

Case Studies and the Configurational Analysis of Organizational Phenomena

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Within the organization and management literatures, the case study has traditionally occupied a somewhat peculiar position. On the one hand, case studies have a long and distinguished history in the study of organizations. They have featured prominently in academic research on organizations, and many of the most highly regarded and influential studies in the organization and management literature have employed a case-study approach (cf. Gephart, 2004). Some of the most well-known examples include Selznick's (1949) study of the Tennessee Valley Authority, Blau's (1962) and Crozier's (1964) research on the dynamics of bureaucracy, Allison's (1971) study of governmental action around the 1962 Cuban missile crisis, and Dalton's (1959) and Kanter's (1977) work on life within the modern corporation, to name but a few. In fact, one might well argue that case studies form the cornerstone on which modern organization theory has been built, providing rich insights into the workings of modern organizations

and ample opportunities for theory building. Furthermore, case studies occupy a central role for in the curricula of most business schools, where cases are used extensively as a pedagogical tool. Case studies are attractive in the classroom because they simulate real-world experiences, allowing the students to take on the roles of specific decision makers in actual organizations (Mauffette-Leenders et al. 2001). Their closeness to the experience of life in organizations and their appreciation for the complexities of organizational phenomena thus makes case studies attractive to academics and practitioners alike.

On the other hand, there has been a considerable debate over the scientific nature of case studies and the ways in which they are to be conducted. This debate over the case-study approach goes back to at least the 1940. Back then – as is largely true today – the ability of the case study to generate new ideas and thus contribute to theory development was uncontested, but

controversy focused on whether the case study could be used to derive generalizable insights (e.g. Lundberg 1941, Stouffer 1941, Foreman 1948). Even today, the case study remains probably the least understood and least formalized methodology in the study of organizations (Ragin and Becker 1992). Despite a number of works on the use of the case-study methodology (e.g. Yin 1981, Eisenhardt 1989), there is still relatively little agreement on how to write a memorable and publishable case study, particularly if this involves the use of qualitative evidence (Van Maanen 1998).

Unfortunately, the classic case studies tend to be of little help in clarifying how an exemplary case study is to be conducted and written up. Most offer no separate section on methodology at all, presenting instead the polished product without the guidelines as to how it was created. A few do offer more detailed insights into how the data was collected, how many interviews were conducted, and what sources were used, with some even offering summary tables of descriptive statistics regarding the context (e.g. Kanter 1977). However, the hermeneutic process of inference – how all these interviews, archival records, and notes were assembled into a coherent whole, what was counted and what was discounted – remains usually hidden from the reader. This is especially true for case studies relying primarily on qualitative field-work methods. Acknowledging the fact that ‘there are probably as many “methods” as there are fieldworkers,’ Kunda calls the methods section of his influential ethnography of life in US high-tech corporation ‘A Confessional of Sorts’ (1992, p. 229). Other authors have quite forcefully attacked current case-study practices as essentially ‘free-form research where everything goes’ (Maoz 2002, p. 164). As a result of the questions and perhaps the mystique surrounding it, the case study thus still presents a probably more risky research (and career) strategy, and the majority of published research on organizations tends to follow a variable-oriented approach using standard statistical estimation.

In the following, I examine the logic of the case study as it applies to the study of organizations. I take the position that the case study is distinguished from other organizational research strategies by a configurational understanding of organizational phenomena within a specific spatial and temporal context. This configurational nature of the case study presents both an advantage and a challenge *vis-à-vis* other research strategies, as it raises particular methodological demands. Perhaps most importantly, many of the quantitative methods commonly used to formally examine organizational configurations – such as cluster analysis, interaction effects, and hierarchical linear modeling – are not well suited to grasping the fundamentally configurational nature of the case-study approach. As I have argued elsewhere (Fiss 2007), I will suggest that set-theoretic methods such as qualitative comparative analysis (QCA) provide a viable alternative much better suited to the configurational nature of the case-study approach.

I begin by discussing the nature of cases and case studies and of organizational configurations as well as how configurations may occur at the intra-organizational, organizational, and supra-organizational levels, and across such levels. I further focus on the methods commonly used to examine organizational configurations – both qualitative and quantitative – and examine the ability of these methods to account for the configurational nature of the case study. I conclude by considering the implications of employing QCA for both the case-study methods and the theory of organizational configurations and lay out an agenda for future research on a configurational understanding of organizational phenomena.

OF CASES AND CASE STUDIES

A serious treatment of the case-study approach has to come to terms with the entity that the approach takes its name from, that is, the case. As Ragin (1992a) and others have pointed out, despite its widespread use and centrality in scientific discourse, the concept of the case is frequently not well defined and the term ‘case’

is used in a variety of different ways. Cases, for example, can be understood as theoretical constructs or as empirical units, and their relationship to the underlying phenomena may be conceptualized in a formative or reflective way (e.g. Ragin 1992a). What complicates the situation is that many of the various definitions of cases have considerable merit on their own, making a consensus definition that is both rigorous and encompassing hard to come by.

