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CAPTURING CAUSAL COMPLEXITY: HEURISTICS FOR CONFIGURATIONAL THEORIZING

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Management scholars study phenomena marked by complex interdependencies among multiple explanatory factors that combine to bring about an outcome of interest. Yet, theorizing about causal complexity can prove challenging for the correlational theorizing that is predominant in the field of management, given its "net effects thinking" that emphasizes the unique contribution of individual explanatory factors. In contrast, configurational theories and thinking are well suited to explaining causally complex phenomena. In this article, we seek to advance configurational theorizing by providing a model of the configurational theorizing process, which consists of three iterative stages—scoping, linking and naming. In each stage, we develop and offer several heuristics aimed at stimulating configurational theorizing. That is, these theorizing heuristics are intended to help scholars discover configurations of explanatory factors, probe the connections among these factors, and articulate the orchestrating themes that underpin their coherence. We conclude with a discussion of how configurational theorizing advances theory development in the field of management and organizations, and beyond.

> Everything should be made as simple as possible, but no simpler.
>
> —Albert Einstein (attributed to)

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Many phenomena of interest to management scholars are characterized by causal complexity—that is, situations where multiple explanatory factors *combine* in complex and, at times, contradictory ways, and where there is "equifinality," or multiple alternative paths to an outcome (Meyer, Tsui, & Hinings, 1993; Misangyi, Greckhamer, Furnari, Fiss, Crilly, & Aguilera, 2017; Tsoukas, 2017). Such causal complexity is reflected in many influential theories in management, including theories of organizational strategy (e.g., Miles & Snow, 1978; Miller, 1986), competitive advantage (e.g., Baumann & Siggelkow, 2011; Porter, 1991), organizational design (e.g., Hinings & Greenwood, 1989; Ketchen et al., 1997) and institutional-

level complementarity (e.g., Aguilera & Jackson, 2003; Guillén, 1994). Furthermore, most of the "grand challenges" and "wicked problems" facing societal and organizational actors—including climate change, poverty, and gender inequality—are particularly known for their complex and multifaceted nature. Indeed, today's organizations confront social and environmental issues that are "complex, global, and multilevel" (George, Howard-Grenville, Joshi, & Tihanyi, 2016: 1890).

While explaining causally complex phenomena is of keen interest to management scholars, theorizing about causal complexity is difficult, for at least two reasons. First, causally complex explanations require theories to account for multifaceted interdependencies rather than bivariate relations (e.g., Doty & Glick, 1994). Yet, as noted in our epigraph attributed to Einstein, good explanations need to simplify yet avoid oversimplification—a nontrivial task. Second, while many management and organizational theories explicitly or implicitly acknowledge the causal complexity underlying their phenomena of interest, they nevertheless tend to be shaped by the close interdependence between theory and methods (Sørensen, Van Maanen, & Mitchell, 2007). That is, because the empirical research testing these theories has predominantly used correlational methods that decompose cases into "independent" variables, this has resulted in a corresponding proliferation of "correlational theorizing," which "tends to perceive the social world mainly in terms of linear relationships that take a correlational form of 'the more of X, the more of Y'" (Delbridge & Fiss, 2013: 328). Correlational theorizing is well suited to decomposing cases into explanatory attributes and focusing on the net effects of these attributes that are usually assumed to be capable of bringing about an outcome of interest *by themselves*.[1] However, this strength also tends to imprint "general linear reality" assumptions (Abbott, 1988: 169) and "net-effects thinking" (Ragin, 2008) on the resulting theories. Consequently, theorizing that follows this logic is often challenged in capturing causal complexity, precisely because its focus on the unique contribution of a particular explanatory attribute gets in the way of understanding how multiple attributes may combine in complex ways.

Configurational theories, in contrast, are well suited to addressing causal complexity (e.g., Doty & Glick, 1994; Miller, 1986; Miller & Friesen, 1984; Mintzberg, 1979; Misangyi et al., 2017; Short, Payne, & Ketchen, 2008). In configurational theorizing, the focus lies on understanding how or why multiple attributes combine into distinct configurations to explain a phenomenon, while also recognizing that complex causal explanations may involve more than one configuration of attributes leading to the outcome of interest. This puts configurational theorizing in stark contrast to correlational theorizing and emphasizes the notion of *configurations* as multidimensional constellations of attributes orchestrated together by central themes or integrative mechanisms (Meyer et al., 1993; Miller, 1986, 1996). While configurational theorizing has led to some of the most influential organizational theories—including, for instance, Burns and Stalker's (1961) theory of organic and mechanistic organizations, or Miles and Snow's (1978) prospector, analyzer, and defender typology—the challenge of configurational theorizing remains a daunting one, and has perhaps become more difficult as evidenced by the apparent decline of typologies in management theory over the past decades (Delbridge & Fiss, 2013). In fact, while several important theories in management are configurational in nature, the *theorizing process* by which scholars can build configurational theories has received scant attention.

In this article, we develop and outline a "configurational theorizing process" that involves three iterative stages: "scoping" (identifying relevant attributes that may plausibly form configurations), "linking" (thinking about how the attributes connect with one another), and "naming" (labeling configurations to evoke their orchestrating themes). For each stage, we develop a set of heuristics—or "rules of thumb"—that are aimed at stimulating scholars to "think configurationally." In other words, our configurational theorizing heuristics aim at helping scholars generate new ideas and make "quick switches" in their ways of thinking (Abbott, 2004: 94) to capture causal complexity, discover configurations, and ultimately build configurational theories. Accordingly, we aim at sensitizing and inspiring scholars to practice configurational theorizing in their own ways, and in line with the requirements of their particular phenomena of study and research questions.

Our central contribution is to expand scholars' "theorizing toolkit" by identifying configurational theorizing as a distinctive theorizing process that meets the challenge of the causal complexity underlying many management phenomena and the social

[1] Consistent with extant configurational studies, hereafter, we use interchangeably the terms "explanatory factors" and "explanatory attributes," or simply "factors" and "attributes." We also use interchangeably the terms "phenomenon" and "outcome."

world more broadly. We thus respond to calls for more plurality and diversity of theorizing styles in management (e.g., Cornelissen, 2017; Cornelissen & Höllerer, 2020; Delbridge & Fiss, 2013; Svejenova, 2019) by considering what kind of theorizing is needed to address causal complexity. Put differently, our goal is to complement the well-developed correlational theorizing approach with a different form of theorizing that is well equipped to explain phenomena wherein causation is complex and not well captured with correlational arguments. Capturing causal complexity requires deliberate efforts to reorient thinking for those accustomed to correlational theorizing. Our heuristics should prove to be particularly apt for facilitating such a reorientation as heuristics are well suited to act as frame-breaking devices (Eisenhardt, Kahwajy, & Bourgeois, 1997).

The remainder of the article is structured as follows. First, we highlight some key themes of the configurational approach to theorizing causally complex explanations, contrasting this approach with the predominant correlational approach. With these themes as foundations, we then provide our model of the configurational theorizing process, which includes three stages and their corresponding sets of heuristics, aimed overall at facilitating the generation of configurational theories. We conclude by discussing the implications of our configurational theorizing process for advancing theory development in the field of management and organizations, and beyond.

CAUSAL COMPLEXITY AND CONFIGURATIONAL THEORIZING

While it is arguably pervasive in the social world, concrete definitions of causal complexity in the social sciences are difficult to find (Braumoeller, 2003).[2] One has been offered by Ragin (2008: 124), who defined causal complexity as "a situation in which a given outcome may follow from several different combinations of causal conditions." This understanding of causal complexity emphasizes two characteristics: (1) that configurations of multiple explanatory factors rather than single factors bring about outcomes, and (2) that different configurations can lead to the same outcome (Rohlfing, 2008). We refer to these two characteristics of causal complexity as "conjunction," which focuses on how or why explanatory factors jointly bring about an outcome (Mackie, 1973), and "equifinality" (or disjunction), the idea that "a system can reach the same final state, from different initial conditions and by a variety of different paths" (Katz & Kahn, 1978: 30).

