

From Process to Mechanism: Varieties of Disaggregation

Tulia G. Falleti • Julia Lynch

Published online: 12 June 2008
© Springer Science + Business Media, LLC 2008

McAdam, Tarrow and Tilly (henceforth MTT) persuasively argue that causal mechanisms can be measured, and they show us how this can be done. The authors argue that causal mechanisms may or may not be observable, but that their presence or absence can be assessed, if not directly, then at least through indirect measurement. The authors also argue convincingly that social processes can generally be disaggregated into component causal mechanisms, and that by doing so, we can begin to measure (and study!) processes. We concur with both claims. In fact, we see this article as a significant contribution to the literature on causal mechanisms because it anchors the debate beyond the definitional issue of what constitutes a causal mechanism (for an extensive list of definitions, see Mahoney 2001) in the larger epistemological project of understanding and measuring causation.

However, and precisely because the authors' main goal is to "identify and measure the 'causal chain and casual mechanism' in a process rather than assume we can best understand its as an 'x follows y story'," we highlight in our response the conditions under which disaggregation of processes into causal mechanisms is, and is not, likely to produce compelling causal explanations.

In their article, MTT elide quite different ways of disaggregating processes (and concepts). We believe that the differences among these disaggregation strategies have consequences for measurement validity and for causal explanation. We identify five different levels of mechanistic concepts that in the original article are labeled simply as either "mechanisms" or "processes." Each of these levels demands particular strategies for measurement and evidentiary standards, and implies particular types of causal claims.

T. G. Falleti (✉)
Department of Political Science, University of Pennsylvania, 208 South 37th Street,
Stiteler Hall, Room 237, Philadelphia, PA 19104-6215, USA
e-mail: falleti@sas.upenn.edu

J. Lynch
Department of Political Science, University of Pennsylvania,
243 Stiteler Hall, Philadelphia, PA 19104, USA
e-mail: jflynch@sas.upenn.edu

In our view, MTT should not only draw the distinction between processes and their component mechanisms, but also distinguish among different kinds of mechanisms: mechanisms as types, examples, causes, and indicators. These distinctions are not semantic. They stem from differences among mechanisms in terms of their extension and intension (Sartori 1970), and in the function they serve in causal argumentation.¹ As we show through the analysis of the examples presented in the article, these distinctions have consequences for how evidence is gathered and causal explanation is built.

Disaggregating mechanisms

MTT define *mechanisms* as “delimited changes that alter relations among specified sets of elements in identical or closely similar ways over a variety of situations” or, more generally, “transforming events” or the “events that link effects to causes.” Furthermore, mechanisms are the building blocks or constituent components of *processes* and mechanistic explanations “specify what sort of event produces the correspondence between the presumed cause and the presumed effect.” These definitions appear to be straightforward, with equally straightforward implications for measurement and causal explanation: if one can measure the component mechanisms at work (their occurrence, prevalence, intensity, etc.), then one can demonstrate that the causal process of interest is occurring. Yet in the examples they present, MTT break down processes into mechanisms for the purposes of measurement in strikingly different ways, labeling as “mechanisms” concepts that have quite different extension and intension.

We think it makes sense to distinguish more carefully between *processes*, *mechanisms-as-types*, *mechanisms-as-examples*, *mechanisms-as-causes*, and *mechanisms-as-indicators*. The rationale behind our distinction is that if one intends to use disaggregation to make a causal claim about a process, one *must* identify and measure (either directly or indirectly) at least one mechanism-as-cause.

Table 1 represents our reinterpretation, through the lenses of our proposed conceptual disaggregation, of MTT’s contentious politics and brokerage examples. Each of the major causal processes analyzed in these works is disaggregated into component mechanisms. Below the category of “process,” a first step of disaggregation is mechanisms (or processes)-as-types. Here, a general process or high-level mechanism is divided into mutually exclusive, collectively exhaustive categories, as in any other form of typology.

