CHAPTER 1

CONFIGURATIONAL THEORY AND METHODS IN ORGANIZATIONAL RESEARCH: INTRODUCTION

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ABSTRACT

The notion of configuration – that the whole is best understood from a systemic perspective and should be viewed as a constellation of interconnected elements – is arguably one of the central ideas of organization studies. Yet, this idea also remains one of the field's least understood aspects. In this volume and its introduction, we outline a new perspective for understanding configuration. Our starting point is the emergence of set theoretic configurational methods, and especially Qualitative Comparative Analysis (QCA), which provides novel ways for analyzing configurations. Our volume goes beyond introducing a new method to the fields of management and organization, as these methods furthermore offer an opportunity to rethink our understanding of the field and to develop different ways of theorizing the rich complexity of relationships that characterize organizational life. In this introduction, we introduce some of the key themes that differentiate the approach taken here from previous work on organizational configurations and provide

evidence for the emerging renaissance of the configurational approach in organizational theory and research.

INTRODUCTION

The notion of configuration – that the whole is best understood from a systemic perspective and should be viewed as a constellation of inter-connected elements – is arguably one of the central ideas of organization studies, stemming back to the writings of founding fathers such as Max Weber (1922[1978]). That this notion has at the same time remained one of the field's least understood aspects is one of the greater paradoxes of organization studies. While the emergence of systems thinking (Katz & Kahn, 1978; Lawrence & Lorsch, 1967) in organization and management theory presented one of its most defining developments, configurational theory and analysis itself – while showing considerable advances (e.g., Meyer, Tsui, & Hinings, 1993; Miller, 1996) – has yet to live up to its promise. Indeed, after the notion of configuration became a central feature of organization theory during the 1970s and 1980s (e.g., Child, 1972; Miles & Snow, 1978; Mintzberg, 1983), and while some key contributions emerged in the 1990s and early 2000s (e.g., Child, 2002; Doty, Glick, & Huber, 1993; Ketchen, Thomas, & Snow, 1993), the development of the configurational approach appears to have stalled. This failure points to a dual challenge to configurational theory: the need to develop theory that can account for the complexity of configurations, a complexity that grows exponentially as more elements are added to the system, along with a methodology that can account for the complexity of such interconnected elements that bring about outcomes jointly and synergistically rather than individually and in a linear fashion.

While these challenges appear daunting, we believe the current volume provides further evidence that we are currently witnessing an emerging renaissance of the configurational approach in organization studies. The background to this development is a need to account for the growing complexity of organizational life, coupled with an increasing number of new theories to account for this complexity (e.g., Suddaby, Hardy, & Huy, 2011).

While a number of more recent works have aimed to address this need to better account for the configurational nature of organizational phenomena (e.g., Desarbo, Di Benedetto, Song, & Sinha, 2005; Marlin, Ketchen, & Lamont, 2007; Siggelkow, 2001, 2002), the specific approach that unites the contributions of this volume presents perhaps a more fundamental shift in that it aims to reorient both theoretical conceptualization and methodological approach towards configurations based on ideas that have their roots in a set theoretic understanding of the world (Ragin, 1987; Zadeh, 1972). Our starting point is the emergence of set theoretic configurational methods, and especially Qualitative Comparative Analysis (QCA) in the social sciences. QCA has its origins in a rich tradition of comparative case-based sociology and has been systematized, further developed and transformed into a coherent approach by Charles C. Ragin (1987, 2000, 2008). In recent years, several new innovations have been introduced further broadening the scope and performance of the method (Rihoux & Marx, 2013; Schneider & Wagemann, 2012).

QCA was originally developed as a middle way between the case-oriented (or "qualitative"), and the variable-oriented (or "quantitative") approaches; a "synthetic strategy" that would "integrate the best features of the case-oriented approach with the best features of the variable-oriented approach" (Ragin, 1987, p. 84). It provides the researcher with a novel set of tools for disentangling complex causal relationships. While these methods emerged in political science and sociology, where their comparative nature made them attractive to researchers aiming to understand the configurational nature of a limited set of cases (Marx et al., 2013; Rihoux & Marx, 2013), their ability to handle causal complexity also makes them particularly attractive to organization and management scholars who believe that "organizations are best understood as clusters of interconnected structures and practices, rather than as modular or loosely coupled entities whose components can be understood in isolation" (Fiss, 2007, p. 1180). These methods are distinct in the sense that they combine set theory and Boolean algebra to offer researchers a set of new methodological tools to analyze how configurations of explanatory conditions result in observable changes or discontinuities in an outcome.[1] To be sure, neither the use of set theory nor the focus on configurations are methodologically new and several methodological tools exist (see Table 1). What is distinct is the combination of set theory and configurational approaches as a method. The different contributions in this volume apply these methods and show in depth their potential to analyze configurations and contribute to theory development in a diverse field of applications in management and organization science.

