



Strategic organization: a field in search of micro-foundations

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Organizations are made up of individuals, and there is no organization without individuals. There is nothing quite as elementary; yet this elementary truth seems to have been lost in the increasing focus on structure, routines, capabilities, culture, institutions and various other collective conceptualizations in much of recent strategic organization research. It is not overstating the matter too much to say that ‘organization’ has generally entered the field of strategy in the form of various aggregate concepts.

This editorial essay is born out of a frustration on our part for the present lack of focus on individuals in much of strategic organization and the taken-for-granted status of ‘organization’. Specifically, the underlying argument of this essay is that individuals matter and that micro-foundations are needed for explanation in strategic organization. In fact, to fully explicate organizational anything – whether identity, learning, knowledge or capabilities – one must fundamentally begin with and understand the individuals that compose the whole, specifically their underlying nature, choices, abilities, propensities, heterogeneity, purposes, expectations and motivations. While using the term ‘organizational’ may serve as helpful shorthand for discussion purposes and for reduced-form empirical analysis, truly explaining (beyond correlations) the organization (e.g. existence, decline, capability or performance), or any collective for that matter, requires starting with the individual as the central actor.

Our particular focus in this essay is on the organizational capabilities-based literature in strategic management. This focus serves as a specific example of a more general problem of lack of attention to individuals in strategic organization. (Wider implications could be explicated given more space.) As brief support for the fact that our discussion does have wider ramifications, we note that Selznick has also quite poignantly raised the need for micro-foundations on the part of institutional scholars (1996: 274). Whetten (2004) also highlights the fact that scholars are rarely explicit about what they mean by ‘organizational’.

Our hope is that this essay will serve as a clarion call of sorts for strategic organization (and more broadly organizational) scholars to take individuals and micro-foundations more seriously (beyond calls for multi-level theory or 'meso' research). We advance arguments and call for an even stronger form of methodological individualism. Of necessity we paint with a fairly broad brush and admittedly, in part, our arguments are conjectural and purposefully provocative, all of which, thankfully, this forum allows.

We start with a brief introduction to the organizational capabilities-based literature as it relates to the question of the individual–organization relationship, focusing on deficiencies which result from taking 'organization' for granted. It would certainly be unfair for us to levy heavy criticism on the organizational capabilities literature without pointing out feasible and promising directions for future research; thus, we also offer a rough conceptual framework for thinking about the individual–organization relationship as it relates to the notion of organizational capabilities and underlying micro-foundations.

Capabilities collectivism

Strategy scholars are increasingly converging on organizational capabilities as a key construct (Eisenhardt and Martin, 2000; Winter, 2003). Building on resource-based logic and the notion of organizational routines, the organizational capabilities approach has become one of the predominant ways of thinking about heterogeneity and performance in strategic management. A central argument of capabilities-based work is that routines or capabilities are the fundamental units of analysis, and that the organization should be conceptualized as the central repository of routines and capabilities (Nelson and Winter, 1982). However, despite over two decades of largely theoretical (and some empirical) work, as well as recent efforts to clarify the meanings of organizational routines and capabilities (Winter, 2003), fundamental questions about their origins, micro-foundations, and the theoretical and empirical status still persist. We argue that many of the problems associated with capabilities-based work are a result of the focus on collective level constructs (e.g. routines, capabilities) at the expense of individual-level considerations.

Specifically, a review of the key organizational capabilities contributions suggests that the approach builds on methodological collectivism (see the definition of capabilities by Zollo and Winter, 2002: 340), and perhaps even a strong form thereof. While individuals and managers are mentioned in the theoretical development, nevertheless the assumption is that heterogeneity in collective context, environment and situation drives organizational, as well as individual, outcomes. This is exemplary of the explanatory stance of methodological collectivism.

Thus, the organizational capabilities approach asserts that performance differences between firms are driven by efficiency differences that may somehow be

ascribed to collective constructs, such as routines, capabilities, competencies and the like. Furthermore, such performance differences may be sustainable because of certain characteristics of the collective level constructs, for example, social complexity (Barney, 1991). Much of this goes back to Nelson and Winter (1982) (Foss, 2003). They explicitly take the routine as the unit of analysis, and an important aim of their evolutionary theorizing is to understand the changing relative weights of different routines in a population of firms. Although discussion of the level of the individual is not absent in Nelson and Winter (1982), who devote one chapter (chapter 3) to a discussion of knowledge at the individual level (i.e. skills), their arguments nevertheless quickly move to give primary emphasis to organizational routines as largely determining individual behavior (1982: 9, 14, 134–5). While the *metaphor* of individual skills and collective routines seems to have originally been developed by Nelson and Winter as a figurative one (1982: 124) (Foss, 2003), more recent work has moved in a quite literal direction explicitly independent of individuals.

