cases, the existence of a given event can strongly suggest the validity of a hypothesis. This kind of evidence allows for a *smoking gun test*: the evidence (e.g., the existence of the event) is strong proof that the hypothesis is correct. Passing a smoking gun test in effect *confirms* a hypothesis, though failing a smoking gun test does not disconfirm a hypothesis (but it can count against a hypothesis).

As an example of a hoop test, consider Luebbert's (1991, 308–9) critique of Gerschenkron's (1943) sequential argument about the origins of fascism in Germany. Gerschenkron links powerful landed elites to fascism via an electoral mechanism, arguing that landed elites are able to deliver rural electoral support to fascist parties by ensuring subordinate peasants support their candidates. Thus, the basic sequence is landed elites exercise control over peasantry (event *A*) → peasants vote for fascism (event *B*) → fascist electoral victory (outcome *Y*). Luebbert suggests that if Gerschenkron is correct, one should expect to observe rural electoral support for fascism in areas where landed elites predominate. In fact, however, Luebbert's historical research shows that rural support emanated from the family peasantry, not peasants controlled by labor-repressive landed elites. He therefore concludes that Gerschenkron's proposed causal sequence and event chronology cannot possibly be right: subordinate peasants did not deliver large number of votes for fascists in Germany.

A standard way of conducting hoop tests and smoking gun tests involves examining the intervening steps between *X* and *Y*. One can look for specific intervening events that should be present (or should be absent) to make the case that *X* causes *Y*. For example, in his comparative-historical explanation of failed industrialization in India, Chibber (2003) hypothesizes that the direct opposition of domestic capitalists blocked state managers from building the institutions that could sustain successful industrialization during the critical juncture of 1947–51. To test this hypothesis, he suggests that one should be able to find evidence that efforts by big industry (e.g., lobbying, personal pleas, slowing down investment) actually influenced state managers and changed the direction of state policy and institution building. The discovery of this evidence by Chibber amounts to passing a difficult hoop test, which lends support for his overall argument about the role of domestic capitalists as key cause of failed industrialization.

Process tracing tests often leverage the fact that it is easier to establish causal connections between temporally proximate events than between temporally distant events. For example, imagine that one seeks to show that *X* is necessary for *Y*. The challenge is often to find a well-established causal connection in which a more proximate event *E* is necessary for *Y*. If one can then show that *X* is necessary for *E*, one can make the logical inference that *X* must also be necessary for *Y* (this inference takes the form of a smoking gun test). Likewise, if one knows that the proximate *E* is sufficient for *Y*, and one can show that a more remote *X* is sufficient for *E*, then one can reason logically that *X* must also be sufficient for *Y*. This is the kind of reasoning that animates Rueschemeyer, Stephens, and Stephens's (1992) sequential argument about capitalist development and democracy, discussed above. They connect together temporally proximate sufficient links to make a long but compelling causal chain; the overall claim that capitalist development is approximately sufficient for democracy is built from the sufficiency links in the chain.

To illustrate how this kind of sequence elaboration can work with a smoking gun test, it is helpful to return to the environmental causal sequence in the Goldstone example above (see Figure 8.1). How do we know the contextual feature *A* (i.e., limited forest area, abundant coal near sea, and cold climate) is causally connected to the outcome *M* (i.e., the development of the first steam engine)? Goldstone persuades readers by appealing to the tightly coupled events that compose the middle of the sequence (i.e., *B*, *C*, *D*, and *E*). In effect, he makes a logical inference about the connection between *A* and *M* on the basis of his confidence in the validity of these intervening steps. His narrative suggests that the connection for each small step is highly plausible, intuitive, or even obvious. On this basis, he can deduce that it is extremely likely that *A* is also connected to *M*.

Process tracing tests can also be used for hypotheses concerning temporal ordering or pace. One possibility is to carry out a test with counterfactual analysis: one imagines a different ordering or a different pace. If the counterfactual thought experiment makes it clear that a different outcome would have followed, one has, in effect, carried out a smoking gun test. In some cases, an alternative order seems almost inconceivable. For example, in Goldstone's narrative one cannot imagine the improvement of the steam engine without first allowing for the invention of the steam engine. Likewise, Falletti (2010, 57–8) counterfactually argues that if after an initial political decentralization reform a reactive (instead of self-reinforcing) type of mechanism were to ensue, the second type of decentralization reform to be adopted likely would

be administrative (instead of fiscal) decentralization, leading to a lower degree of power for subnational officials.