Table 1. Set Theoretical Configurational Analysis and Adjacent
Methods.

	Set Theory	
	Set theory	Non set theory
Configurational	*Focus of the Volume*	Cluster analysis
Non-configurational	Fuzzy-set regressions	Conventional correlational analysis

Moreover, the purpose of our volume goes beyond merely introducing a new method to management science. More to the point, we believe the contributions also provide an opportunity to rethink our understanding of the field of organization studies and to perhaps offer a different way to theorize the rich complexity of relationships that characterize organizational life. We further develop this idea in this introduction and further elaborate the distinctive features of this configurational methodological and theoretical approach. Our introduction ends with an overview of the different contributions in the volume.

THE INTERPLAY OF THEORY AND METHODS

The idea that theory and methods are closely interconnected and tend to evolve in tandem is certainly not novel. As Sørensen, Van Maanen, and Mitchell (2007, p. 1146) have noted, "method can generate and shape theory, just as theory can generate and shape method." As the process of creating representations of social life involves a dialogue of ideas (theory) and evidence (data) (Ragin, 1994), we should not be surprised to see both talk and back-talk in this exchange; how we get to know the world is as consequential as the ideas we start out with. In the natural sciences, the role of instrumentation and calibration has long been understood to be a central feature in the evolution of theoretical paradigms (Kuhn, 1970). It was the construction and operation of the Large Hadron Collider that eventually allowed physicists to detect the Higgs boson, providing for support for the Standard Model of particle physics; the failure to discover the Higgs boson would have required consideration for other theoretical accounts underlying the Higgs mechanism. Yet, the analogy to the natural sciences goes deeper than the shift in overall theoretical accounts. At a very basic level, researchers in the natural sciences routinely calibrate their measuring

devices "so they match or conform to dependably known standards" (Ragin, 2008, p. 72). As Ragin points out, calibration is also known to social science researchers in the form of indices such as the Human Development Indicator, which allows international comparisons based on a country's quality of life based on life expectancy, education, and income. Yet, the use of finely calibrated measures tends to be the exception rather than the rule in the social sciences. In management, too often we tend to use performance measures such as ROE or ROA in a sample-dependent way, paying relatively little attention to the actual meaning of where on the overall scale a firm would need to fall in order to qualify as "high performing" relative to an external standard as opposed to the sample in question.

Taking this interplay between theory and methods as a starting point, our goal in the current volume is to start a conversation about the ways in which a configurational approach may reshape both the ways in which we theorize organizations and how we empirically and theoretically engage with our data. At the same time, we are keenly aware that much work still remains and that the process of establishing a novel theoretical perspective will be a lengthy one. As Kuhn noted, "a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it" (1970, p. 150). Our own goals here are much more modest in that we do not aim to supplant current theories as much as complement them with a different perspective.

THE CONFIGURATIONAL CHALLENGE

Before delving more deeply into the approach suggested here, it is helpful to consider the challenges associated with taking a configurational perspective. Most centrally, this challenge involves dealing with increased levels of complexity that have to be accounted for both theoretically and methodologically. The causes of such complexity are outlined by Ackoff (1981, pp. 15–16), who notes that a complex system satisfies three conditions: "(1) The behavior of each element has an effect on the behavior of the whole. (2) The behavior of the elements and their effects on the whole are interdependent. The way each element behaves and the way it affects the whole depends on how at least one other element behaves. (3) However subgroups of the elements are formed, each has an effect on the behavior of the whole and none has an independent effect on it." Configurational theory and methodology thus have to account for complex interdependencies that

run counter to the "the more we observe variable X, the more we should observe outcome Y" statements that tend to dominate current theorizing in organization and management studies and are based on a correlational understanding that may in fact bear at times little resemblance to the true causal structure of the relationships in question; particularly when that relationship is complex and causality is conjunctural and reflective of what Mackie (1974) called INUS conditions that are *i*nsufficient but *n*onredundant parts of a condition which is itself *u*nnecessary but *s*ufficient for the occurrence of the effect. Instead, a configurational approach is more likely to be interested in what Ragin has called "chemical causation" (Ragin, 1987) and "causal recipes," (Ragin, 2000) that is, constellations of causal factors that jointly bring about an outcome.