Rather than attempting a formal definition of a case here, I will focus on the underlying aspect of cases that is most relevant to the questions at hand, namely that cases and the process of 'casing' delimit the real world phenomena of interest within time and space (Ragin 1992b). In order to examine something as a case – whatever that may involve in more detail – one has to be able to identify and thus delimit the case from the multitude of phenomena and aspects that will be not be studied. This process of establishing boundaries around a phenomenon is what reduces complexity to manageable proportions and turns the potentially limitless possibilities into concrete 'cases,' usually by first defining the theoretical category of the case, narrowing it down to a subset of cases within this category, and then selecting specific empirical instances of this subset.¹ Indeed, at an abstract level, 'every study is a case study because it is an analysis of social phenomena specific to time and place' (Ragin 1992a, p. 2). While time and space offer intuitively appealing boundaries around a case, other conceptualizations are of course conceivable, such as cases of mechanisms (e.g. Hedström and Swedberg 1998) or sequences (e.g. Abbott 1992, Heise 1989). However, time and space are usually the most commonly used dimensions, and I will simply follow that convention here.

The process of delimiting or 'casing' is a necessary undertaking because it goes along with a fundamentally *contextual* understanding of cases, which holds that a case combines certain characteristics or features that appear together within it and give the case its essential character. As Walton notes, 'cases come wrapped in theories' (1989, p. 122). More specifically, cases come wrapped in

theories about what matters, where boundaries ought to be set, and what may be disregarded as either unimportant or of a different kind. The process of 'casing' is part and parcel of the normal conduct of social science research and often disguised by the ways in which we encounter our phenomena. Much of the social world comes to us in 'chunky' form, and frequently the boundaries of a case will be intuitively plausible and useful due to social convention (e.g. the nation state, an organization, a subunit, a team). However, it is important to remember that not everything that comes in a naturally consumable form is also best understood in that form. Frequently, social phenomena are perhaps better unwrapped, taken apart, and then reassembled in order to form a more analytically useful 'case.'

As noted above, I will argue here that one can distinguish the case study from other organizational research strategies by its configurational understanding of organizational phenomena within a specific spatial and temporal context. As the notion of 'casing' implies, a case is a holistic entity. In order to understand it, we have to study it in its entirety; a mere focus on parts of the case will lead to partial insight, potentially taken out of context. The research strategy of the case study must take account of this configurational character of the case. As Eisenhardt suggests, the case study 'is a research strategy which focuses on understanding the dynamics present within a single setting' (1989, p. 534). Instead of disaggregating the case into its features, operationalizing such features as variables, and then testing for correlations between these variables while controlling for as many other features as possible or relevant, the case-study approach aims to preserve the integrity of the case and understand it as a particular configuration of features embedded in a specific context and time. This configurational nature makes problematic any research strategy that focuses on one feature while 'controlling' for the effect of other features. As in the classic Indian fable about the blind men examining an elephant, with each one reporting on a different part of the

animal, the challenge lies in comprehending the case in its entirety rather than merely its parts.

A configurational understanding of the case also clarifies the nature of the case study. The case study is fundamentally a *research strategy*, 'to be likened to an experiment, a history, or a simulation, which may be considered alternative research strategies' (Yin 1981, p. 59). As Yin notes, this understanding also helps to remove the frequent confusion between the case study as a research strategy and the types of evidence used in it (e.g. qualitative vs. quantitative data) or the types of data collection methods employed to gather this data (e.g. ethnography vs. survey collection). Because the case-study approach is a research strategy that aims to maintain the configurational, holistic nature of the case or cases, it is not limited to any particular form of evidence or data collection, and it can involve single or multiple cases, various methods of data collection and several types and levels of analysis (cf. Eisenhardt 1989). In fact, combining evidence from multiple sources, such as interviews, archival data, and surveys frequently leads to the most successful organizational case studies. An essential feature of the case-study approach is therefore its propensity to foster triangulation across different data sources (Eisenhardt 1989, Yin 1994). Clearly not all situations and phenomena will lend themselves to a case-study approach. Yet, a case-study approach will frequently be a very desirable, if also demanding approach because it requires an in-depth understanding of the case rather than a superficial understanding that goes little beyond the operationalization of variables.

Although the view of the case study I employ here emphasizes the configurational nature of the case as delimited in time and space, it is important to note that this view does not imply an inability to make comparisons. Whereas the case study is a useful research strategy when engaging unique phenomena, most research on organizations is not concerned with such one-of-a-kind entities or events, but instead aims to develop an understanding of organizations that has broader

implications. The case-study approach thus tends to be comparative in nature, if only in the way in which observations from a case may inform knowledge about organizations and life in them more broadly by elucidating the features of a larger class of similar phenomena (Gerring 2004, 2007). In this sense, the case-study approach does frequently resemble more variable-oriented approaches in that the researcher tends to make typological reductions. However, as Stouffer (1941) notes, the case-study researcher differs from the statistician in that he can do what the variable-oriented researcher frequently cannot do, namely conduct an intensive, detailed analysis that can be adjusted during the course of the research project. The case-study approach is thus more dynamic in nature, and the researchers will constantly compare theory and data in order to achieve a fit between both (Eisenhardt 1989, Ragin 1994).