In fact, it can be argued that the approach is founded on an implicit assumption of individual homogeneity (Dansereau et al., 1999; Henderson and Cockburn, 1994). Thus, the extension of explanatory collectivism is that individuals are essentially extraneous (highly malleable by heterogeneous context, situation and surroundings) to the overall theory, and thus in effect can be rounded out (Felin and Hesterly, forthcoming). While the assumption that agents are homogeneous does not imply with logical necessity that they are also malleable, the assumption of malleability is very often made in the organizational capabilities approach. Thus, J. C. Spender specifically notes that ‘we must argue that organizations learn and have knowledge only to the extent that their members are *malleable beings* whose sense of self is influenced by the organization’s evolving social identity’ and thus learning is ‘*primarily* internalized from the social context’ (1996: 53, emphasis added). This line of reasoning has placed all of the explanatory burden on the context and environment (over individual causation).

However, arguing that individuals a priori are homogeneous or largely malleable directly conflicts with established theoretical and empirical arguments from the cognitive sciences emphasizing the role of a priori knowledge, thus challenging the prevalent argument of ‘organizations as strong situations’ (Davis-Blake and Pfeffer, 1989). But arguing that individuals are heterogeneous does not imply that the collective level is non-existent or unimportant. Rather, it suggests the importance of explicitly linking the individual and the collective levels. However, to our knowledge, specific individual–organization links have yet to be made in at least the strategic management part of the organizational capabilities literature (see Dosi et al., 1999 for an evolutionary economics attempt to model the link). Individuals are rounded out in the analysis, as organizational routines and capabilities are treated as real social facts, which provide the primary causal driver of individual and collective level outcomes. The assumption of the independence as well as the primacy of collectives and

routines (rather than individuals) is now a prevalent assumption in the organizational capabilities literature (Dosi, 1995; Nahapiet and Ghoshal, 1998: 247). In other words, and in terms of the philosophy of the social sciences, the field has taken a stand in favor of methodological collectivism and against methodological individualism (Coleman, 1990; Elster, 1989; Hayek, 1952); individual-level explanation is rejected in favor of collective explanation.

Deficiencies of capabilities collectivism

Taking the organization for granted sidesteps numerous critical individual-level questions with regard to strategic organization, questions that arguably should provide the real meat of analysis in this field. Thus, the present collective emphasis in capabilities-based work is problematic on several fronts, which we briefly explicate.

Routines and capabilities ill-defined

No clear definitions of routines and capabilities have been advanced to date (Cohen et al., 1996). Many attempts have been made, to be sure. However, to our knowledge none of these systematically ground the definition in purposeful individual action. Definitions of collective concepts are very often performed in terms of lower-level, constituent elements. For example, an industry is defined in terms of products (and therefore ultimately consumer preferences) and competing firms. No definition of routines in terms of constituent elements appears to exist. (This makes it problematic to define capabilities in terms of routines, as is often done.) In fact, it is noteworthy that when writers attempt to proffer definitions they usually pick concepts on the same analytical level as routines and capabilities, such as strategies, organizational processes and arrangements, organizational memory and the like (Levitt and March, 1988). This is clearly messy, because it conflates the objects that can be routinized (e.g. organizational process) and the definition of what a routine is. However, if there are no individualistic foundations for the analysis of organizational routines and capabilities, we submit that the mess is simply unavoidable. The problem is that because routines and capabilities do not have an anchor in individual antecedents, they can be virtually anything at the organizational level.

The origins of routines and capabilities

A closely related, fundamental problem with existing capabilities-based work in strategic organization is the lack of clear (causal) understanding of the origin of organizational routines and capabilities. In fairness, it should be noted that capabilities-based scholars themselves are painfully aware of this. Winter has recently noted that 'the question of where routines and capabilities come from

... deserves vastly more attention' (Winter in Murmann et al., 2003: 29). Zollo and Winter (2002: 341) further add: 'To our knowledge at least, the literature does not contain any attempt at a straightforward answer to the question of how routines – much less dynamic capabilities – are generated and evolve.' If organizational routines and capabilities indeed are the fundamentally heterogeneous component driving (variations in) firm performance (Eisenhardt and Martin, 2000) – and note that we are not necessarily denying this – the question of their origin is absolutely fundamental.