The general *process* that Tilly seeks to measure in his study of the generalization of contentious politics from the local to national level in England in the late seventeenth to early eighteenth century is “scale shift:” “a significant change in the number of participating units and/or range of identities in coordinated action across some field of contention.” There are two *types* of scale shift proposed, upward and downward scale shift. Similarly, Mische’s study of Brazilian social movements disaggregates the general process of issue framing (which permits coalition building) into “compartmentalizing” and “conflation” mechanisms. These two mechanisms-as-types seem to be mutually exclusive and exhaustive conversational strategies. Compartmentalizing strategies narrow the scope of identification (either by identity specificities or by time), while conflation strategies highlight the “common ground” that make it possible to fuse diverse identities together (14). Also, in

¹Following Sartori, by extension we mean the denotation of a concept, or the class of things to which the concept applies. By intension we mean the connotation of a concept, or the collection of properties that determine the things to which the word applies (see Sartori 1970, pp. 1040–1046).

Table 1 Disaggregation of processes and mechanisms by level of abstraction

Level	Concept	Tilly	Mische	Wood	Tarrow	Siting decisions
1	Top-level process	Scale shift	Coalition formation issue framing	Democratization	Brokerage	Sustained local mobilization
2	Process or mechanism-as-type	Upward scale shift, downward scale shift (types of scale shift) Parliamentarization	Compartmentalizing, conflation (types of issue framing) Identity qualifying, Temporal cueing (examples of compartmentalizing mechanisms)—Generality shifting, multiple targeting (examples of conflation mechanisms)	Economic elite defection	Administrative activism, Political entrepreneurship (examples of brokerage)	Sustained mobilization against siting decisions
3	Mechanism-as-example	(example of upward scale shift)				
4	Mechanism-as-cause	Boundary deactivation (cause of scale shift)	Discursive identity framing (cause of issue framing)	[Utility maximization by elites] (cause of economic elite defection)		Social appropriation
5	Mechanism-as-indicator	Bargaining (indicator of boundary deactivation)	Type of interactive conversation and discourse (indicator of discursive identity framing)	Economic transformation (indicator of change in economic elite's interests)		Community's sense of threat or opportunity

Wood's example of democratization in El Salvador and South Africa, we see the distinction between the top-level process of transition to democracy, and the elite defection process- or mechanism-as-type.²

Level 3 of Table 1 denotes mechanisms-as-examples. Here again, intension is added to the basic definition of the process, and extension is reduced, in order to hone in on a particular instance of the general process or subtype—parliamentarization is an example of upward scale shift (MTT refer to both scale shift and parliamentarization as processes, yet the latter clearly has less extension, and more intension, than the former); identity qualifying and temporal cueing are examples of compartmentalizing mechanisms; administrative activism is an example of brokerage; and sustained mobilization against siting decisions is an example of the more general process of sustained local mobilization.

In moving from the top level process to the subtype or example—e.g. from scale shift to parliamentarization—we are not disaggregating a mechanistic process into component causes: we are simply substituting a more specific type or instance for a broader class of events. This is primarily a move of conceptualization, not measurement, and poses no particular problem for measurement validity: if we are able to measure the occurrence of parliamentarization, then we are by definition measuring the occurrence of an upward scale shift. Similarly, the measurement of administrative activism or political entrepreneurship of mayors is, by definition, a measurement of two examples of brokerage. But this is not what we think MTT have in mind when they speak of disaggregating processes into mechanisms in order to improve measurement and allow for causal explanations.

Two types of disaggregation that seems more likely to lead to good measurement in the service of mechanistic arguments are located, in Table 1, in Levels 4 and 5. In the example drawn from Tilly's work, for instance, the authors disaggregate the process of scale shift further into component mechanisms of "boundary deactivation" and "bargaining." This disaggregation is quite different from the move from general process to example, and in fact consists of two distinct conceptual moves—each of which poses distinct challenges for measurement.

We understand boundary deactivation (the "process" [sic] that "deactivates the previously sharp boundary between local communities and national political networks" and allows the two levels to "interpenetrate") as the true *mechanism-as-cause* in this example: it is what makes the process of upward scale shift happen (Level 4). Bargaining, on the other hand, which results in new ties between local and national-level actors, is an *indicator* of boundary deactivation: "increase in combinations of bargaining and support verbs generally indicate that boundary deactivation is under way." Bargaining is not the same as boundary deactivation, but the presence of bargaining can alert us to where and when boundary deactivation is likely to be taking place. *Mechanisms-as-indicators* are located in Level 5 of Table 1.