Furthermore, because the logic of the case study is not built around average tendencies in large samples, the selection of the case or cases takes on a critical role. This selection is usually informed by theoretical, not statistical reasons (Eisenhardt 1989). For example, Pettigrew (1990) argues that the selection of empirical sites for organizational case studies should focus on: (1) extreme situations, critical incidents, and social dramas; (2) polar types that allow for stronger contrasts; and (3) sites with a relatively high experience levels of the phenomena under study, that is, the phenomenon under study should manifest itself clearly and there should be easy to access this manifestation. Case selection is of course probably the most obvious example of the process of 'casing,' and again points to the importance of drawing boundaries around the organizational phenomenon of interest as essential to the case study.

THE NATURE OF ORGANIZATIONAL CONFIGURATIONS

I have argued that the case-study approach is unique as a research strategy in its configurational approach, that is, in its focus on

the relative arrangement of parts or elements that can only be fully understood in their entirety. To develop these arguments more fully and see how they apply to the study of organizations specifically, it is also necessary to clarify what is meant by a configuration and how configurational reasoning is reflected in current research on organizations. A useful starting point is offered by Meyer et al., who define organizational configurations as 'any multidimensional constellation of conceptually distinct characteristics that commonly occur together' (1993, p. 1175). Two things are particularly notable about this definition. First, it is empirically oriented in that it points to the presence of multiple instances of a constellation, be they across entities or time. Second, the definition emphasizes the co-occurrence of distinct characteristics, thus using commonality as a reference point, but leaving open what this commonality is based on.

The definition of Meyer et al. (1993) can thus be used with both typological and taxonomic approaches to understanding the nature of configurations. Whereas both approaches share the idea that a configuration is marked by some characteristic emerging from the constellation of its elements, they present different ways of arriving at this characteristic. Typological approaches of configurations are essentially reflective in that they conceive of configurations as containing an internal logic that exists independent of concrete instances and is merely reflected in the empirical manifestations. Accordingly, the typological approach is deductive and causality flows from the construct to the empirical manifestations; the empirical manifestations only take on meaning because of the construct (MacKenzie 2003). This approach has been used very successfully in research on organizational configurations, and examples include works by Delery and Doty (1996), Doty et al. (1993) and Drazin and Van de Ven (1985). By contrast, taxonomical approaches to organizational configurations take a more inductive, empirically based approach. Here, the construct is formative in that causality flows from the empirical manifestations to the

construct; the construct does not exist independently of its manifestations. Taxonomic approaches to organizational configurations were used more often in the past and include the works of Hambrick (1984) and Miller and Friesen (1978, 1980). However, they have recently become less popular as compared to typological approaches, which are more aligned with an emphasis on theory testing.

Regardless of whether configurations are derived deductively or inductively, researchers are usually interested in identifying the specific constellation of relations between the different parts that make up the organizational configuration (McPhee and Scott Poole 2001). Usually, the internal 'logic' of such organizational configurations is one of consistency that can be achieved by a variety of mechanisms. For example, the 'fit' characterizing configurations may be the result of internal, adaptive learning about how the various elements of the organization are best configured to achieve more efficient outcomes. As such, configurations are most likely to be observed where experimentation is encouraged and indeed feasible, where high levels of interdependence between different organizational elements exist, and where this interdependence is marked by complementarity, that is, if the interdependence is of such a form that engaging in one type of activity will increase returns from another one (Miller 1990, Milgrom and Roberts 1995). A classic example of organizational complementarity is found in manufacturing plants, where the flexibility of production equipment is related to the breadth of the product line. As Milgrom and Roberts (1995, p. 193) show, having more flexible production lines that can be easily switched over to a different product makes it less costly (and thus more valuable) to produce many small batches of customized products that can be matched to customer preferences. Conversely, a diverse product portfolio increases the value of a flexible production line that does not rely on economies of scale and can be quickly shifted over, leading to less downtime while the line is retooled. In practice, it will therefore be rare

to see either flexible production equipment or a diverse product portfolio without the other; both are complements in that each increases the value of the other; as organizational components, they are 'sticky.'

Complementary configurations frequently are made up of multiple components commonly found together. For instance, the modern manufacturing process tends to be marked by a number of components such as flexible machines, short production runs, highly skilled workers, horizontal communications, and targeted markets, which tend to make it quite different from the traditional, mass-production system that relied on specialized machinery, long production runs, low worker skills, hierarchical controls, and mass markets (Milgrom and Roberts 1995). Although the examples I have given here come from the field of industrial manufacturing, complementarities can, of course, relate to any number of organizational characteristics, including the classic ones of organizational structure and environment where small, agile organizations are usually considered to perform better in turbulent environments while large, lumbering organizations tend to do better in stable environments.

Alternatively, instead of learning and fit, the logic may be based on an external, environmental selection mechanism such as organizational birth and death due to market competition. Here, some kind of mechanisms is needed to generate variation in organizational configurations, and efficiency pressures then operate to narrow down this variety into a smaller number of viable forms.