Finally, process tracing tests are often used implicitly when scholars construct arguments about the mechanisms driving self-reproducing sequences. The processes underlying these sequences consist of causally connected events; in turn, the connections among these events can be evaluated with process tracing tests. Consider, for example, the self-eroding process that Onoma (2010) documents for property rights in Kenya. The erosion of property rights begins in the early postcolonial period with small-scale fraud carried out by common posing as real estate agents. These fraudsters are successful precisely because the colonial period left behind a relatively functional land rights system that established trust among individuals buying and selling property. In time, however, the process of fraud spreads as more and more common became active; it reaches a culmination point when high-level politicians themselves become key agents of land fraud. To establish that early episodes of fraud generated later ones, Onoma searches for and finds much evidence that criminals and, later, politicians learned from prior examples. In effect, Onoma shows that his hypothesis can pass a hoop test: if events did not show a process of copying and learning by example, the hypothesis about a self-reproducing cycle of fraud likely would be wrong. But the evidence is present, which, while not fully confirming his argument, adds support in its favor.

To conclude this section, process tracing – inductive and deductive – is an indispensable component of CHA work. It is a central tool that CHA researchers use for establishing causal linkages between events when constructing sequences. In conjunction with cross-case comparison, it is essential to the family of methods that compose the comparative sequential method.

Conclusion

The comparative sequential method is the basic overarching approach used by CHA researchers to formulate arguments and make inferences. On the one hand, this method is a set of tools and concepts for constructing different types of sequences and processes. On the other hand, it encompasses a set of cross-case and within-case methodologies for making causal inferences. Thus, the comparative sequential method brings together two literatures that rarely are connected explicitly: the literature on temporality and the literature on

case-study methods of causal inference. Elucidating the comparative sequential method invites a conversation among these literatures.

First, concerning the temporal components of the comparative sequential method, specific historical occurrences within cases are the starting point of the method. These occurrences are typically cast as more general events, which in turn form the building blocks of sequences. Sequences, as they unfold within certain contexts, then are at the very heart of much CHA work. They are often the central units of analysis and the main components of comparison. Comparative-historical work, including work focused on a single national unit, is comparative in part because different sequences of events are systematically juxtaposed. Sequences themselves may be causal or strictly temporal; they may be temporally ordered or temporally paced. Processes, a subset of temporal sequences, may also be differentiated according to whether they follow a self-reproducing or reactive logic. Among self-reproducing processes, further important distinctions concern whether their logic is continuous, self-amplifying, or self-eroding.

Second, concerning its methodological tools, the comparative sequential method often involves the use of variants of Millian methods, but these methods are usually applied to sequences and processes, not whole cases as traditionally understood. For some sequences, such as ordered sequences, cross-case comparison is essential to the analysis because it allows the researcher to avoid having to depend on only counterfactual reasoning when making causal inferences. The comparison of sequences and processes also underscores the fact that CHA is typically focused on combinations of factors – causal configurations – rather than individual variables viewed in isolation.

For within-case analysis, process tracing is the central method used with the comparative sequential method. For analytic purposes, we distinguish inductive and deductive applications of process tracing. Inductive modes of process tracing are commonly used to identify key events and arrange them into coherent sequences and processes. Among other things, inductive process tracing allows the researcher to carry out an in-depth analysis of the unfolding of events when the events are not presumed to be causally linked or when they follow an ongoing process of self-reproduction, such as amplification or erosion. Process tracing tests, such as hoop tests and smoking gun tests, are at the core of deductive uses of process tracing. These tests are routinely used in conjunction with causal sequences and reactive sequences, given that these kinds of sequences are composed of tightly coupled events whose causal linkages can be established through specific pieces of within-case data. Process tracing tests are often applied after the analyst has carried out

inductive process tracing and initially specified tentative linkages among events in sequences.

CHA is a field that is centrally concerned with – indeed, centrally animated by – the study of both time and causality. These two components of CHA become thoroughly integrated and work together with the comparative sequential method. By fusing these two elements, the comparative sequential method arguably merits the distinction of being the principal overarching methodology for CHA in general.

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