Despite the recognition that many management phenomena are marked by conjunction and equifinality (e.g., Anderson, 1999; McKelvey, 2004; Meyer, Gaba, & Colwell, 2005), management research has been dominated by correlational or variance theorizing, a form of theorizing that is marked by "the linking together of concepts expressed as dependent, independent, mediating and moderating variables, usually accompanied by formal propositions, and with a focus principally on explaining variance in outcomes" (Cloutier & Langley, 2020: 1–2). While correlational theorizing is well suited for many inquiries, we agree with Meyer et al. (2005: 456), who observed that an "amalgam of mutually reinforcing beliefs, theories, and methods honoring the notion of equilibrium has … blocked the investigation of a family of interesting problems of great practical importance." In particular, correlational or variance theorizing is limited in its ability to develop explanations of phenomena that are marked by causal complexity.

Consider conjunction, the first aspect of causal complexity noted above (i.e., that causes may *combine* in complex ways to explain an outcome). Such a situation is not adequately captured by correlational thinking that focuses on isolating the unique contributions of individual explanatory attributes toward an outcome, holding all other attributes constant. While the consideration of contingent attributes—that is, "moderators"—is of course prevalent in correlational theorizing, such thinking is conceptually based on the multiplication of independent variables and usually limited to two or three factors, reflecting the typically implicit assumption that "the causal meaning of a given attribute cannot, in general, depend on its context in either space or time" (Abbott, 1988: 180). Thus, correlational theorizing yields relatively straightforward theories that favor elegance over realism (Friedman, 1953) and tends to inhibit the scholar's ability to think about the conjunction between attributes. Less overtly, correlational thinking also tends to dissuade scholars from studying phenomena to which their standard tools do not apply (Meyer et al., 2005).

A similar picture emerges regarding equifinality, the second aspect of causal complexity. Equifinality implies that there may be two or more alternative pathways to the same outcome. A classic example is offered by Miles and Snow's (1978) typology of firms as prospectors, defenders, and analyzers wherein these "strategy types" are essentially different equifinal ways of addressing firms' entrepreneurial,

[2] As Johnson (2009: 3) noted, there is also no unique definition of complexity in the natural sciences.

operational, and administrative problems. Rooted in systems theory (Katz & Kahn, 1978), equifinality may also occur when one or more explanatory attributes serve as substitutes for one another, and thus builds on the notion of functional equivalence (e.g., Gresov & Drazin, 1997; Merton, 1967). In contrast, correlational theorizing inherently treats multiple or alternative explanatory attributes as conditions that need to be "controlled." Thus, such theorizing takes an "all else equal" framing that turns such explanatory attributes into "control variables," and presumes that such effects need to be "parceled out" rather than considering how or why they may instead provide alternative causal pathways to the same outcome. In this sense, correlational theorizing is unifinal (Fiss, 2007) and thus less suitable to addressing the equifinality inherent to causal complexity.

In addition to the two challenges discussed so far, correlational theorizing is further challenged by its assumption of symmetry—that is, the implicit idea that the factors leading to the absence of a phenomenon are the inverse of those factors that lead to its presence. Consider, for instance, high performance. A theoretical statement such as "the more of X, the more of Y" also implies that "the less of X, the less of Y." However, with situations that are causally complex, the presence of conjuctural causation and equifinality may frequently lead to situations in which symmetry is not found, such as when causation is not reversible (e.g., Lieberson, 1987) or when there are few ways to organize for success and many ways to fail (e.g., Fiss, 2011). In sum, while the dominant style of correlational theorizing has its clear strengths, capturing adequately the causal complexity of phenomena will frequently require a different kind of theorizing, which we discuss next.

The Configurational Approach to Theorizing

We build on extant scholarship on configurations that has clearly shown that configurational theories and theorizing are well equipped for developing explanations of causally complex phenomena. Miller (1996: 506) defined configurations as "complex systems of interdependency brought about by central orchestrating themes," while Meyer and colleagues (1993: 1175) described configurations as "multidimensional constellation(s) of conceptually distinct characteristics that commonly occur together." Most definitions of configuration in the management field share an emphasis on the interdependencies among attributes that constitute configurations along with the idea that a configuration has one or more central "logics" or themes orchestrating the interactions of the various attributes and limiting their variety (e.g., Miller, 1986, 2018). Further, configurational studies in management share a common overall purpose in their theorizing efforts, aiming at identifying why or how multiple explanatory factors combine into configurations that bring about an outcome of interest. Consistent with this scholarship, we embrace the notion that configurational theorizing involves not only understanding the multiple attributes that constitute a configuration and their linkages, but also the orchestrating themes that underlie their coherence.

The roots of configurational theorizing in management extend across a variety of literatures. While a comprehensive review of this work is beyond the scope of the present article, it is helpful to highlight some key ideas that have shaped this style of theorizing. Two of these are the twin notions of "taxonomies" and "typologies" as forms of theory building. Both acknowledge the importance of distinguishing among different types of cases, such as organizations, to explain an outcome of interest (e.g., Blau & Scott, 1962; Burns & Stalker, 1961; Doty & Glick, 1994; Hinings & Greenwood, 1989; McKelvey, 1982; Merton, 1968; Miller, 1986; Miller & Friesen, 1984; Mintzberg, 1979; Pinder & Moore, 1979) and have drawn on influences from well beyond the social sciences, including biology (e.g., McKelvey, 1978; Sokal & Sneath, 1963). While taxonomies are empirically derived, typologies are marked by theoretical principles that organize cases into "types." For instance, Mintzberg (1979)'s typology of organizational structures (i.e., entrepreneurial organization, machine bureaucracy, professional organization, etc.) centers on organizations' division of labor and coordination mechanisms as key theoretical dimensions.

Building on this earlier work on configurational theory, a more recent approach that also embraces causal complexity is the neo-configurational perspective (Fiss, 2007, 2011; Misangyi et al., 2017). Drawing on a set-theoretic configurational approach (Ragin, 1987, 2000, 2008), this perspective offers a theoretical lens that provides a further understanding of configurations and, in particular, the trade-offs, inconsistencies, and redundancies within configurations. For example, by empirically examining configurations based on Miles and Snow (1978)'s typology from a set-theoretic approach, Fiss (2011) found that such configurations of organizational strategy, structure, and process feature core and peripheral elements, so that several peripheral elements surrounding a core element can be interchangeable and equally effective

in affecting performance (see also Grandori & Furnari, 2008; Siggelkow, 2002). In sum, leveraging the set-theoretic apparatus, neo-configurational studies have advanced new ways of thinking configurationally about causal complexity.

Taken together, this research shows that the configurational approach to theorizing is particularly well positioned to address the challenges of conjunction and equifinality inherent in causal complexity. Regarding conjunction, configurational theorizing explicitly aims at identifying configurations of explanatory attributes and thus understands such attributes as interacting parts of a whole operating *together* rather than individual factors working in isolation (Doty, Glick, & Huber, 1993; Meyer et al., 1993; Mintzberg, 1979; Miller & Friesen, 1984; Misangyi et al., 2017). Likewise, configurational theorizing explicitly embraces the notion of equifinality (Meyer et al., 1993) and aims at identifying multiple, equifinal "gestalts" to explain a phenomenon rather than universal relationships (e.g., Greenwood & Hinings, 1993; Ketchen, Thomas, & Snow, 1993; Miles & Snow, 1978).

While the configurational approach has led to important theories in management, the underlying *theorizing process* that scholars can follow to develop new configurational theories and discover configurations has remained implicit and underexplored. This is an important problem especially in the face of the lament that new theories are needed in management to keep pace with the complexity and novelty of the social world (e.g., George et al., 2016; Suddaby, Hardy, & Huy, 2011). Without conceptualizing the configurational theorizing process more explicitly and precisely, new configurational theories will be slow to emerge because scholars may more easily stick with the dominant correlational ways of thinking, thereby limiting the development of theories able to sufficiently capture causal complexity. We thus offer here a model of the configurational theorizing process, which we present next.

THE CONFIGURATIONAL THEORIZING PROCESS

If theories are systems of ideas that explain a phenomenon (e.g., Oswick, Fleming, & Hanlon, 2011), theorizing is the process by which theories are developed (Swedberg, 2014). As Weick (1989: 516) duly noted, "theory cannot be improved until we improve the theorizing process." Theorizing involves activities such as imagination and mental simulation (DiMaggio, 1995; Folger & Turillo, 1999; Weick, 1995), the verbal articulation of narratives and arguments (Abbott, 2004), and visualization (Ravasi, 2017). When scholars theorize, they often use "heuristics," or rules of thumb to generate insights and solve problems creatively (Polya, 1957). Theorizing heuristics[3] serve as "self-conscious devices for producing new ideas by manipulating arguments, descriptions, and narratives in particular ways," allowing scholars to "make quick switches in [their] intellectual attacks on problems" (Abbott, 2004: 94, 162).