Many of the arguments regarding organizational configurations thus take on a functional logic in tying empirically observed configurations to some form of fit based on pressures towards efficiency and consistency. However, arguments relating to the emergence of configurations need not be restricted to efficiency-based responses to either internal consistency demands or external pressures on organizations. Organizational configurations may also be formed around sociocultural or political factors. For example, Peteraf and Shanley (1997) argue that strategic groups

may form around a shared identity rather than efficient forms of organizing. Alternatively, organizational configurations may reflect social logics of appropriateness that suggest certain forms of organizing as associated with specific economic activities, logics that might furthermore exhibit considerable differences, for instance across cultural contexts (e.g. Scott 1995).

It is important to note, however, that the assumption of an internal logic to configurations may frequently be too strong. For example, particular configurations of circumstances may be the result of historical constellations following now discernable internal logic yet resulting in particular and identifiable effects. As such, functionally oriented arguments that configurations are based on a logic of consistency may not be warranted. As McPhee and Scott Poole (2001) note, the idea that a configuration reflects an underlying logic may to some extent present a problem for configurational theories, and by extension also for the case-study approach. Specifically, 'most configurational theories are what Althusser (1972) called 'expressive totalities' – they are supposed to be consistent because each part reflects the underlying logic of the whole' (McPhee and Scott Poole 2001, p. 515). However, a good theory should question the assumption of consistency, that is, the assumption that all parts of the configuration are equally necessary or important. For instance, one might alternatively conceive of configurations as consisting of a core and periphery, where core elements are essential whereas more peripheral elements are less important and perhaps expendable. Furthermore, most research on configurations emphasizes the internal consistency of the configuration's underlying logic. Yet there may frequently be inconsistencies within configurations, where 'a better configuration might balance off conflicting logics, or list the necessary conditions for success and make sure that the configuration meets them' (McPhee and Scott Poole 2001, p. 515).

What emerges, then, is a picture of configurations as embedded in space and time

and involving varying levels of complexity, dynamism, and analysis. Simple configurations may involve only few and linear interdependencies. In contrast, complex configurations may involve multiple interdependencies that are furthermore characterized by interactions such as complementarity or substitution effects leading to synergies and trade-offs between the different elements. Furthermore, configurations need not be static, but may be dynamically changing, suggesting that organizations follow dynamic constellations that change over their life cycles (e.g. Moores and Yuen 2001). Finally, configurations may be cutting across several levels of analysis. For example, organizational configurations may involve elements at the organizational, intra-organizational, and supra-organizational level.

While the number of conceivable organizational configurations is thus staggering, taxonomic studies of organizations have shown a relatively small number of configurations account for a relatively large share of all organizations in the samples studied (Miller 1990). This phenomenon, which is known as *limited diversity* (e.g. Ragin 1987), presents an important issue for the study of organizational configuration. Table 24.1 demonstrates such

a situation of limited diversity by means of a truth table – an analytical tool for listing all possible combinations of causal conditions. The truth table here lists four organizational characteristics (A, B, C, D) and one outcome (Z). As a truth table uses binary values, there are sixteen possible combinations here. However, not all conceivable configurations of organizational characteristics also show empirical instances. In Table 24.1, combinations 7, 12, 14, and 15 show a question mark in the outcome column, indicating there may be no empirical instance of this combination, indicating a situation of limited diversity.

Limited diversity stems from a number of reasons. First, as Stouffer (1941) points out for configurational approaches more generally, even relatively few elements can lead to an astronomically large number of different possible complex dynamic configurations, so there will frequently be very few or no empirical instances of any particular configuration. The number of rows in a truth table is calculated as 2^k , with k indicating the number of causal conditions. For Table 24.1, the number of possible combinations is thus 2^4 , or 16, but if one was to double the number of causal conditions to 8, the number of possible configurations would jump to 256.

Beyond the issues of manifested versus hypothetical configurations, Miller (1986) points to three reasons why there should be relatively few kinds of organizational configurations. First, competitive pressures from the environment are likely to weed out unsustainable models, an argument that connects to the external selection perspective. Second, organizations should be drawn to certain configurations that are internally harmonious and mutually reinforcing, an argument that connects to an internal selection mechanism, usually based on experience of what works in any given context. And finally, Miller (1990) points out that organizational change tends to be non-continuous and episodic, suggesting that hybrid forms are less likely to be explored and that preference will usually be given to ideal types presenting mutually exclusive positions.

Table 24.1 Truth table exhibiting limited diversity

Configuration	Organizational Characteristics				Outcome
	A	B	C	D	Z
1	Yes	Yes	Yes	Yes	Yes
2	Yes	Yes	Yes	No	No
3	Yes	Yes	No	Yes	Yes
4	Yes	Yes	No	No	Yes
5	Yes	No	Yes	Yes	No
6	Yes	No	Yes	No	No
7	Yes	No	No	Yes	?
8	Yes	No	No	No	No
9	No	Yes	Yes	Yes	Yes
10	No	Yes	Yes	No	Yes
11	No	Yes	No	Yes	No
12	No	Yes	No	No	?
13	No	No	Yes	Yes	No
14	No	No	Yes	No	?
15	No	No	No	Yes	?
16	No	No	No	No	Yes

ORGANIZATIONS AND CONFIGURATIONS ACROSS LEVELS OF ANALYSIS

While configurations lie at the heart of the case-study approach, not all studies that examine organizational configurations can properly be classified as case studies. Case studies and studies of organizational configurations thus form partially overlapping sets. In the following, I examine studies from the union of those sets rather than the intersection, to provide an overview of the various forms of addressing organizational configurations either explicitly or implicitly. Configurations can occur at the intra-organizational, organizational, and the supra- and inter-organizational levels, as well as across such levels. Because of the extensive literature, it is necessary to note that the studies I use here are for the purpose of illustration rather than for providing an exhaustive overview of work on configurational thinking in organization and management studies.