The challenge of the configurational approach is further complicated by the fact that much configurational theorizing tends to be informed by a logic of consistency – that is, by the idea that all elements of a configuration are equally important and present necessary conditions for either its existence or effectiveness. This logic flows from the holistic nature of configurations which holds that the configuration should be viewed as a whole, not as a collection of elements. Yet, this holistic view presents a problematic assumption that is likely to lead both researchers and manages astray (Fiss, 2011). Most empirically observed configurations are likely to contain not only indispensable parts but also inconsistencies and trivial elements. Yet, identifying what really matters for the configuration to be effective and what is perhaps expendable is a nontrivial problem given that our understanding of the causal processes involved is almost always incomplete. Building on prior theories regarding the challenges of understanding causal relationships in typologies and taxonomies, we may think of this issue in configurational theory as the "Blue Butterfly Problem," where "the creation of a class [of] blue butterflies is irrelevant for the understanding of the anatomical structure of Lepidoptera" (Leach, 1961; quoted in Pinder & Moore, 1979, p. 109). The challenge is a dual one; what matters to the configuration may not always be evident, and what would appear to matter may in fact be quite irrelevant.

If complexity is both the strength and the challenge of the configurational approach, it is the sources of this complexity that present the greatest opportunities for theoretical advancement. Yet, theorizing these sources is a task that remains largely incomplete. Prior work, however, offers some insight as to where such theoretical advancement may both begin and connect to other theoretical accounts. For instance, in one of the key pieces outlining the configurational approach, Meyer et al. define organizational

configurations as "any multidimensional configuration of conceptually distinct characteristics that commonly occur together" (1993, p. 1175). This definition conceptualizes configurations in terms of the co-occurrence of distinct characteristics, thus using commonality as a reference point (Fiss, 2009). Yet, considering the realm of possibilities, why is it that we tend to observe only a relatively limited set of configurations that have empirical instances? As Miller (1981, 1986) notes, there are at least three reasons for this state of affairs. First, competitive pressures from the environment tend to weed out unsustainable models, thus pointing to the role of external selection pressures emphasized both by economic theories of competition and sociological theories of population dynamics. Note, however, that this perspective does not require the presence of any internal consistency or fit. This is where the second reason comes in: organizations tend to be drawn to certain configurations that are internally harmonious and mutually reinforcing, demonstrating alignment among elements of structure, strategy, process, and environment (Miller, 1990). This suggests an internal selection mechanism, usually based on the experience of what works, or at least the impression that such arrangements appear to have worked for another organization. Such arguments open the door for both organizational learning and institutional arguments on top of efficiency-based ones. In this regard, Fombrun (1989) has pointed to the symbolic-cultural aspect of organizational configurations; the processes that bring about a limited set of configurations are likely to operate at multiple levels, including competitive and evolutionary forces alongside sociopolitical and cultural ones. Yet, the challenge of exploring the interaction between these theoretically distinct forces remains so far largely unmet. Third, organizational change frequently tends to be noncontinuous and episodic, suggesting that hybrid forms are less likely to be explored (Miller & Friesen, 1984). Such arguments would also find support from a perspective of localized search around performance peaks on a rugged landscape (Levinthal, 1997). Finally, there is of course also a mathematical reason for why not all theoretically possible configurations actually have empirical instances, as the number of possible configurations increases exponentially with the number of attributes considered.

The theoretical challenges of the configurational approach have been complemented by equally vexing methodological ones. Configurational theory has arguably been held back by a mismatch between theory and methods; "while theoretical discussions of configurational theory thus stress nonlinearity, synergistic effects, and equifinality, empirical research has so far largely drawn on econometric methods that by their very nature tend to

imply linearity, additive effects, and unifinality'' (Fiss, 2007, p. 1181).
Commonly used methods such as cluster analysis, deviation scores, and
interaction effects all have severe deficiencies in their ability to disentangle
the complex causal processes inherent in organizational configurations,
thus providing only limited insights into what lies at the core of the
configurational approach (e.g., Fiss, 2007). Given the strong interplay
between theory and methods we outlined above, it is evident that advances
in the configurational realm will have to be as much methodological as
theoretical. We now aim to sketch the outline of such a path forward for the
configurational perspective.