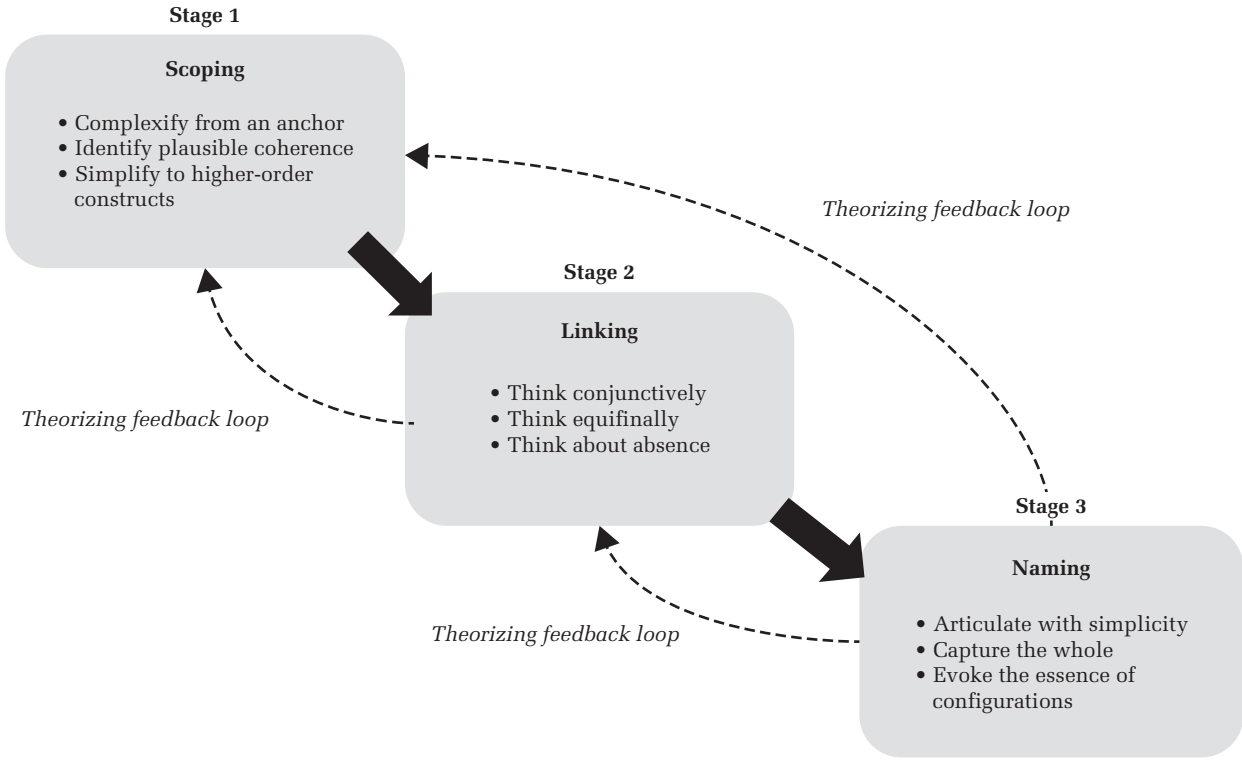
In the spirit of past research (e.g., Abbott, 2004; Swedberg, 2014), the heuristics we offer below are not intended to be exhaustive and should not be applied mechanistically. Rather, our aim is to sensitize management and organizational scholars to develop *their own* heuristics for configurational theorizing. As Swedberg (2014: 144, original emphasis) put it: "Heuristics should be used for inspiration … what is important is to develop a set of heuristic rules of your own making, which help *you* to theorize." Specifically, we model the configurational theorizing process and offer sets of heuristics aimed at inspiring mental simulation, thinking processes, and verbal articulation in the development of configurational theories that explain causally complex phenomena.

To reiterate, the purpose of configurational theorizing is to explain how and why multiple explanatory factors (hereafter also referred to as "attributes") combine to bring about a phenomenon or outcome of interest. Thus, the theorizing process we offer centers on thinking about *configurations* of explanatory attributes (hereafter also referred to as "causal recipes" or simply "recipes"). Consistent with past literature, we assume that such configurations may be constituted by not only the presence of explanatory attributes, but also their absence, as the absence of attributes may be just as consequential to explaining a phenomenon (Inkpen & Choudhury, 1995; Ragin, 2008). Further, configurational theorizing involves both specifying the constellation of linked attributes and articulating the orchestrating themes[4] that

[3] Our use of theorizing heuristics draws on the literature in psychology (Jaccard & Jacoby, 2009) and sociology (Swedberg, 2014) that is focused on processes of scientific discovery, and thus differs from the notion of heuristics as mental shortcuts that people use in decision-making under uncertainty (e.g., Bingham & Eisenhardt, 2011; Tversky & Kahneman, 1974).

[4] Orchestrating themes can be considered as integrative mechanisms. They are mechanisms insofar as they "generate and explain observed associations between

FIGURE 1
The Configurational Theorizing Process



underlie how and why the attributes work together. At their best, the resulting configurational theories combine analytical precision (e.g., detailing linkages among attributes) with meaningful synthesis (e.g., evocatively describing configurations and their orchestrating themes). Accordingly, configurational theorizing embraces tensions between the dualities of the whole versus its parts, simplicity and complexity, abstract and specific knowledge, and synthesis and analysis. Our intent is to explicate the configurational theorizing process so that the tensions created by these dualities can be "preserved and managed rather than simplified away" (Weick, 2014: 178).

Figure 1 provides an overview of how the configurational theorizing process unfolds through three stages, each of which involves a different set of heuristics. The *scoping* stage primarily involves identifying and specifying the key attributes theorized to combine with one another to explain the phenomenon. The *linking* stage requires scholars to further theorize how or why the attributes connect or interrelate with each other to form a configuration or set of configurations that explain the phenomenon. Finally, in the *naming* stage, the focus is on articulating the underlying orchestrating themes and labeling the identified configurations. Table 1 summarizes the heuristics in each of these stages.

As highlighted by the feedback loops in Figure 1, a configurational theorizing process will typically prove to be recursive and iterative rather than a straightforward sequential process: based on emerging theoretical insights or observation, at any point in the theorizing process, scholars may go back to the previous stage to reconsider the key attributes, their connections and configurations, and their orchestrating themes. Thus, while we illustrate the stages and corresponding heuristics sequentially, in practice,

events" (Hedström & Swedberg, 1998: 1), and they are integrative insofar as they explain why attributes co-occur in the same configuration to explain an event or outcome (see Miller, 1996). Moreover, as Ragin (2008: 109) has suggested, thinking in terms of "causal recipes" stimulates such integrative thinking for "to think in terms of recipes is to think holistically and to understand causally relevant conditions as intersections of forces and events."

TABLE 1
The Stages and Heuristics of the Configurational Theorizing Process

Stage	Description of stage	Heuristics	Description of heuristics
Scoping	Identifying relevant attributes that may plausibly form configurations	*Complexify from an anchor*	Use a key explanatory attribute as an "anchor" for identifying other connected attributes
		Identify plausible coherence	Develop hunches about possible themes orchestrating the attributes into configurations
		Simplify to higher-order constructs	Aggregate attributes into higher-order constructs depending on their conceptual similarity or their connection with an orchestrating theme
Linking	Specifying how the attributes connect with one another in specific configurations	*Think conjunctively*	Think about the specific types of interdependence links among attributes (contingency or complementarity)
		Think equifinally	Think about the multiple configurations that may be equally effective in explaining the phenomenon
		Think about absence	Think about how the absence of attributes connects with the presence of attributes in configurations
Naming	Labeling configurations to evoke their orchestrating themes and overall meaning	*Articulate with simplicity*	Use simple verbs and terms to verbalize the linkages among the attributes of configurations
		Capture the whole	Craft an overarching narrative across configurations (for the whole configurational theory) to convey the central theme shared by configurations
		Evoke the essence of configurations	Label each individual configuration to evoke its orchestrating themes

configurational theorizing is likely to be an iterative process. We will return to the importance of these iterations, which we call "theorizing feedback loops," after discussing each stage of the theorizing process.