At present the origin of routines and capabilities is as vague as their existence. Routines originate from previous routines (or meta-routines select among lower-level routines). Thus, origins are largely considered to be collective, and overall, it is argued simply that 'firms tend to do what they have done before' (Kogut and Zander, 1995: 425). What specifically is the source of the observed collective heterogeneity in capabilities? Is it simply the evolutionary history and experience of the firm as it interacts with the environment ('accumulated experience', according to Zollo and Winter, 2002, or 'past routines', according to Nelson and Winter, 1982), or is it possible to argue for more fundamental, individual-level antecedents? As a normative enterprise, strategic management is (and should be), after all, concerned with purposeful heterogeneity, that is, understanding intentional sources of performance differences. Thus, the collectivist orientation underlying the capabilities approach provides a radical departure from the *raison d'être* of strategic management, which ought to provide actionable and useful theoretical insights for the practicing manager (Rumelt et al., 1991). While scholars take glee in the irrationality of managerial action (Murmann et al., 2003: 29), we think surface analysis and correlations do not amount to proof. Rather, the origins of collective concepts are likely to be at the individual level and ultimately to be rooted in purposeful and intentional action.

Problems of empirical application

The lack of clean definitions and of understanding the origins of routines and capabilities is almost bound to produce problems of empirical application. Indeed, difficulties of testability and operationalization have plagued the capabilities stream of research since its very origins (Williamson, 1999). Put more bluntly, an agreed upon, or even a simple, rudimentary operationalization has remained elusive despite several decades of work (see Winter's related comments in Murmann et al., 2003: 29; see also Cohen et al., 1996). Empirically, capabilities-based work has recently seen individual-level measurement, though the confounds (including problems of causality and endogeneity) are readily apparent in the clear conflict between collective theorizing and individual-level measurement (Lacetera et al., 2004). Overall, empirical measures for routines and capabilities should be forthcoming as theoretical statements must be subject to

empirical verification and falsification (Bacharach, 1989) or else simply give way to more measurable and scientific alternatives.

Routines and capabilities possibly irrelevant for practice

Many fundamental questions of strategic organization are dealt with at the individual level. This is perhaps most conspicuously the case for strategy implementation. Here issues relating to the allocation of decision-making power and the motivation of employees to engage in acts that will support the strategic plan are pressing. However, the fundamental issues of strategic management – the creation and appropriation of value – also ultimately are reduced to issues at the individual level (Lippman and Rumelt, 2003). Thus, as Coff (1999) argues, firms do not appropriate (or perhaps even create value), only individuals do. And individual appropriation influences individual incentives to contribute to creating value. Understanding this involves subtle issues pertaining to the allocation of rights to receive income from and to make decisions over assets (Foss and Foss, 2005). Such micro-specificity is, however, currently outside the purview of current capabilities-based work.

Problems with multi-level theory

There have been numerous calls for multi-level theory in organizational and strategic analysis, which indeed seems like a feasible solution to the argument of individual versus organization we have outlined. Research in strategic organization in fact seems to generally be agnostic to a potentially fundamental level, implying (and often advocating) that all levels are equal, or perhaps more specifically, that analysis depends on sub-disciplinary convention, preference and the question at hand (Dansereau et al., 1999: 349).

There are, however, numerous problems with the call for multi-level theory, which should be explicated. The problems coincide with the above discussion of the weaknesses associated with collectivist capabilities-based work.

First, multi-level theories have often amounted to simply borrowing psychological theories and applying them to higher levels of analysis (Halebian and Finkelstein, 1999). For example, various behavioral theories (learning by association, stimulus-response) are simply applied from the individual to the collective or organizational level on a one-to-one basis, without consideration for the problem of importing these theories across levels. Nelson and Winter's (1982) metaphorical argument from individual skill to organizational routine does something similar.