THE CONFIGURATIONAL PERSPECTIVE: A SKETCH

The perspective we suggest here and that pervades the contributions in
this volume is at this time perhaps best understood not so much as a novel
theory of organizations but as a meta-theoretical perspective of organiza-
tional phenomena; it does not necessarily challenge the power of
mechanisms suggested by prior organizational theories such as resource
dependence, contingency theory, institutional theory, population ecology,
or transaction cost economics, but instead it suggests that detecting and
understanding the proper operation of these mechanisms may require novel
and different ways of detecting and examining them. Yet, the perspective we
outline here is more than merely a novel methodology – it challenges not
only empirical research strategies, but relies on a number of different
theoretical concepts to bring about a novel way of thinking about
organization studies. We do not aim to provide an exhaustive discussion
of these ideas in this introduction, but merely aim to sketch some of the
themes that are the hallmarks of this perspective (for a more extensive
introduction see Fiss, 2007, 2011; Schneider & Wagemann, 2012).
  Perhaps the most fundamental aspect of the configurational approach we
aim to outline is its reliance on *sets* and *set–subset* relationships rather than
variables and correlations. The shift may appear to be a subtle one, but it is
in fact a significant one. As Ragin (2000, 2008) notes, sets are not variables,
although they may be based on data that is usually employed to create
variables and although they may have the same fine-grained texture to them
as variables. However, sets are superior to most variables in that they are
not only precise but are also calibrated based on either prior theoretical
or substantive knowledge about the concept they are meant to represent.
This reliance on external theoretical criteria to calibrate sets makes them

particularly powerful tools in the hands of researchers aiming to gain a substantive understanding of the nature of organizational phenomena. For instance, instead of using variables that are mean-centered and thus usually sample-dependent, the calibration of fuzzy sets based on external criteria forces the researcher to be explicit in determining what it means to be at any given level of a scale or other dimension of relevance, for example, performance. This greater theoretical precision forces the researcher to be explicit about how their measures are constructed.

Hence, a set theoretic approach starts from the idea that attributes of cases are not best described in terms of variables but in terms of set-relations. Variables aim to capture a dimension of variation across cases and distributes cases on this variation. A set assess whether, or that what degree, a case is a member of a set and then analyses the intersection between sets. For example, a country can be a member of the set of countries with orthodox budgetary policies. Sets are theoretical constructs. The criteria for set membership are defined by the researchers and are often *calibrated* against an external standard. Membership in sets need not be black or white, absent or present, but can vary by the degree to which they satisfy membership criteria. In QCA, one often makes the distinction between crisp sets, which are dichotomous in nature (in or out) or fuzzy-sets, which range from 0 to 1, which allow for more fine-grained assessment of set membership. Both types of sets are applied in the different contributions in this volume. Fuzzy-sets can take different ranges across sets in analysis. For some sets one can easily work with dichotomous crisp sets. For example, firms are either certified or not, or are publicly traded or not. For other sets, such as financial performance, more fine-grained information and varying degrees of membership can be used. The assignment of set membership scores follows from the definition and operationalization of the set in question and the calibration to an external standard. Fuzzy sets can take many gradations from dichotomous to continuous and are characterized by the fact that their floor value and ceiling value has substantial meaning. In this way fuzzy sets are both quantitative as well as qualitative. Full membership to a set and full nonmembership to a set are qualitative states and assessments. In order to illustrate the difference consider, for example, the measure of yearly budget deficits and the set of countries with orthodox budget policies within the European Union in the context of new adopted rules (six pact following stability pact rules) following the financial crisis. Country A can have a deficit of 2.0%, country B of 2.7%, country C of 2.9%, country D of 3.1%, and country E of 3.2%. Although the measured variation between countries A and B is larger than between Country C and

countries D and E this variation might be far less theoretically relevant since the new rules stipulate that a maximum of 3% deficit is acceptable and concurs to budget orthodoxy while budget deficits in excess of 3% are problematic and generate a whole host of measures including sanctions. In terms of a standard variable approach, we have variation between 2% and 3.2%. In set theoretic terms, we have countries with set membership or nonmembership to the set of countries with orthodox budget policies. Nonmembership to this set can be used to explain a range of qualitative relevant outcomes such as social protests. The assessment of set membership is calibrated against an external parameter, namely the rules laid down in the stability pact. Several contributions in this volume use fuzzy sets and show how they are operationalized.