Scoping

The explanatory attributes that underlie most social phenomena are potentially "limitless" in their complexity unless we bound them with our theoretical ideas (Ragin, 1992: 217). Therefore, the scoping stage should aim at delimiting the attributes that explain a phenomenon while simultaneously doing justice to the complexity that surrounds it.[5] As with all good theorizing, scoping is best initiated by learning as much as possible about what brings about a phenomenon, both from existing theory and extant substantive knowledge regarding the phenomenon. Park, Fiss, and El Sawy (2020: 1498) have referred to this as understanding the "factorial logic of a configuration" that "describes which elements are important for the outcome of interest to occur and why, as well as which elements are causally not relevant and may be stripped away."

We suggest that, to gain such an understanding, scoping requires scholars to embrace the inherent tensions between complexity and simplicity. That is, the process of scoping involves not only complexifying the explanation of a phenomenon by considering as many relevant explanatory attributes as possible, but also simplifying it by conceptualizing similar or coherent attributes as higher-order constructs whenever possible, thus reducing the number of attributes under consideration. The tensions between complexifying and simplifying are respectively encompassed by two of the scoping heuristics we propose below; namely, "complexify from an anchor" and "simplify to higher-order constructs." All the while, through the scoping process, scholars should also aim at probing the plausible coherence of the explanatory attributes under consideration (i.e., "Do these attributes

[5] Our use of the term "scoping" aligns with the meanings of the verb "to scope"—that is, "to look at, especially for the purpose of evaluation" and "to identify an area, limited but somewhat flexible" ("Scope," n.d.).

make theoretical sense together in forming configurations that explain the phenomenon?"). This aim is encompassed by our heuristic "identify plausible coherence." We now illustrate these three scoping heuristics.

Complexify from an anchor. The point of departure of the scoping stage is to complexify the explanation of the phenomenon of interest by considering as many explanatory attributes as possible. To manage the challenge of where to start complexifying, we recommend starting from an "anchor"—one or more attributes that one believes to be important to explaining the outcome. Rarely, if ever, does a single explanatory attribute by itself lead to an outcome of interest. For example, if one is interested in understanding gender-inclusive (or exclusive) "gatekeeping" (e.g., Connell, 2005; Reskin & Padavic, 1988)—that is, how or why some male executives serve as "gatekeepers" who promote gender equality in organizations while others serve to inhibit it—presumably, some attribute (or attributes) of the male executives themselves (e.g., their power, their performance legacy, their backgrounds or experiences [Dwivedi, Joshi, & Misangyi, 2018]) would serve as the anchor to the theorizing process. The key scoping question then becomes: "With which other explanatory attributes do these key male executive attributes combine to explain the outcome of interest (i.e., gender inclusion)?" Complexifying would thus involve building out from the anchor explanatory attribute(s) to also consider how they may combine with other potentially theoretically relevant explanatory attributes—in the foregoing example, this may include attributes of female candidates seeking to enter the executive ranks of the organization, or attributes of the organizational or industry context (e.g., Clark & Horton, 2019).

Complexifying will also likely involve considering multiple theoretical or even disciplinary domains, whereby scholars expand their thinking beyond the theoretical domain or discipline in which their initial hunch about the anchor is grounded. For instance, the theoretical grounding of Dwivedi et al.'s (2018) study of gender-inclusive gatekeeping among male top executives extended beyond the gatekeeping literature to include theories on gender inequality, implicit leadership theories, imprinting, and executive successions. This complexifying process is particularly important for phenomena that can be "partially explained by more than one theory, where none is sufficient to fully explain the phenomenon" (Folger & Stein, 2017: 5). Indeed, such "collective insight" from different disciplines and literatures has been called for in recent efforts to theorize about grand challenges in the management literature (George et al., 2016: 1880). For instance, advancing explanations of poverty may be well served by taking a multidisciplinary configurational theorizing approach, as it has been well established that behavioral, structural, and political explanatory attributes all contribute to explaining poverty (Brady, 2019: 157).

While explanations are ultimately grounded in one or more theoretical domains, complexifying also typically entails thinking broadly with respect to extant substantive knowledge—that is, observations, anecdotes, conversations, quantitative and qualitative data—that one finds relevant to understand the phenomenon. The aim here is to explicitly reflect on and include in the theorizing process explanatory attributes identified through observation and substantive knowledge of the phenomenon, whatever the source of that knowledge—which Weick (2014) has referred to as "racking one's mind" with observation by tolerating high levels of complexity and ambiguity (see also Becker, 1998). Previous work on contrastive reasoning (e.g., Ellsaesser, Tsang, & Runde, 2014; Folger & Stein, 2017; Runde & de Rond, 2010) also offers processes that scholars can take to broaden their thinking about a phenomenon. One such process involves using a "fact–foil" approach in which a set of attributes theorized or observed to explain the phenomenon of interest ("the fact") is compared to a similar set of attributes that did not lead to the phenomenon of interest (the "foil")—with the idea of the comparison being that "potential causes are likely to be located where the causal histories of the fact and the foil differ" (Folger & Stein, 2017: 309; Lipton, 1991). In practice, the fact–foil juxtaposition often takes the form of "Why X [fact] rather than Y [foil]?", where the foil can be based on observation, intuition, or prior theory (Folger & Stein, 2017: 309). Mills's (1959/2000) notion of taking a "comparative grasp" similarly suggests that examining how relevant explanatory factors of a phenomenon may have changed across different contexts or historical periods may enable scholars to find "leads" that inform their theorizing and allow identifying new explanatory attributes.

Identify plausible coherence. A configurational theory not only implies that multiple attributes combine to explain an outcome, but also that there is some inherent logic or plausible coherence among the attributes in question (Miller, 1986). Hence, in configurational theorizing, scholars must focus from the very outset on gaining some awareness—however imperfectly formed—of the coherence or orchestrating theme(s) that underlie the combinations of

attributes (Miller, 2018). This heuristic, then, encourages scholars to ask the following question to initiate the process of identifying plausible coherence: "How or why do these multiple attributes plausibly combine with each other to explain the outcome?" Answering this question may lead scholars to develop hunches about several possible orchestrating themes that could serve as the reasons for why or how the attributes are linked together (which we further elaborate below).

A classic example of such thinking is Miller and Friesen's (1984: 22) theorizing that several attributes—namely, "standardization, rules and regulations, formal communications, and tight controls"—form a "machine bureaucracy" organizational configuration to achieving organizational effectiveness, and that this configuration tends to occur in "large size organizations" in "stable environments" *because* large size induces standardization relying on impersonal control, which may in turn facilitate increases in organizational size due to economies of scale, and a stable environment enables organizational procedures to be routinized and formalized (see also Miller, 1986: 236)

The process of identifying plausible coherence may be aided by making explicit the configurational arguments implicit in extant theories or literatures. For example, early scholars in the corporate governance literature suggested that "firm performance depends on the efficiency of a *bundle* of governance mechanisms in controlling the agency problem" (Rediker & Seth, 1995: 87, emphasis in original)—in other words, that combinations of internal monitoring, external monitoring, and managerial incentives were most effective. Based upon these early suggestions, a more "holistic approach" to corporate governance research has emerged (Aguilera, Filatotchev, Gospel, & Jackson, 2008; Filatotchev & Boyd, 2009: 258; Misangyi & Acharya, 2014). Clues pointing to coherence therefore might be that scholars in a given literature use words such as "bundles," "clusters," "combinations," "systems," "syndromes," or "gestalt" in their theorizing or to describe their findings. For instance, while Williamson (1991: 271, emphasis added) himself rarely used the word "configuration" in formulating transaction costs theory, configurations seem implicit in his suggestion that each form of governance (i.e., markets, hybrids, or hierarchies) are "defined by a *syndrome of attributes* that bear a supporting relation to one another." Likewise, resource-based arguments of firm competitive advantage (Barney, 1991) hint that configurations of resources are what is important to competitive advantage, as resources are suggested to be "*nested in* and *configured* with one another" (Black & Boal, 1994: 132, emphasis added) and are most effective when they form "*bundles* of complementary resources and capabilities" (Barney & Zajac, 1994: 8, emphasis added).