Intra-organization level

The study of intra-organizational phenomena has been at the focus of a number of the classic case studies. Gouldner's (1954) *Patterns of Industrial Bureaucracy* focuses almost exclusively on intra-organizational phenomena as he described three configurations of 'mock,' 'representative,' and 'punishment-centered' bureaucracy that emerge from rule creation and enforcement. Similarly, Kanter's (1977) *Men and Women of the Corporation* examines how the power structure of a large corporation shapes both the behavior and personalities of its employees, while Dalton's earlier (1959) *Men Who Manage* likewise focused on issues of formal and informal power relations within corporations. More recently, Kunda's *Engineering Culture* (1992) focused on the organizational culture in the engineering department of a large American high-tech corporation. Other research has taken an even more micro-level approach, focusing on configurations at the group level such as the demographic composition of

teams (e.g. Tsui and O'Reilly 1989) and even individual-level configurations such as the fit between the individual and the organization (e.g. Chatman 1989).

Organization level

A considerable number of case studies, as well as studies of organizational configurations more generally, have focused on the organization level, and particularly the relationships between strategy, structure, and processes. Much of the literature on strategic groups operates at this level (e.g. Dess and Davis 1984, Cool and Schendel 1987, Ketchen et al. 1997, McNamara et al., 2003). While many of the studies at this level have employed quantitative methods, there are also a number of case studies using mainly qualitative methods, such as work on organizational activity systems (e.g. Siggelkow 2001, 2002) or Chandler's (1962) *Strategy and Structure*, which examined strategic and organizational change in the United States. Likewise, Philip Selznick's (1949) *T.V.A. and the Grass Roots* is also largely located at this level of analysis, although not exclusively.

Supra-organization level

A smaller number of studies have examined configurations at the inter-organizational level. Examples here include Bensaou and Venkatraman's (1995) study of interorganizational relationships in the automobile industry, or Malhotra et al.'s (2005) research on supply-chain partnership configurations. Child (2002) likewise uses a configurational approach to examine twenty cases of international joint venture formation, whereas Dubbs et al. (2004) examine configurations at the organizational network and system level in the health care industry. At an even more macro-level, research on Business Systems and the Varieties of Capitalism approach have suggested that economic systems are likewise best understood from a configurational perspective (e.g. Whitley 1999, Hall and Soskice 2001) and analyzed using configurational methods (e.g. Kogut and Ragin 2006).

Cross-level configurations

While the studies I have discussed so far mainly inhabit a single level of analysis, this classification is not a very rigid one, and effects located at different levels frequently impinge upon the configurations at the main level of analysis. However, a number of studies have moved towards a truly multi-level examination of configurations. For examples, Crozier's (1964) classic work on *The Bureaucratic Phenomenon* explicitly connects the bureaucratic control system to the cultural environment in which French administrative organizations are embedded. Similarly, the Miles and Snow (1978) typology of firms as Defenders, Prospectors, Analyzers, and Reactors explicitly theorizes configurations of structure, strategy, and environment, thus spanning the organization and supra-organizational levels. Extending the Miles and Snow framework in a different direction, Moores and Yuen (2001) examine configurations of strategy, structure, leadership style, and decision making style, thus combining characteristics at the organization and individual levels. Furthermore, Greckhamer et al. (2008) use QCA to examine how industry, corporate, and business-unit effects combine, leading to truly multi-level analyses.

METHODOLOGICAL CHALLENGES OF ORGANIZATIONAL CASE STUDIES

Because the case-study approach is marked by a configurational understanding of organizational phenomena within a specific spatial and temporal context, it faces a particular challenge, namely analyzing and understanding complex interdependencies between various factors and causal conditions that in combination characterize the case in question. To address this challenge, a variety of different methodological approaches have been employed, each of which offers certain advantages while also carrying certain liabilities.

The most prevalent method for analyzing cases still relies on qualitative research methods such as interviews with members of an

organization, observation of life in organizations such as ethnography and participant observation, the use of focus groups, or the examination of various archival records regarding an organization and life around it. Such qualitative methods for the analysis of organizations are grounded in the hermeneutic tradition of the humanities (e.g. Gephart 2004) and usually involve the researcher's inductive and interpretive treatment of the evidence (Van Maanen 1998). The flexibility of these methods makes them very attractive for the case-study approach, as they can be applied where quantification is problematic or has to be deferred until a later point in the analysis. However, this very flexibility also presents a challenge in the generally more positivistically oriented field of organization and management studies. Although there are a number of guides as to how qualitative research might proceed in a systematic manner (e.g. Miles and Huberman 1984, Yin 1984, Van Maanen 1988, King et al. 1994, Emerson et al. 1995), as well as advice on how to get this research published in top flight research journals (e.g. Gephardt 2004, Suddaby 2006), the typical case study still relies to a considerable extent on the persuasiveness of its narrative. While good qualitative research is systematic and disciplined, there are few agreed-on rules for drawing conclusions and verifying their robustness (Miles and Huberman 1984). Due to this lack of standardization the analysis still largely resembles an art rather than a science, and as a result 'one cannot ordinarily follow how a researcher got from 3600 pages of field notes to the final conclusions, sprinkled with vivid quotes though they may be' (Miles and Huberman 1984, p. 16).