While the idea of calibration is perhaps still a relatively familiar one to organizational researchers, the shift from correlations to set–subset relationships is a more demanding one to make. Correlational analysis is a standard tool of the social scientist, and in the hands of the skilled researcher they are powerful means especially of isolating the effect of individual causes. Yet, it is this very aspect that has led to the dominance of what Ragin (2008) has termed "net effects thinking," that is, an analytical meta-theory in which "each independent variable is assumed to be capable of influencing the level or probability of the outcome *regardless of the values or levels of other variables* (i.e., regardless of the varied contexts defined by these variables)" (Ragin, 2008, pp. 177–178, emphasis in the original). In contrast, the configurational approach, and particular that based on QCA, places contextual effects at its very center; the effect of an individual causal condition (measured as set membership) may crucially depend on context, that is, the presence or absence of one or several other causal conditions. The configurational approach thus shifts from generally assuming additivity (and allowing for deviation from this model mainly by means of interaction terms) to a view that generally assumes interaction between elements, be it in the form of positive or negative complementarities. We should be quick to add, however, that the configurational approach does not require synergistic relationships and still allows for additive ones. However, it is fair to say that interdependence is assumed to be the norm, rather than the exception. Furthermore, it is the set–subset relationship, rather than the correlation, that more easily allows for the creation of fully interactive models of causes, as set–subset relationships are direct relationships rather than correlational tendencies and are not constrained by issues such as multicollinearity. The set–subset relationship thus allows researchers to more easily assess the particular configuration of contingencies derived from

the context in which every organization is located (Child, 1977; Moores & Yuen, 2001).

The shift to set–subset relationship comes with another important benefit: it greatly facilitates the analysis of *necessity and sufficiency* in causal relationships. Both necessity and sufficiency are fundamental aspects of causation (e.g., Goertz & Levy, 2007), yet correlational analysis is not well geared towards analyzing relationships in terms of whether causes are necessary, sufficient, both, or neither. The standard pattern of "the more we observe variable X, the more we should observe outcome Y" that is typical of much of current theorizing and dovetails with correlational analysis in fact suggests a fairly simple pattern where a given variable is assumed to be simultaneously necessary and sufficient. Yet, this is a strong assumption to impose upon both theory and evidence. For instance, take the field of corporate governance that is examined by Bell, Aguilera & Filatotchev (2013, pp. 159–180). It would seem plausible that good governance is a necessary condition for the presence of sustained high firm performance; without it, such continued performance would likely be threatened by a host of issues. Yet, the presence of good governance by itself is not guarantee that a firm will be able to keep achieving such sustained performance; there are many well-governed firms that nevertheless fail to achieve such returns. In other words, it would appear that while good governance is a necessary condition, it is not sufficient for bringing about sustained performance. From a correlational perspective, such a pattern is problematic as it is not additive but in fact resembles a multiplicative model where the outcome would approach zero even if only one of several predictor variables approaches zero. If good governance was indeed a necessary but not sufficient condition, it would help account for the failure of corporate governance researchers to find support for a consistent relationship between governance practices such as CEO duality and performance (e.g., Dalton, Daily, Ellstrand, & Johnson, 1998). From a set theoretic point of view, however, such a pattern would be perfectly consistent with a necessary but not sufficient condition, suggesting that such a view would offer a powerful tool for analyzing relationships that are more complex than simultaneous necessity and sufficiency (Fiss, 2011).

If the presence of INUS conditions – or conjunctural causation, in Ragin's (2000) terms – is the rule rather than the exception, then the need for a shift in both theoretical accounts and empirical approaches would seem evident. Indeed, organizations would appear to be a prime field where we might witness situations of *causal complexity*, where causes may combine in a number of ways to bring about outcomes of interest, leading to situations

where individual causes may be neither necessary nor sufficient, although of course any other combination of the presence and or absence of necessity and sufficiency may be possible. If so, a methodology such as QCA that was developed to deal with such situations along with novel ways of theorizing these relationships may offer a promising way forward and perhaps a way to resolve a number of long-standing puzzles in organization theory including board composition, the effect of strategic planning, market share, strategic groups, or generic strategies (e.g., Nicolai & Kieser, 2002), to name but a few.