In some literatures, indications for the plausible coherence of configurations among explanatory attributes may be more empirically based. For example, past studies of climate change have empirically identified that climate attributes cluster together regionally and that different such clusters map to distinct patterns of change (Mahlstein & Knutti, 2010). When theorizing based upon such evidential clues, scholars should carefully probe for plausible coherence, as the empirical existence of clusters in and of themselves does not necessarily imply such coherence—it may represent statistical artifacts, coincidence, or other reasons that may not be meaningfully coherent.

Simplify to higher-order constructs. In configurational theorizing, complexity increases exponentially with the number of attributes considered and their potential connections. The result can be a lack of theoretical parsimony and plausible coherence. Given this challenge, a simplifying theorizing step is to look for higher-order constructs that help to subsume this complexity and limit the number of explanatory attributes that are considered. Perhaps the most straightforward form of such simplification occurs during the theorizing process when scholars recognize that certain explanatory attributes can be parsimoniously thought of at a more abstract level based upon their underlying commonality. To identify such higher-order constructs, one might reflect on what is conceptually common to the different attributes under consideration and in what ways these attributes share similar properties or principles that can be simplified while maintaining cohesion (see Grandori & Furnari, 2008). For example, in theorizing about organizational control, rather than trying to consider the many possible incentives- and monitoring-based controls as attributes, one could think instead in terms of the higher-order constructs of "outcome-based" and "behavioral-based" control mechanisms (e.g., Eisenhardt, 1985)—or, even more abstractly still, the constructs of "markets," "bureaucracies," or "clans" (e.g., Ouchi, 1980)—and such thinking may provide the simplification needed.

Furthermore, the plausible coherence underlying certain explanatory attributes may potentially serve as a basis for combining attributes into higher-order constructs. Indeed, in some theoretical domains such simplification may already be alluded to or

even conceptualized. For instance, in thinking about poverty, rather than thinking of an individual's education, income, and occupation all separately, scholars can combine these multiple explanatory attributes into the higher-order construct of socio-economic status (e.g., Adler et al., 1994; Tobias, 2017), as this commonly used construct essentially captures the coherence or "orchestrating theme" underlying these multiple attributes. Similarly, to understand how national systems of innovation reduce poverty, one might begin with attributes such as "investment from foreign sources," "trade dependence," "government spending," and "income redistribution." These four attributes can then be thought of as higher-order constructs such as "external economic dependence" (the former two attributes) and "internal economic policies" (the latter two), respectively. This simplifying move makes it easier to grasp how higher-order constructs combine to reduce poverty—which is less daunting for theorizing than is thinking about all four of the initial attributes simultaneously.

Linking

The linking stage of the configurational theorizing process involves thinking about how or why the attributes specified in the scoping stage connect to each other. Thus, linking is about discovering the combinatorial logic that "explains how the different elements of the configuration relate to one another to produce the outcome in an analytical way" (Park et al., 2020: 1498). To this end, we offer heuristics for theorizing the conjunction (or co-occurrence) of attributes in configurations and the disjunction (or equifinality) of such configurations. We also offer heuristics aimed at theorizing how or why an attribute's absence may be integral to the configurations theorized to explain the outcome, for, as noted above, the absence of attributes is often just as consequential as their presence to explaining a phenomenon.

Think conjunctively. "Conjunctive causality" involves the co-occurrence of two or more attributes in producing an outcome; this implies a combinatorial thought process that combines attributes through an "AND." Put differently, theorizing about conjunction centers on thinking in terms of "interdependence," "interaction," or "mutual enhancement" to probe connections among the attributes specified in the scoping stage in an effort to unpack how or why they connect with each other in constituting a causal recipe. Conjunction most often involves attributes that are theorized to serve as complements or contingencies to one another. While contingency means that the explanatory effects of one or more attributes is a function of the presence or absence of some other relevant attribute(s), complementarity instead means that two or more attributes mutually enhance one another's contribution to a desired outcome—that is, they are "synergistic" (e.g., Grandori & Furnari, 2009; Milgrom & Roberts, 1995). Thus, when two or more attributes are complementary, the "whole is more than the sum of its parts" (Ennen & Richter, 2010: 207).

Thinking about complementarities requires one to not only think in "AND" terms, but also about how or why the explanatory factors mutually enhance one another. For example, Siggelkow (2001) showed that fashion company Liz Claiborne's strategic choices of providing mix-and-match designs and a full in-store collection mutually reinforced each other, pointing at the consistency between design modularity and mass customization as the chief reason underlying complementarity (i.e., seeing the full collection in a store invites customers to mix and match, which in turn makes it easier to produce a full collection because of the modularity of mix-and-match designs). Similarly, Porter (1991: 10–13, emphasis added) argued that "strategy is about *combining* activities" pointing at the fit or consistency between multiple resources and activities as the underlying driver of successful strategy occurring when "the whole matters more than any individual part."

Contingency is another form of conjunction of longstanding interest in configurational research (e.g., Meyer et al., 1993). As noted, theorizing about the contingency of a single attribute (e.g., how uncertainty affects organizational structure), particularly in the form of interactions or moderators, is part and parcel of correlational theorizing. However, theorizing about contingencies in configurational terms challenges scholars to think more deeply about how or why a combination of multiple attributes—that is, a configuration or causal recipe—is contingent upon some other factor (or perhaps even a combination of other factors) in producing an outcome. In other words, to theorize about contingency in a configurational way, one must first think about the theoretical mechanisms underlying the "AND." For example, Bell, Filatotchev, and Aguilera (2014) illustrated that U.S. investors' valuation of foreign initial public offerings (IPOs) depends on different configurations of monitoring- and incentive-based corporate governance mechanisms that the firm under IPO may adopt; and that, in turn, the effects of these configurations are contingent on one contextual factor: the firm's home-country regulatory institutions (e.g., strong vs. weak

legal protection for minority investors). This is because some corporate governance practices, if applied *together*, signal legitimacy yet country-level regulatory institutions might alter such legitimacy perceptions, making conjunctions of governance practices unnecessary for a high valuation. Thus, identifying the underlying reasons for why the conjunction of attributes explains the outcome (in this case, "legitimacy signaling") enables scholars to theorize what contextual factors may serve as contingencies affecting the effects of causal recipes.

Think equifinally. Equifinality means that different configurations or recipes of attributes may be equally effective in bringing about an outcome (Katz & Kahn, 1978; Meyer et al., 1993). Thinking about equifinality therefore invokes notions of disjunction, which implies a combinatorial thought process combining attributes or configurations of attributes through an "OR." The equifinality of attributes is closely related to the idea of substitution—namely, that one or more attributes or attribute configurations may be alternatives to bringing about an outcome. Substitution implies functional equivalence of these attribute configurations, which differs from the mutual enhancement underlying complementarity. For example, Gresov and Drazin (1997) suggested the equifinality of alternative information processing practices (i.e., vertical information systems, lateral relations, hierarchy) that are functionally equivalent and substitute for one another in meeting organizational information processing demands generated by certain features of the environment (i.e., number of competitors, rapidity of technological change, etc.). More generally, substitutive causality underpins theories of organizational design regarding different structural options, especially in the context of conflicting functional demands (e.g., Gresov & Drazin, 1997; Siggelkow, 2002) or in alternative funding sources for entrepreneurial activity (e.g., Hallen & Eisenhardt, 2012). Indeed, the seminal work on configurations is replete with equifinal configurations (e.g., Miles & Snow, 1978; Miller & Friesen, 1984; Mintzberg, 1979), and therefore an excellent way to stimulate theorizing about equifinality is to revisit and further build on this work.