These two disaggregations—from process to cause (from Level 1 to 4 in Table 1), and from cause to indicator (from Level 4 to 5)—signal different challenges for validity. In the latter case, the concerns are familiar. All of the classic issues of measurement validity apply

²According to Wood, the transitions to democracy by economic elite defection are characteristic of oligarchic societies, i.e. societies where the "economic elites long relied on extra-economic coercion of labor for the realization of their income." (Wood 2000, p. 9). Sustained insurgency in these societies led to economic transformations that reshaped the interests of the economic elites, whom with time defected from the regime elites (Wood 2000, 2003). The other three types of democratic transitions Wood identifies are those due to defeat in war, due to a political pact between opposition and authoritarian soft-liners, or due to a cross-class alliance (Wood 2000, pp. 10–11).

to the selection and measurement of *indicators*. We need to assess whether our measures are adequately reliable, sensitive, and specific; and whether the various indicators of a construct, taken together, have sufficient convergent, discriminant, construct and face validity. In the scale shift example, we are convinced that Tilly's systematic events data are good empirical indicators of the mechanism of bargaining. But from this brief treatment, we learn very little about the properties of bargaining as an indicator of boundary deactivation! It seems to us that if we are to use mechanisms as indicators of other mechanisms, we must justify this measurement strategy in the same way that we would justify the choice of any other kind of indicator.

In MTT's presentation of Mische's work, the justification and measurement of the indicator and the cause are more closely related than in the scale shift example. Through ethnographic fieldwork, Mische is able to measure *directly* the presence or absence of discursive identity framing (which is the cause of issue framing) according to the type of interactive conversation and discourse (indicator) of Brazilian students. In this example, both cause and indicator are part of the discursive strategies of political actors, albeit at different levels of abstraction. Therefore, the reliability, sensitivity, and specificity of the indicator in relation to the cause are more obviously justifiable.

However, even when our indicator mechanisms are clearly good indicators of the mechanism-as-cause, causal explanation requires that we somehow link our higher-level mechanistic concepts (processes, mechanisms-as-types, and mechanisms-as-examples, Levels 1–3), with a mechanism-as-cause (Level 4). Suppose bargaining is a valid indicator of boundary deactivation. Even in this case, the proposed measurement of scale shift requires us to accept boundary deactivation as a cause of parliamentarization (and hence of upward scale shift, and of scale shift more generally). MTT claim to be employing "direct" measurement, but if bargaining is an indicator, not an example, of boundary deactivation, then even direct measures of bargaining are only indirect measures of boundary deactivation. The point is not merely that we have "caught" the authors trying to pass off indirect as direct measurement; there is a more important issue here. Mechanistic explanations purport to come closer to true causal explanation than correlational arguments can; but to achieve this standard, we must make a good claim to having measured (directly or indirectly) the occurrence of the mechanism-as-cause that is theoretically relevant to the process of interest.

In the discussion of Tarrow's work on brokerage, a mechanism-as-cause is not identified. This example does not provide a mechanistic causal explanation as would be the case if a mechanism-as-cause were either directly or indirectly measured. Here the "sub-mechanisms" into which the process of brokerage have been disaggregated can describe how things happen, but not why they happen. In Table 1 of MTT's article, Tarrow measures political and administrative involvements. We understand these to be the indicators of two examples of the brokerage mechanism: administrative activism, which characterizes the majority of French mayors, and political entrepreneurship, which predominates among Italian mayors. Through this example, Tarrow tells us in what way brokerage happens, but not necessarily why it happens. Tarrow seems to want to tell us that different center-periphery systems—through the mediation of different patterns of political and administrative articulation—lead to different types of brokerage. But because in this example we lack a mechanism-as-cause, we are unable to do much more than identify the attributes of different types of brokerage.

Even when we do identify a mechanism-as-cause, though, perhaps it is only rarely that we are able to truly and directly measure the causal mechanism *at work*. It is certainly possible, as Mische's work illustrates. But much of the time we may have to rely on

indicators that indirectly measure the presence or likelihood of the purported mechanism. As a consequence, we suggest that making causal claims in a mechanistic framework requires the analyst to employ (at least) one of three tropes.