There is yet another important difference associated with the shift from a correlational understanding to a configurational approach based on set theoretic understanding of the world. As we have noted, correlations are symmetric – statements such as "the more we observe variable X, the more we should observe outcome Y" imply that the reverse is also true; the less we observe variable X, the less we should observe the outcome, and indeed from a purely correlational view one might reverse predictor variable and outcome without affecting the correlation itself. While correlation thus is symmetric, much of our theorizing about organizations should in fact involve *asymmetric causation* where the set of factors that bring about an outcome may be different from the set of factors associated with the absence of the outcome; for instance, "the configurations leading to very high performance are frequently different from those leading to merely high or average performance" (Fiss, 2011, p. 411). The contrast here becomes perhaps even more evident when considering not so much continuous as binary outcomes. The preferred correlational tools for such situations – logit or probit regression and their derivatives – simultaneously model the presence and the absence of the outcome, making it impossible for such approaches to model the presence and the absence of the outcome separately. Consider, for instance, the large literature on the adoption of organizational practices, which has made extensive use of binary outcomes to model adoption. Yet, it would seem that the factors that predict when firms adopt a practice may be quite different from those that lead firms to abstain from adoption and not merely their inverse. For instance, the absence of sufficient slack resources or incompatibility in terms of technological, political and cultural fit (Ansari, Fiss, & Zajac, 2010) may all account for the failure to adopt, yet having resources and sufficient levels of fit may be insufficient in explaining adoption; not every firm that might adopt actually will.

As we have outlined previously, one of the key issue of configurational theory relates to dealing with the issue that the number of theoretically

possible configurations may become overwhelming even with a relatively limited number of relevant characteristics. This means that in a truth table listing all possible configurations we will frequently or indeed usually observe a number of cells that do not contain empirical observations, which presents special problems for the analysis of such tables. In addition, the number of empirical observations may be quite small relative to the number of causal conditions, further complicating the use of standard multivariate analyses. In QCA, this is known as a situation of *limited diversity* (see also the contribution by Charles Ragin, 2013, pp. xv–xx). While limited diversity presents a challenge for many conventional forms of analysis, this is not the case for a set theoretic approach based on QCA. As Ragin (2008) demonstrates, the researcher can use counterfactual analysis to overcome the challenges of limited diversity, allowing the drawing of inferences based on both ''easy'' and ''difficult'' counterfactuals. For organizational researchers, the notion of limited diversity is important for at least two reasons. First, limited diversity allows researchers to detect patterns of both presence and absence within the multidimensional property space; patterns that ''may offer insights by making explicit the otherwise implicit and widely shared assumptions about what design elements should or should not go together'' (Fiss, 2007, p. 1189). Second, knowledge about the presence and absence of certain elements may for instance also be used to extrapolate to nonexistent configurations, thus offering a strategy for extending configurational thinking from the existing empirical universe to the world of the possible.

Finally, the configurational approach carries particular relevance for organization studies because it focuses our attention on the concept of *equifinality*, that is, the notion that ''a system can reach the same final state from different initial conditions and by a variety of different paths'' (Katz & Kahn, 1978, p. 30). In other words different causal paths may lead to the same outcome. This implies that a set theoretic configurational approach develops a conception of causality that allows for complexity (Ragin, 1987, 2008). In early contributions Charles Ragin referred to *multiple conjunctural causation* which means, first of all, that it is most often a combination of explanatory sets that eventually produces an outcome. Secondly, several different combinations of sets may produce the same outcome. Thirdly depending on the interaction with other sets, a given set may very well have a different impact on the outcome.

This notion of equifinal configurations presents both a challenge and an opportunity for organization theory and therefore has been the focus of a number of recent works (e.g., Doty et al., 1993; Fiss, 2007;

Gresov & Drazin, 1997; Payne, 2006; Marlin et al., 2007). Equifinality in organizations may for instance arise when different structural design alternatives are available to deal with environmental contingencies, resulting in the same functional effect (Gresov & Drazin, 1997). The notion of equifinality hence accounts for the persistence of a variety of design choices that can lead to the desired outcome, making it a key yet undertheorized element of organization theory (e.g., Ashmos & Huber, 1987; Short, Payne, & Ketchen, 2008).

The set theoretic configurational approach we have outlined here again differs from standard methods and theorizing in that equifinality is assumed to be the norm rather than the exception. From a methodological point of view, both crisp and fuzzy set QCA are specifically geared towards helping the researcher identify not only equifinal configurations but also provide measures of their empirical importance in terms of the coverage measure, which in essence describes how empirically important each of the equifinal configurations is. Further, it allows for the analysis of both first and second order equifinality, where first-order equifinality refers to equifinal types that exhibit different core characteristics (e.g., type A vs. type B), while second-order equifinality refers to neutral permutations within a given first-order equifinal type (e.g., type A_1 vs. $A_2 \ldots A_n$) (Fiss, 2011, p. 398). As such, the set theoretic approach provides us with tools for a more fine-grained and complex analysis of equifinality that goes beyond merely identifying its existence and towards allowing the researcher to identify its specific nature and significance. Indeed, set theoretic approaches allow researchers to determine the degree of explanatory parsimony or complexity they want to achieve.