While the foregoing notion of equifinality inherently involves the equifinal paths occurring across different instances (i.e., cases) exhibiting the outcome, equifinality may also occur within a given case, and, in particular, when outcomes are overdetermined by the presence of more than one sufficient explanatory attribute. In other words, overdetermination occurs when several explanatory attributes or particular combinations of attributes are each sufficient for bringing about the outcome and more than one of these sufficient causes is present in a case. For instance, as Nadler and Tushman (1989: 201) have noted, individual behavior in organizations is frequently overdetermined by multiple forces, including work design, supervision, rewards, the immediate social system, and physical setting. Other examples of overdetermination include the presence of multiple safeguards to avoid accidents, or the fact that individuals who combine multiple advantages—such as coming from a wealthy family background, having educated parents, being married without kids, and being educated—would likely avoid poverty even if one or even more of these factors were not present. Overdetermination requires a form of theorizing that allows multiple attributes to manifest in a given case and thus stands ready to benefit from equifinal thinking.

Think about absence. Asymmetric causality involves thinking about absence, which entails combinatorial thinking in terms of "NOT." The incorporation of the absence of the explanatory attributes in causal recipes is one of the main ways through which configurational theories can address the asymmetry inherent in complex causality (Misangyi et al., 2017). That is, configurational theorizing benefits from thinking about linkages among the attributes combined in a configuration in terms of both why or how the presence of attributes as well as their absence may combine with other relevant attributes in the recipe. To do so, scholars must flip their frame of reference and conceptualize the absence of an attribute as an explanatory attribute in and itself, rather than simply thinking about the attribute as not being applicable to the outcome (cf. Inkpen & Choudhury, 1995; Powell, 2018).

At its core, thinking about absence requires scholars to think about how or why the absence of each attribute that constitutes a causal recipe is interrelated with the presence and absence of the other attributes. In so doing, the foregoing heuristics regarding conjunction and equifinality apply. With respect to conjunction, while the absence of an attribute may be theorized to serve as either a contingent or a complementary factor, thinking about absence focuses attention on trade-offs between attributes—that is, the idea that the presence (or absence) of one attribute requires the absence of another attribute to have an effect on the outcome—which tends to inherently involve thinking about incongruences, tensions, and juxtapositions among attributes. There are numerous examples of such tensions in the classic literature on structural contingency theory (e.g., Thompson, 1967) and

configurational approaches (e.g., Mintzberg, 1979). For example, formalized organizations such as machine bureaucracies require the absence of dynamism in their environment to be effective, whereas highly flexible production systems require the absence of market demands for standardized products in order to be effective.

With respect to equifinality, theorizing the absence of attributes involves thinking about situations when the outcome is produced by alternative combinations of the presence of one attribute and the absence of another or vice versa (i.e., attribute X is present and attribute Z is absent *or* attribute X is absent and attribute Z is present). For example, Halme, Rintamäki, Knudsen, Lankoski, and Kuisma (2020) theorized the equifinal configurations of corporate social responsibility (CSR) practices leading to environmental and social performance improvements and argued that both the presence and absence of a CSR account owner can be conducive to such improvements if combined with the presence of different explanatory attributes (such as, respectively, CSR management systems and strong external pressures).

Naming

Because theorizing involves creating "linguistic device(s) to organize a complex empirical world" (Bacharach, 1989: 496), and because we understand the world verbally and visually, *how* scholars articulate their arguments matters a great deal and shapes how their theories will be received. Whereas the scoping and linking stages of the configurational theorizing process involve specifying which attributes combine, and how and why they do so, the naming stage of the process helps to shape and communicate the meaning of the configurations that explain a phenomenon.

Naming is a critical stage in configurational theorizing because it involves framing an overarching narrative that meaningfully communicates complex patterns that constitute each theorized configuration and the configurational theory as a whole. We identify three key naming heuristics, which are informed by insights that compelling explanations are simultaneously plausible and distinctive (Shklovsky, 1990). Accordingly, our heuristics "articulate with simplicity" and "capture the whole" encompass plausibility, whereas the heuristic "evoke the essence of configurations" encompasses distinctiveness. These heuristics also address another central challenge of developing configurational theory: capturing both distinctiveness and holism. Specifically, they seek to convey the themes that overarch the attributes and their conjunctions within a configuration (with the heuristic "evoke the essence of configurations") and across configurations (with the heuristic "capture the whole"). Thus, taken together, they help to see both the distinct and the whole (e.g., Mills, 1959/2000).

Articulate with simplicity. Key steps in the scoping and linking stages involve uncovering and describing the complexity of configurations expected to explain an outcome. One associated risk is that configurational theories are "much more complex than traditional bivariate or interaction theories" (Doty & Glick, 1994: 245). Further, as configurational theorizing may build on multiple theories or disciplines, as illustrated in the scoping section, it risks importing and confounding technical jargon from multiple research traditions and thereby becoming needlessly complex. To minimize these risks, this heuristic focuses on seeking simplicity in the verbal articulation of theorization[6]—by "[moving] down the ladder of complexity" (Shepherd & Suddaby, 2017: 69). While it is important to avoid theoretical arguments that oversimplify expected configurational patterns linked to an outcome, impactful configurational theories should be "products of inspired synthesis and a strong sense of conceptual esthetics" (Miller, 1996: 506). This comes from labeling and framing the themes that orchestrate attributes within and across configurations (Miller, 1993), and we discuss this idea below under the heuristics of "capture the whole" and "evoke the essence of configurations." Relatively simple explanations also resonate with audiences, even those who understand that the underlying causality is complex (Lombrozo, 2010).

Because language lies at the heart of understanding scientific research (Kerlinger, 1986) and, by extension, theory (Bacharach, 1989), articulating with simplicity requires the use of appropriate language that avoids the pitfalls of convoluted explanations (Chater & Vitanyi, 2003). In describing how attributes come together to shape the phenomenon of interest, the use of natural language at the expense of technical jargon will facilitate simplification. Specifically, verbs such as "allow," "combine," "contribute," "enable," "enhance," or "diminish" and "prevent" (see Sloman & Lagnado, 2015) serve to articulate causality holistically in ways that are consistent with configurational

[6] By "simplicity," we denote syntactic simplicity or elegance (i.e., the number and conciseness of one's arguments), rather than ontological simplicity or parsimony (i.e., the number and complexity of attributes postulated) (Kukla, 2001).

theorizing. They convey how multiple attributes combine to produce an outcome of interest and thereby enable relatively simple descriptions of complex patterns of causality. Similarly, complementary and substitutionary effects can readily be described in simple language too—for example, by evoking the idea of fit (Keck & Tushman, 1993) or trade-offs (Fiss, 2011). For example, with respect to climate change, efforts to communicate the relationship between CO_2 and rising temperatures typically mention attributes as "contributing" to climate change (rather than causing it) and note the "feedbacks that either *amplify* or *diminish* the initial warming" to emphasize conjunction (Royal Society, 2020: para. 11, emphasis added). Relatedly, Miles and Snow (1978: 30) portrayed top management's strategic, administrative, and technological choices as "interrelated" aspects of organizational adaptation that need to "hang together" for organizations to survive environmental change.

Capture the whole. Simplicity does not mean that scholars should eschew rich description. In fact, for configurational theory to be impactful, scholars should aim for rich characterizations of configurations (Miller, 2018). Configurational theorizing requires crafting an overarching narrative that captures the different theorized configurations or the "logical structure" of a configurational theory as a whole (Doty et al., 1993: 1199). Here, a scholar should ask themselves, "How can I best capture the overarching logic underpinning the configurational theory as a whole?"

In order to do so, the heuristic "capture the whole" emphasizes the importance of conveying the "central organizing themes" (Miller, 1996: 506) that the theorized configurations share in common. Often, such common themes rest on an appropriate fit between levels of analysis or certain kinds of attributes. Good configurational theorizing clarifies this. For example, Miles and Snow (1978) framed their configurational theory of organizations around the interplay of "strategy, structure, and process," rendering their theory both pithy and comprehensive. Further, they crafted a narrative around "the process of organizational adaptation" as a common theme underlying their four distinct configurations of strategy, structure and process (defenders, analyzers, prospectors, reactors). They then described each configuration as a "variation on this common theme"—that is, a different way in which organizations adapt (or fail to do so) to environmental change.