However, even the most hermeneutic of approaches has to start with observing differences and similarities and likely with either counting their commonness or assigning some weight to their importance. At the most general level, the actual analysis of the collected evidence will thus usually involve a search for similarities and dissimilarities within the data that eventually leads to empirical generalizations, frequently along the lines of

inquiry presented by John Stuart Mill in his *A System of Logic* (1843), and particularly as incorporated in the methods of agreement and difference (e.g. Stouffer 1941, Ragin 1987). Consider, for example, Eisenhardt's (1989) influential work on how organizational researchers can employ case studies to build better theories. Eisenhardt describes two forms of analysis: that of within-case data and the search for cross-case patterns. Among these, the analysis of within-case data presents the first step and is clearly the less formalized approach. Eisenhardt suggests that it is imperative for the researcher to become intimately familiar with the case as a stand-alone entity, for example by writing case histories, examining transcripts, or by collecting and tabulating quantitative data on a variety of relevant aspects. Whatever approach the researcher chooses, the goal of this process is to 'allow the unique pattern of each case to emerge before investigators push to generalize patterns across cases' (Eisenhardt 1989, p. 540). Connected to within-case analysis is the search for patterns across cases to identify similarities and differences. This analysis can take various forms, such as looking for within-group similarity and inter-group differences, examining pairs of phenomena, or comparing the evidence by data sources. Regardless of which particular form is chosen at this time, however, the general approach remains the search for agreement and difference within pattern of the evidence.

While the advantage of a purely qualitative, hermeneutic analysis of the evidence lies in its ability to provide insights that are difficult to achieve using quantitative, statistically oriented methods, the disadvantage of this approach is equally evident and in large part stems from the researcher's cognitive limitations. Purely qualitative analysis quickly exhausts the levels of complexity in patterns it can process (e.g. Stouffer 1941), particularly if the concepts of interest are graded rather than binary in nature. Even if our cognitive capabilities would allow us to consider the exponentially growing number of configurations that emerge quickly even from only a few binary concepts, we would still be

subject to all sorts of cognitive biases, such as the tendency to search for information in a way that confirms our preconceptions (e.g. Wason 1960) or our propensity to neglect the base rate of events (e.g. Kahneman and Tversky 1973). The recognition of how quickly the organizational researcher is overwhelmed by the amounts of data and how difficult it is to identify patterns and draw inferences has led to an increased usage of qualitative data analysis software packages that aim to assist the researcher in sorting, coding, and analyzing the data their data. While these software packages facilitate the process of drawing inferences and tend to make it more systematic, they present but a partial solution to the underlying problem of dealing with the complexity that configurations of factors present.

At the other end of the methodological spectrum lie quantitative methods for identifying and examining configurations. Among these, cluster analysis is probably the most popular one for distinguishing configurations, and has enjoyed a certain revival in the recent literature on organizational configurations, particularly in the field of business studies (e.g. Corso et al. 2003, Uhl-Bien and Maslyn 2003, Desarbo et al. 2005, Malhotra et al. 2005, Lim et al. 2006, Marlin et al. 2007). Cluster analysis is attractive for the study of configurations because it offers various algorithms for grouping cases that share similar features into respective clusters. As an exploratory tool for the analysis of quantitative data, cluster analysis can be used to discover structures in the data without specifying *a priori* what those structures might be. As a result, a number of researchers have used cluster analysis to examine organizational configurations across a variety of levels of analysis (e.g. Hambrick 1983, Cool and Schendel 1987, Ketchen et al. 1993, Bensaou and Venkatraman 1995, Dubbs et al. 2004, Moores and Yuen 2001; for reviews, see Ketchen and Shook 1996, Ketchen et al. 1997).

However, although cluster analysis allows the discovery of configurations of characteristics that commonly occur together, it

also has significant weaknesses. Perhaps most importantly, the exploratory nature of cluster analysis makes it unsuitable for testing theory. While it would of course be possible to hypothesize the existence of different types of clusters before actually conducting the analysis, it is not possible to test these hypotheses because there is currently no test statistic for cluster membership. Although one might compare the results of different clustering algorithms or assess performance differences between different clusters, the basic issue remains that cluster analysis will *always* result in some clustering and there is not test statistic to guide the analysis. The fact that even with for the most part randomly distributed data some kind of cluster solution is likely to emerge has led a number of researchers to question the existence of true underlying configurations, suggesting that e.g. strategic groups may be merely statistical artifacts (e.g. Hatten and Hatten 1987, Thomas and Venkatraman 1988, Barney and Hoskisson 1990).