The first trope is control: the researcher could convincingly demonstrate that no other likely cause could be producing the outcome of interest. For example, and elaborating on Wood's study, one could show that El Salvador and South Africa did not present any of the characteristics of the three other types of transitions to democracy (by defeat in war, by political pact, or by cross-class alliance) that would constitute alternative explanations to Wood's mechanistic account of elite defection. The second trope is familiarity. We posit, but do not actually measure, a mechanism that the intended audience widely acknowledges to exist and to operate in similar circumstances (e.g. rational choice, increasing returns to scale). Wood's work, once again, provides a good example of this strategy. Having established the economic interests of the agrarian sector of the economic elite, she can credibly claim that their disposition toward democratization and a peace agreement changed significantly once the transformation of the economy affected their economic returns. This explanation is grounded in well-established structuralist and rational choice theories that posit a specified, recognized set of mechanisms, and shows how the familiarity trope can be applied to make a fairly strong causal argument even in the absence of direct measurement of the mechanism-as-cause. The third trope is narrative: that is, telling a rhetorically and logically persuasive story about how the hypothesized cause gets us from input to output. In this regard, the case of parliamentarization in Britain is exemplary of a logically persuasive and empirically compelling narrative. Quite possibly, the best mechanistic explanations are those that manage to deploy the three tropes together.

In light of the critiques we present here, what it would take to make a convincing causal claim in MTT's ongoing research on siting decisions? The conceptual disaggregation in this research is well-crafted: the sustained mobilization against siting decisions is an example of the top-level process of sustained local mobilization. The authors also seem to have identified social appropriation as the primary mechanism-as-cause of mobilized opposition against siting decisions. We would only like to emphasize that the justification of social appropriation as the mechanism-as-cause be as unequivocally established as possible. Attention to the three tropes spelled out above, we believe, will assist the authors in such justification. As for the indicator of social appropriation chosen (i.e., the emergence of communities' sense of threat or opportunity) and the multi-method research design proposed to measure the indicator (e.g., study of issue framing by editorial staffs, among others), they both appear largely adequate. This design combined with a sound justification of the mechanism-as-cause will surely result in another landmark study of contentious politics through the use of mechanistic causal explanation by the MTT team.

Conclusion

MTT's article is a major contribution to the methodological literature devoted to causal mechanistic arguments, and should be widely read in sociology and political science. We hereby offer a friendly amendment to MTT's conceptualization of mechanisms, one that we believe may have consequences for measurement and causal explanation. We strongly believe that mechanistic explanations have a primordial ontological status in the social sciences. They get us beyond correlation and into causation (Hall 2003). But it is important to specify where causation resides (and why!), to make sure that we distinguish between descriptive and explanatory mechanistic accounts.

References

- Hall, P. A. (2003). Aligning ontology and methodology in comparative politics. In J. Mahoney, & D. Rueschemeyer (Eds.), *Comparative historical analysis in the social sciences*. New York: Cambridge University Press.
- Mahoney, J. (2001). Beyond correlational analysis: Recent innovations in theory and method. *Sociological Forum*, 16, 575–593.
- Sartori, G. (1970). Concept misformation in comparative politics. *American Political Science Review*, 64, 1033–1053.
- Wood, E. J. (2000). *Forging democracy from below: Insurgent transitions in South Africa and El Salvador*. New York: Cambridge University Press.
- Wood, E. J. (2003). *Insurgent collective action and civil war in El Salvador*. New York: Cambridge University Press.

Tulia G. Falleti is an Assistant Professor of Political Science at the University of Pennsylvania, where she conducts research and teaches courses on federalism, decentralization, local governance, and democratization. She is the author of *Decentralization and Subnational Politics in Latin America* (Cambridge University Press, forthcoming) and over a dozen peer-reviewed journal articles and book chapters, one of which earned the 2006 Gregory Luebbert Award from the American Political Science Association for the best article in comparative politics. Falleti is currently working on a new book on health reforms and local governance in Latin America.

Julia Lynch is Janice and Julian Bers Assistant Professor in the Social Sciences at the University of Pennsylvania, where she has taught since 2001. Her research concerns the politics of inequality, social policy, and the economy in comparative perspective, with a focus on the countries of Western Europe. Lynch is the author of *Age in the Welfare State: The Origins of Social Spending on Pensioners, Workers, and Children* (Cambridge University Press, 2006), and is a current recipient of an Investigator Award in Health Policy Research from the Robert Wood Johnson Foundation.