One vital step toward capturing the whole is to label the configurational theory so that a central organizing theme is transparent. For example, Ostroff and Schmitt (1993) followed this approach by titling their theory "Configurations of Organizational Effectiveness and Efficiency," highlighting the idea of fit between effectiveness and efficiency. Similarly, the title of Keck and Tushman's (1993) study, "Environmental and Organizational Context and Executive Team Structure," draws attention up front to the interdependencies between these different levels of analysis. Relatedly, capturing the whole may be accomplished by conveying what the theorized configurations are configurations of and developing a compelling narrative of why and how the phenomenon is configurational in nature. For example, Mintzberg (1983)'s seminal work conveyed concisely that it was about configurations of organizational structures and crafted a convincing narrative about why different sets of structural attributes (i.e., parts of the organization, coordination mechanisms, and design parameters) and contingency factors tend to cluster into five configurations of organizational structures. His narrative highlighted that any organization is subjected to "five pulls" from key parts of the organization (e.g., the top management pulls to centralize, the technical staff pulls to standardize, etc.) and that, under specified conditions, one pull comes to dominate the others, prompting the organization's structure to fall into one of the five configurations (Mintzberg, 1983: 153).

Evoke the essence of configurations. A configurational theory needs also to draw attention to the distinguishing features of each configuration. This requires labeling individual configurations as well as explaining their orchestrating themes, albeit here the focus lies on describing the themes *within* each configuration rather than *across* all the configurations. One simple heuristic to label a configuration is to think about exemplars or "strong instances" of that configuration—or, cases that may best approximate the configuration theorized. Imagining typical or strong cases representing a configuration helps scholars theorize its driving, orchestrating theme(s). Examples of highly influential configurational theories reflect the approach of clearly evoking the essence of each configuration.

For example, Miles and Snow (1978) illustrated the four configurations mentioned above with rich descriptions of "almost pure examples"—that is, organizations incarnating each configuration at its best, which explicitly illustrated the presence of orchestrating themes to an audience: "As you read these examples, look for evidence of consistency in the way the management has enacted the organization's environment and designed internal operations"

(Miles & Snow, 1978: 31). They proceeded by linking each configuration's label (defenders, analyzers, prospectors, reactors) with the respective exemplars' descriptions, explaining why they accurately capture the configuration's orchestrating themes. A similar approach was followed by Mintzberg (1979: 1–6), who first richly illustrated an imagined pottery organization to describe five core coordinating mechanisms and then labeled five configurations of organizational structure (simple structure, machine bureaucracy, professional bureaucracy, divisionalized form, and adhocracy) by mapping them to one of the core coordination mechanisms (direct supervision, coordination by plan, etc.).

The search for descriptive and evocative labels of configurations can also benefit from "rich historical data [that] can help researchers discover such themes that drive configurations" (Miller, 1996: 507)—for example, by supporting the theory-building effort through in-depth case studies (Eisenhardt, 1989). The specific label for a configuration can come from the language that is native to certain kinds of cases that are evoked for the theorizing (i.e., an emic perspective), or from the language that comes from the literature (i.e., an etic perspective). A focus on cases during the process of theorizing often includes an implicit or explicit comparison with other cases that are instances of different configurations. In any event, rich descriptions of the configurations are needed to inform the labels that scholars attach to configurations and evoke their essence.

Theorizing Feedback Loops between Stages

As noted above, the stages of the configurational theorizing process may be recursive and iterative rather than strictly sequential. Thus, although scholars may aim to progress from scoping to linking to naming (as indicated by the black arrows in Figure 1), they will more often than not find that it is useful to go back to a previous stage of theorizing and reconsider the configurations' attributes and their linkages. Such "theorizing feedback loops" emerge in the course of the theorizing process and are indicated by the dotted arrows in Figure 1. While illustrating the different types of feedback loops that may emerge along the process is beyond the scope of this paper, we briefly discuss below three main types of theorizing feedback loops.

A first kind of feedback loop concerns situations when scholars go back to scoping because of ideas that emerge in the linking stage. By thinking about conjunction, equifinality, or the absence of attributes, scholars may spot logical contradictions between the configurations being considered and the outcome, prompting them to re-specify the attributes initially identified. For example, while theorizing that organizational innovation can be explained by the conjunctions of market-based practices (e.g., pay for performance) and community-based practices (e.g., regular away-days), Grandori and Furnari (2008) thought about organizations where this same configuration of practices resulted in the absence of innovation. Such logical contradiction in turn prompted the search for other attributes that could better explain the contradictory cases, eventually leading to the inclusion of another attribute (i.e., democratic practices) in the configurational model.

Second, scholars may reconceptualize the attributes identified in the scoping stage by reflecting on the labels and narratives that they devise to describe configurations in the naming stage. For example, Mintzberg (1983: 152) noted that firming up the names of his five organizational structure configurations "suggested a slight modification in the typology of decentralization [i.e., one of the attributes] which rendered it more logical." Naming may also be conducive to a third type of theorizing feedback loop by prompting scholars to rethink the conjunctive and equifinal links and the role of absent factors considered in the linking stage. Indeed, by reflecting on the similarities or differences between the configurations and the orchestrating themes of each configuration elucidated through naming, scholars may come to realize that some of the linkages among the attributes may need to be reconceptualized depending on their role in the overall configurational theory and the individual configurations.

Taken together, these three types of theorizing feedback loops highlight that the knowledge that scholars develop through each stage of the configurational theorizing process may then inform their thinking about attributes and configurations in the other stages.

DISCUSSION

Management scholars increasingly address causally complex and multifaceted phenomena in their research (e.g., Ferraro, Etzion, & Gehman, 2015)—a complexity that requires theories that can reflect conjunctural causation and equifinal paths to an outcome. Perhaps even more so, studying grand challenges such as poverty reduction, gender equality, and affordable clean energy requires an approach that eschews simplistic explanation and recognizes how causal forces

at different levels of analysis contribute in complex ways to outcomes of interest (George et al., 2016).

We build on the extant literature on configurations that suggests that configurational thinking and theorizing are well suited to explaining causally complex phenomena. To facilitate scholar's ability to theorize configurationally, we offer a model of the configurational theorizing process that consists of three stages—scoping, linking, and naming—and provides three sets of heuristics aimed at stimulating configurational thinking in each of the stages. Our model and its heuristics are aimed at facilitating theorizing about causally complex phenomena, and, in so doing, our hope is to make configurational theorizing more accessible and thereby enable such theorizing to become a standard component of scholars' theoretical toolkits. Further, as we discuss below, our process and heuristics lend themselves to scholars coming from a range of traditions and employing a variety of methods.

Embracing configurational theorizing requires a deliberate effort to reorient thinking in ways that differ from the conventional correlational theorizing approach in management scholarship. Thus, our elaboration of configurational theorizing as a process invites scholars trained in correlational methods to see the phenomena in which they are interested from a different angle, to think differently, and to generate new ideas. Our focus on the process of configurational theorizing emphasizes that developing theory is, in itself, a practice that can be improved through "rules of thumb" inducing different ways of thinking and facilitating discovery. By unpacking the stages and heuristics of the configurational theorizing process, we show how scholars can put such theorizing into practice, thus concretely helping them to theorize causally complex phenomena. Most approaches to theorizing in management emphasize the activities that scholars conduct in the process of building a theory—such as abstraction, imagination, mental simulation, and visualization (DiMaggio, 1995; Ravasi, 2017; Weick, 1995). In contrast, the rules of thumb offered here are meant to help generate new ideas and "quick switches" in one's ways of thinking about a phenomenon (Abbott, 2004). In this regard, heuristics focus on spurring mental operations that scholars can implement in practice.

The heuristics we have developed here are especially relevant for configurational theorizing because such theorizing has arguably lagged behind recent methodological developments that enable analyses of causal complexity. Hinings (2018) and Miller (2018) recently noted this mismatch between configurational methods and theorizing, highlighting the need for more and better theorizing to interpret the results obtained in configurational analyses. For instance, while configurational methods have been increasingly used to advance theories in management research (e.g., Fiss, 2011; Misangyi et al., 2017), the potential of configurational thinking to enhance theorizing remains underdeveloped. Our heuristics are theoretically generative, in that they help scholars discover new ideas while theorizing configurations, thus enabling them to build novel configurational theories or elaborate existing theories whose implications remain contested (e.g., Doty et al., 1993; Grandori & Furnari, 2013; Ketchen, 2013).