Another problematic aspect of cluster analysis is that its assignment of cases to clusters is based on all the characteristics included regardless of the relationship between these characteristics and outcomes of interest, such as performance, reputation, deviance, or some other construct. Consider for example a situation where not all characteristics included in the analysis are in fact causally important regarding the outcome (a situation that is likely to be the rule rather than the exception). Here, cluster analysis is insensitive to the fact that some cases may be *identical* regarding a few causally important characteristics, but may be *different* along a large number of characteristics that are irrelevant. From a causal point of view, such cases belong into the same category since they share the same causally important characteristics. However, cluster analysis would usually place them in different clusters because they differ on many (irrelevant) characteristics. While cluster analysis thus allows the researcher quickly to determine configurations in a dataset, the nature of these configurations and the relationships between

the various characteristics included remains largely unexamined. Although it is possible to use regression analysis with dummy variables for different configurations to examine the relationship between these configurations and an outcome of interest, the issue remains that these configurations need to be identified first, and the usual methods such as cluster analysis show significant weaknesses here. Furthermore, clustering combined with correlational analysis would still not allow a researcher to examine the effect of different levels of the variables that are joined in the dummy for cluster membership. Such an approach would also not be able to address issues of equifinality, that is, situations where 'a system can reach the same final state, from different initial conditions and by a variety of different paths' (Katz and Kahn 1978, p. 30). Equifinality and thus equal effectiveness of different configurations presents an important theoretical issue for configurational thinking on organizations, and methods that cannot address this issue thus do not adequately match up with the theory (Fiss 2007).

Similar critiques also apply to approaches using deviation scores to determine the fit between a hypothesized ideal and empirically observed configuration. While such approaches tend to be deductive in nature and thus are theoretically more attractive than the largely inductive cluster analysis, deviation score approaches hold related problems such as limited insight into the relationship between the different characteristics of the configuration and a considerable sample dependence in how profiles are derived (e.g. Drazin and Van de Ven 1985), thus making them quite sensitive to errors in estimating the 'ideal' configuration and reliability issues (Gupta and Govindarajan 1993).

The recognition that organizational configurations can be nested across multiple levels of analysis has led some researchers towards statistical modeling techniques that allow assessing such multi-level effects. In particular the study of educational organizations has employed hierarchical linear modeling (HLM) to take into account that the achievement of individual students also

depends on effects at the school and state level, thus leading to three-level hierarchies (e.g. Raudenbusch et al. 1999). Similarly, HLM can be used to examine multilevel effects of organizational work groups, departments, organizations, and environments (e.g. Hoffman 1997, Hoffman and Gavin 1998). However, while HLM presents a better methodological fit for multilevel theories of organizations and allow the testing of more complex effects, such modeling still has significant shortcomings regarding a truly configurational understanding of cases and organizations.

Specifically, as linear models, HLM equations are based on a number of assumptions that stand in contrast to configurational thinking. For instance, while configurational approaches point to nonlinear, synergistic effects that can lead to equifinal configurations, the econometric model that underlies HLM and regression methods more broadly assumes linear, additive effects that are unifinal. While ordinary regression analysis estimates one average net effect across a whole population, HLM presents an improvement as it allows the net effect to be separated into level-specific effects. However, HLM still treats different variables as competing in explaining the variation of the outcome of interest, with a focus on the unique contribution of each variable while holding all other effects constant. In contrast, configurational thinking emphasizes that one has to consider how causes combine rather than compete to create outcomes, and that the goal should be estimating this very relationship between different parts rather than aiming to statistically control for such effects.

Interaction effects present one way to take these relationships into account and include them into the statistical model, but for all practical purposes such effects have been largely restricted to two-way interactions, as three way interactions are exceedingly hard to interpret and rarely appear in published research. Such a limitation to interaction effects between only two causal factors places an undue burden on the modeling of configurational effects that can easily include four

or more relevant factors. And finally, because they estimate a single equation, regression-based models are problematic when the goal is to examine equifinal outcomes, that is, situations where there are several path to an outcome of interest, thus blocking the empirical investigation of equifinal configurations (e.g. Gresov and Drazin 1997, Fiss 2007). One might consider using ANOVA or regression with dummy variables to examine the relationship between e.g. membership in a configuration and performance, but this of course does not address the main issue of how configurations and the relationships between their different characteristics were identified in the first place. A possible approach to estimating these relationships would be the use of log-linear models (e.g. Knoke and Burke 1980), but these make no distinction between dependent and independent variables and thus cannot determine the direction of causality within an relationship. In addition, log-linear models are useful for categorical but not continuous variables, making them again rather unwieldy tools.

Some researchers have aimed to combine qualitative and quantitative analysis as a promising way to better capture the complex nature of configurations that marks case studies. For example, Siggelkow's (2002) study of the configurations of a large US corporation combined in-depth qualitative interviews and the analysis of archival records with network analysis methods. After estimating qualitatively the existence and strength of relationships between the different activities that the corporation engaged in, Siggelkow then used network measures to determine the centrality or 'coreness' of various organizational elements as well as identify the various patterns in the evolution of the organization. Similarly, Black and Boal (1994) suggest the use of network analysis to capture the complex interdependencies between firm resources. Treating the configuration as a network of interdependent characteristics thus offers intriguing possibilities for future case-study research.