OUTLINE OF THE VOLUME

The purpose of our introduction has been twofold: to locate our contribution within the broader field of organization studies and to introduce some of the key themes that differentiate the approach taken here from previous work on organizational configurations. Yet, the role of an introduction is to set the stage for the main contribution, which is offered by the following chapters.

Chapter 2 by Marx, Cambré, and Rihoux (2013, pp. 23–47) on "Crisp-Set Qualitative Comparative Analysis in Organizational Studies" starts with a stylized presentation of two dominant research strategies, case-based

research and variable-based research, and how crisp-set QCA relates to them. Subsequently, the authors further introduce crisp-set QCA as a step-wise approach and discuss its different applications in organization studies. The chapter then turns to a presentation of some distinctive strengths of the approach which include the reduction of complexity by pooling cases together through the use of truth tables, achieving parsimony through minimization, analyzing causal complexity and using different sorts of data. Finally, Marx and co-authors discuss the main criticisms that have been raised with regard to crisp-set QCA and propose some solutions.

Chapter 3, ''The Two QCAs: From a Small-N to a Large-N Set Theoretic Approach'' by Greckhamer, Misangyi, and Fiss (2013, pp. 49–75), aims to provide guidance to prospective researchers interested in opening up QCA's potential for widespread use in organization studies involving large-N settings, both as an alternative and as a complement to conventional regression analyses. For this purpose, they compare small-N and large-N QCA with respect to theoretical assumptions and objectives, processes and decisions involved in building the causal model, selecting the sample as well as analyzing the data and interpreting the analytical results.

Chapter 4 on ''Configurational Analysis and Organization Design: Toward a Theory of Structural Heterogeneity'' by Grandori and Furnari (2013, pp. 77–105) reconstructs the roots, evolution and some prospects of configurational analysis in organization theory and organizational economics. First the chapter reveals the presence of elements of configurational analysis on many organization theory and organizational economics approaches. Secondly, the authors identify ''*structural heterogeneity*'' as an organizational property that can be distinctively studied by the configurational analysis. They then further elaborate and substantiate this notion using an empirical analysis of a multisector sample of firms.

Chapter 5 by Hak, Jaspers, and Dul (2013, pp. 107–127) on the ''The Analysis of Temporally Ordered Configurations: Challenges and Solutions'' focuses on a specific application of configurational methods in the context of analyzing processes, that is, a complex of activities that unfolds over time. In this context the order in which conditions appear in a configuration is of key-importance. In order to capture this, the authors develop the idea of temporally ordered configurations which can be defined as those configurations in which conditions occur in a specific temporal order. The chapter illustrates the aims, characteristics, and limitations of approaches that have been proposed as tools for the analysis of temporal order with an example. After discussing several approaches that deal with temporal order the

authors introduce an alternative approach, Temporal Necessary Condition Analysis (TNCA).

Chapter 6 by Jackson and Ni (2013, pp. 129–158), entitled "Understanding Complementarities as Organizational Configurations: Using Set Theoretical Methods," reviews the emerging literature on complementarities to identify a series of conceptual challenges related to understanding complementarities as organizational configurations, and examines the methodological challenges in studying how such elements combine to produce joint effects on performance. The chapter argues that new set theoretic methods using QCA may present a very useful methodological alternative to studying complementarities. The authors illustrate this potential by re-analyzing past work by Aoki, Jackson, and Miyajima (2007) on relationships between ownership structure, board structure, and employment practices of listed firms in Japan to show evidence of complementarities associated with hybrid configurations that combine market and relational forms of organization.

Chapter 7 by Bell, Aguilera, and Filatotchev (2013, pp. 159–180) on "Corporate Governance and Configurational Research: The Case of Foreign IPOs Listing in London" applies configurational methods to show how firm-level governance practices interact with informational asymmetries associated with a firm's industry. By examining foreign Initial Public Offerings that have chosen to list on London stock exchanges, the authors demonstrate that an assessment of the firm-level corporate governance configurations is incomplete without taking into account the firm's industry affiliation. Their use of fsQCA underscores the possibilities configurational approaches have in advancing theories of corporate governance.

In Chapter 8 on "Corporate Social Responsibility: A Multilevel Explanation of Why Managers Do Good," Crilly (2013, pp. 181–204) investigates the multilevel essentials of managerial behavior. Managers frequently confront dilemmas where maximizing shareholder value is incompatible with enhancing social welfare. Most explanations of responses to these dilemmas center on a single level of analysis and a single discipline. The novel approach that he suggests is to simultaneously study individual characteristics of managers and the social context in which they and their organization exist. Using a fuzzy set QCA using data on 335 managers of overseas subsidiaries of three multinational firms headquartered in the Netherlands, Crilly identifies the combined influence of effects at multiple level of analysis in explaining how managers respond to pressures for social responsibility.