Although heuristics are conventionally understood as cognitive shortcuts formed by habit (Herbert, 2014), they can in fact also prompt the search for novelty. From this perspective, our heuristics stand in contrast to many of the dominant ways of theorizing. For instance, rather than encouraging a focus on a limited number of attributes that adequately explain an outcome (Friedman, 1953), our scoping and linking heuristics explicitly stimulate thinking about a larger number of attributes as well as about the conditions under which different causal explanations hold. As such, our heuristics are intended to counteract some of the ways of thinking that many of us will have acquired by training and habit. Moreover, there is potential to extend the heuristics we delineate in the current article. We encourage scholars to articulate additional heuristics for configurational theorizing and the role that they play in the discovery of configurations. For instance, scholars might articulate heuristics to determine which topics to study, which data to use, and which research questions to ask (Bearman, 2018). Scholars might also assess which combinations of heuristics predict impactful configurational theorizing around novel themes (cf., DiMaggio, 2018).

Configurational Theorizing in Perspective

The configurational approach is of course not the only way to address situations of causal complexity. Process theorizing (e.g., Langley, 1999), case-based theorizing (e.g., Eisenhardt, 1989; Eisenhardt & Graebner, 2007), or simulations (e.g., Levinthal, 1997) are likewise examples of approaches that strive to capture causal complexity. They do so by laying out sequences of events and outcomes (e.g., Cloutier & Langley, 2020; Langley, 1999), by developing case-based models to identify patterns from one case or a small set of cases (e.g., Eisenhardt, 1989; Eisenhardt & Siggelkow, 2007), or by simulating the interaction of key attributes

in the search for local optima (e.g., Rivkin, 2000; Rivkin & Siggelkow, 2007).

A useful way of understanding some of the differences between these approaches is to consider how they cope with the task of explaining their phenomena of interest. Abbott (2004) distinguished semantic explanations, centered on contextually rich, detailed accounts of phenomena, and syntactic explanations, centered on stylized, analytical representations. While the former explains phenomena in ways that can be intuitively understood, the latter concern the "syntax" or fine-grained relations connecting the elements of an explanation. Configurational theorizing bridges semantic and syntactic explanations by combining fine-grained, analytical knowledge about how the elements of the configuration interact to produce the phenomenon with holistic, synthetic knowledge about the orchestrating themes underlying the configuration. Thus, case- and process-based theorizing tend to privilege semantic explanations by richly describing patterns induced from cases (Cornelissen, 2017), while simulations tend to emphasize syntactic explanations by focusing on the underlying structure of abstract dependencies (Marks & Gerrits, 2018). Configurational theorizing strives to balance and combine the semantic and syntactic ways of explaining by providing evocative names and descriptions of configurations (naming) while analytically unpacking the variety of linkages connecting their elements (linking).

Our model of the configurational theorizing process and the heuristics we have offered here could also prove helpful to scholars working with approaches that might not be considered configurational. Of course, we recognize that our heuristics may be applied selectively in such instances. In particular, machine-learning techniques, such as topic modeling, have become an important approach to analyzing unstructured data and understanding how attributes cluster together. Many of these techniques are applied atheoretically, and thus scholars face the challenge of assessing the value of their results to inform theory (Adjerid & Kelley, 2018). Topic modelers treat coherence—reflecting "clear and well-bounded topic(s) evident criteria for classification" (Hannigan et al., 2019: 592)—as an important measure of fit. The heuristic of "identifying plausible coherence" implies that coherence can be conceived of as being broader than merely a metric. Viewing coherence configurationally helps substantiate whether any emergent classification scheme is truly meaningful and indicative of orchestrating themes. Moreover, topic modelers frequently face the challenge of labeling and theorizing the dimensions that they uncover in their analyses. Our naming heuristics are likely to be particularly relevant here. While machine-learning techniques usually focus on labeling the individual categories they derive (akin to our heuristic "evoke the essence of configurations"), there is also merit in "capturing the whole"—that is, describing an inherent logic that helps scholars make sense of the clustering or classification scheme. As such, we hope that our heuristics inspire scholars coming from a range of traditions and working with their own methods to develop novel and robust theory.

Further Considerations: Visualization and Formalization

An important way of supporting theory development is through visual means. Visualization can support the creation of a "compelling conceptual product" (Langley & Ravasi, 2019: 173). Visual artifacts, such as figures and drawings, have the potential to simplify, as in the old adage "a picture is worth more than a thousand of words." Rather than being mere representations, visual artifacts can serve as performative tools that allow scholars to generate ideas (e.g., Beunza & Stark, 2004) and may help both scholar and audience to think differently about a problem. As Mills (1959/2000: 213) specified, "charts, tables, and diagrams of a qualitative sort are not … only ways to display work already done; they are very often genuine tools of production." While scholars should feel free to use any type of visualization that they find helpful (i.e., in the tradition of heuristics, scholars must find what works for them), it is again helpful to think creatively here. Though boxes and arrows can depict a broad range of mappings between attributes and outcomes (Campbell, Sirmon, & Schijven, 2016; Gupta, Crilly, & Greckhamer, 2020), they conventionally depict linear relations such as direct, moderation, and mediation effects (Langley & Ravasi, 2019). However, such representations can be adapted to show nonlinear processes via relational network maps, which still use boxes but visualize a multitude of interconnections among them—for example, the multiple interdependencies among climate risks such as technological progress, globalization, and climate change (Yokohata et al., 2019). Alternatively, Pugh, Hickson, Hinings, and Turner (1969) employed a variety of tables to show graphically how cases cluster along multiple dimensions. Using a set-analytic approach, Ragin and Fiss (2008) introduced a format of presenting configurations in tabular form that sheds light on the range of configurations encompassed in the theory

as well as the distinguishing features of each configuration. Configurational theorists can also borrow visualization tools and formats from relational methods, such as two-mode network analysis (Breiger, 2009), lattice analysis (Mohr & Duquenne, 1997), topic-modeling (Hannigan et al., 2019) and Venn diagrams (Ragin & Fiss, 2017; Rubinson, 2019). Although these methods are different, they all aim at visualizing complex patterns in a multidimensional space and thus offer useful visualization techniques for configurational theorists.

Relatedly, rendering the complexity of configurations manageable can also be done using formal methods of representing theoretical statements. While tables are a traditional way of presenting configurational arguments such as typologies (e.g., Miles & Snow, 1978; Mintzberg, 1979), the use of formal statements has the advantage of allowing for greater precision and grain in configurational statements. Set-analytic approaches in particular have used Boolean statements to capture configurational arguments (e.g., Fiss, 2007; Ragin, 2000, 2008). Such statements combine the precision of mathematical statements with the richness of verbal concepts, allowing scholars to formally express configurational arguments that can be used both for theory building and for theory testing (e.g., Park et al., 2020). In addition, the Boolean formalization of configurational arguments allows for greater theoretical accuracy in comparing theorized (T) and empirically obtained configurations (E′). Using simple Boolean operations such as the intersection of statements, scholars can compare configurations that were theorized and actually observed, but also what was theorized and not observed, and what was not theorized but actually observed (e.g., Frambach, Fiss, & Ingenbleek, 2016; Park et al., 2020; Ragin, 1987). Of course, such formalization can also be combined with visualization and tables, providing rich ways of conveying configurational arguments.

CONCLUSION

In their *Academy of Management Review* editorial, Suddaby and colleagues (2011) asked, "Where are the new theories of organization?", noting the limited novelty of recent management theories against the backdrop of radical changes occurring in the world. One way to discover new management theories is to change the ways in which we as scholars theorize—and, in particular, by developing configurational theories that engage with causal complexity and by embracing discovery-oriented theorizing heuristics such as the ones we have suggested.

More broadly, the increasing interest in how we explain the world around us has raised causal inference to prominence in academic studies more generally (Pearl, 2000; Pearl & MacKenzie, 2019). This body of work, which underscores the manifold ways in which people make sense of causal relations, is consistent with the encouragement for scholars "to engage constructively across the range of approaches to theorizing, rather than a defensive positioning of the established dominant paradigm" (Delbridge & Fiss, 2013: 330). Our model of the configurational theorizing process and its correspondent heuristics are informed by this recent research into causal inference, because we recognize scholars' ability to explain causation in ways other than those that they have been socialized to do. At the same time, our model and heuristics are not merely descriptive. We contend that they will have practical application in fostering novel ways of theorizing in management. By focusing on advancing configurational theorizing, we hope to foster more diverse and robust theorizing about causally complex phenomena.

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