Both purely qualitative and quantitative approaches thus have considerable difficulties

regarding the configurational nature of the case study. Whereas qualitative approaches are flexible, they quickly exhaust the levels of complexity they can handle in a rigorous way. Quantitative approaches allow for the analysis of a large number of data points, but they either allow little insight into how configurations emerge or are rooted in the linear model that is frequently not useful in examining configurational arguments. As I have argued elsewhere (Fiss 2007), this disconnect between configurational arguments and empirical methods in organization and management theory has emerged as significant hindrance to the further development of a configurational understanding of organizations. In a similar manner, the case-study approach, with its configurational nature, would likewise benefit from employing more frequently a methodology better in line with its assumptions of complex causal interdependencies. Specifically, set-theoretic methods such as QCA (e.g. Ragin 1987, 2000) provide an attractive alternative here. Rooted in the comparative methods between qualitative and variable-based approaches, QCA is deeply configurational in its understanding of how causes combine to create outcomes, making it a particularly useful tool for the case-study approach. QCA is able to handle considerable amounts of causal complexity while retaining the holistic quality of the phenomenon under study – two issues that are essential for the case-study approach.

AN AGENDA FOR FUTURE RESEARCH ON CONFIGURATIONAL PHENOMENA

The case study still presents one of the most attractive research strategies for understanding life in and around organizations. The configurational nature of the case study in particular aligns well with the configurational thinking that underlies much of management and organization theory and is typical of the social world more broadly. As I have argued, however, many of the current data analysis approaches used with a case study do not fully speak to this configurational nature of

the case-study approach, and the potential for significant methodological improvements along these traditional lines of inquiry seems limited at this time. However, due its configurational nature, set-theoretic methods in general and QCA in particular offer a way to conduct case-study research that is both methodologically rigorous and able to offer new and different insights than traditional methods. These methods can be used in a variety of ways. For example, they can be used to analyze quantitative data on organizational structure, strategy, and the environment. However, set-theoretic methods can also be used to examine qualitative evidence contained in the narratives that commonly accompany case studies, allowing for a more rigorous examination than is usually feasible with purely qualitative approaches. Additionally, QCA can be used as a meta-analysis tool to examine case studies. An intriguing example of this approach is offered by Hodson and Roscigno (2004), who combine a content analysis of 204 organizational ethnographies with QCA analysis to determine the causal configurations that lead to organizational success such as employee involvement and competent management. Furthermore, while QCA can now be successfully applied to large-N analyses (e.g. Ragin and Fiss 2007), it was originally designed to handle small-N situations, making it particularly attractive to a case-study approach that requires considerable in-depth knowledge about cases and thus places certain constraints on the number of cases that can be explored in sufficient detail.

Beyond the use of tools that speak to the configurational nature of the case study, an important way forward lies with the study of configurations across levels of analysis. While a number of studies have already explored configurations reaching across the individual, organizational, and supra-organizational levels, such research is still the exception rather than the norm. Given the interconnectedness of many organizational phenomena, much more research is needed along these lines. Furthermore, such analyses need not be restricted to the traditional constructs of e.g. strategy,

structure, and environment. For example, Fombrun (1989) suggests three levels of constraint that are likely to affect organizational configurations: the infrastructure of interdependencies, the sociostructure of exchange relations, and the superstructure of symbolic representations. However, while most studies have so far focused on the infrastructure of largely economic and technological interdependencies, much remains to be explored regarding the sociopolitical and symbolic-cultural side of configurations. The processes creating organizational configurations operate at many levels, including competitive and evolutionary processes, but also sociopolitical and cultural-symbolic ones, as suggested by the institutional theory (e.g. Lounsbury and Ventresca 2002). Industry-level 'recipes' about how to compete and what is successful in organizing may be powerful scripts leading to specific organizational forms that either are configurations or lead to the formation of specific configurations because of ensuing economic and technical interdependencies. Accordingly, a true understanding of organizational configurations must go beyond merely technical interdependencies to include the interaction between these and sociopolitical and cultural-symbolic factors.

The goal of extending case-study approaches to examine phenomena across more levels of analysis and phenomena furthermore points to the fact that many organizational phenomena are essentially constituted by configurations of configurations. This phenomenon – where the whole takes the same shape or form as its parts – is known as self-similarity in complexity theory. While some researchers have argued that organization theory has much to gain from connecting more closely to the insights of complexity theory (e.g. Brown and Eisenhardt 1997, Levinthal 1997, Rivkin and Siggelkow 2003), so far these connections have not been explored in detail. Furthermore, most of the research in this vein has employed computational modeling as a research strategy, suggesting that much could be gained by connecting to more empirically oriented research such as the case-study approach.

Finally, the majority of prior research on organizational configurations has focused on static rather than dynamic configurations. Again, a case-study approach can contribute here by allowing for a more dynamic understanding of organizational configurations. Tracking configurations over time is methodological challenging, but certainly not infeasible and would significantly enhance our way of thinking about configurational phenomena in and around organizations.

NOTES

1. For an example of this process, see Ragin's (1992) analysis of Wieviorka's (1992) 'casing' as evidenced in treatment of terrorist groups as social movements.

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