Park and El Sawy (2013, pp. 205–224) deal with the topic of digital business strategy in Chapter 9, on "The Value of Configurational Approaches for

Studying Digital Business Strategy." They show how configurational approaches can help us to better understand the complex phenomenon of digital ecodynamics. They argue that configurational approaches are especially helpful as in inquiring system for exploring the holistic nature of digital ecodynamics. Support for their arguments comes from an empirical study that explores how IT systems, organizational dynamic capability, and environmental turbulence simultaneously and systematically combine to create competitive firm performance. They apply fuzzy set QCA to a sample of 106 Korean firms, showing how configurational approaches can create new practical insights in digital ecodynamics by offering multiple strategic options to organizations.

Chapter 10 by Raab, Lemaire, and Provan (2013, pp. 225–253) explores "The Configurational Approach in Organizational Network Research." It explains how a configurational approach and set theoretic methods can contribute to a deeper and more nuanced understanding of organizational networks and network relations. This is especially true for the study of "whole networks" of organizations where data collection difficulties often limit the sample size. The authors present two empirical examples of current research on whole networks, demonstrating how QCA can be used to analyze organizational networks. They then discuss the methodological and theoretical implications of the configurational approach for future organizational network research.

Chapter 11 by Pajunen and Airo (2013, pp. 255–278) on "Country-Specificity and Industry Performance: A Configurational Analysis of the European Generic Medicines Industry," links the configurational approach with the topic of institutional complementarities. The identification of country specific advantages for business activities is one of the most crucial issues of strategic management and international business literatures. The authors address this issue by examining location specific conditions for a successful generic medicines industry within 24 European countries. The findings of their fuzzy-set QCA show that there are no necessary conditions for the high performance or absence of the high performance industry. By revealing the causal complexity related to the issue, however, they show that the high performance or lack of it results from a configuration of conditions. Specifically, Pajunen and Airo identify two sufficient causal configurations to both outcomes. These findings provide clear implications for generic medicines industry firms who are planning location choices of their operations. In addition, this study provides a methodological advancement to explain and understand which country elements matter more, for what outcomes, and under what conditions.

Whittington, McKee, Goodwin, and Bell (2013, pp. 279–302) aim to blaze a novel path for leadership research in Chapter 12 by "Applying Fuzzy Set Methodology to Evaluate Substitutes for Leadership." They start from the finding that transformational leadership has been found to positively influence employee attitudes and behaviors. However, research also has shown that a variety of task and motivational factors lead to similar outcomes. Yet, little research has explored the potential interaction of transformational leadership with these other factors. The authors utilize fuzzy set QCA to explore the ways these factors may interact to produce positive employee outcomes. Specifically, they find that high levels of employee commitment and performance can be achieved in the absence of a transformational leader through various "bundles" of enriched jobs, challenging goals, and high quality leader–follower relationships.

Our volume closes with two final chapters. First, in a response piece entitled "We Try Harder: Some Reflections on Configurational Theory and Methods," David Ketchen (2013, pp. 303–309) provides a view from the vantage point of an eminent organizational scholar who has long worked in the field of configurational research. His thoughtful reflections provide insight in both the goals of the individual chapters and the gist of the overall volume. Finally, in our conclusion, we offer some further thoughts on the way forward for configurational theory and methods in organization studies.

This volume – a transatlantic collaboration in terms of both the editors and the authors – would not have come about without a dedicated set of scholars that generously offered their time and energy in creating what we believe is a terrific set of contributions. It is their insights that make or break a work such as this one. We would also like to thank the editor of *Research in the Sociology of Organizations*, Michael Lounsbury, for his encouragement and the gracious invitation to begin the conversations that eventually led to this volume. Lastly, we would be amiss if we did not acknowledge that all of us are indebted to Charles Ragin, whose path breaking work is an inspiration and in many ways remains the starting point of this book.

NOTE

1. A note on the use of terms. Throughout this chapter and the other chapters in this volume we use the term conditions for the explanans and outcome for explanandum. This corresponds to a degree to the notions of independent and dependent variables as used in more conventional methodological approaches.

However, as we argue in this chapter, and has been argued by Charles Ragin (1987, 2008) extensively, there are also significant ontological differences since a set-theoretic configurational approach departs from the notion of independently operating variables.

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