Second, and more importantly, there is a tendency to view analysis at all levels as somehow complementary and equally valid, providing various windows into complex phenomena. However, this pluralistic – or, more bluntly, relativistic – approach (which increasingly is the mode in social science, see Boudon,

2004) has in our view been detrimental to the field, because it has led to needless proliferation and often contradictory explanations. Specifically, while one can argue that strategic organization is rich because of its multiple perspectives on phenomena, discerning colleagues from disciplines such as psychology or economics can readily point out the internal inconsistencies and the lack of a coherent and cumulative research program that is caused by the proliferation of perspectives. Thus, as noted by Felin and Hesterly (forthcoming), there are numerous competing papers in strategic management, pointing out the network, industry, firm and individual as the key level of analysis (or locus of knowledge), without apparent resolution and with each having its captive audience (a tension that many have happily accepted in the name of multi-level theory, or richness). This academic insularity is not healthy and does not improve the field's chances for recognition and legitimacy from peers in related disciplines.

Third, the emphasis on ever higher, contradictory collective levels and *loci* has led to a problem of upward infinite regress. Ever higher levels are theorized as the key source of capabilities (Dyer and Singh, 1998; Kogut, 2000); organization–network/alliance–constellation–industry cluster. However, the logic of increasingly higher levels applied *ad infinitum* leads to the field not being able to say anything theoretically useful, particularly from a strategic perspective (Collis, 1994: 147); capabilities and knowledge exist everywhere – and consequently nowhere. That is, each argument for a fundamental level can be ‘trumped’ by referring to the importance of a higher level of analysis (Collis, 1994). There are several issues with this upward infinite regress that deserve further brief discussion. First, given that ‘organization by firm is variety reducing’ (Kogut, 2000: 408), it is logically also so at higher levels of organization. As firms become path-dependent as a requirement of specialization, they increasingly become more myopic, which may lead to competency traps and rigidities. Thus, it is argued that path-dependence can be mitigated by (costlessly) focusing on higher collectives, such as alliances and networks (Kogut, 2000). Logically, however, this higher-level organization will also (while perhaps initially beneficial) result in eventual homogeneity. Second, analysis at collective levels leaves findings too open for alternative explanations. Lower, nested levels (Coleman, 1990: 3) may account for outcomes that are attributed to higher-level collectives. Though collective arrangements may provide a component in firm performance (Dyer and Singh, 1998; Kogut, 2000), overall there must be some a priori, hierarchically nested rationale to exchange, and thus collective-level studies may prove rather descriptive and an artifact of unobserved individual qualities. Furthermore, the further the analysis gets from individuals, the less likely it is to discuss or even control for potential individual effects.

A final critical problem that even articles specifically about levels of analysis have not resolved (Dansereau et al., 1999) is the question of transformation, that is, when exactly can we rigorously move from the individual to the collective level? Concepts such as synergy, emergence or embeddedness are frequently

used, but fundamentally these conceptualizations have remained fuzzy and have yet to resolve the micro–macro problem. Synergies, relations and so forth must inherently be a function of the individuals that make up the relationship, organization or network. Thus to explain any of these collective structures one must understand the underlying abilities, actions, choices and motivations of the individuals involved.

Overall we have discussed the current collectivist focus of extant capabilities-based work, and have argued for the need for individual-level considerations and micro-foundations. Below we develop some conceptual directions for future research, specifically elucidating what we mean by micro-foundations. It should be noted that while we do not advocate a completely atomistic, individualistic approach, we do believe that a form of methodological individualism provides an adequate amount of consideration for individuals, though we do not want to completely discount the potential causal influence of routines and other collective structures.

Toward individual-level origins for organizational capabilities

A fundamental level?

We argue that taking the individual as the fundamental level is a potentially fruitful and certainly under-researched approach for strategic organization research. Inherently, without individuals there is no collective. As we have argued, scholars often assume random distribution of characteristics when they make arguments at the collective level. For us, this is untenable. Think of the department that you work in and the departments of your colleagues. Are academics randomly distributed into organizational settings with broader collective factors (culture, environment) largely driving outcomes (e.g. publication), or do individuals self-select into and create environments? Given a priori heterogeneity at the individual level, self-selection seems like a more feasible explanation. That is, a talented young academic has multiple offers at various schools and self-selects into the environment where he or she is given the most resources to be productive. (A hypothetical, admittedly extreme, test of the primacy given to the collective environment would be to take a lackluster individual and to put him or her into a productive environment.)

In the interest of moving toward discussing the implications of a fundamental level for the origins of organizational routines and capabilities, we develop a rough conceptual model. First, Figure 1 captures the essential arguments of the capabilities-based work (see arrow specifying focus of extant work), and provides the framework for our arguments for the importance of understanding origins and micro-foundations. Figure 1 builds on the insightful conceptual model of the sociologist James Coleman (1990), who persuasively argues for the critical importance of methodological individualism in social theory

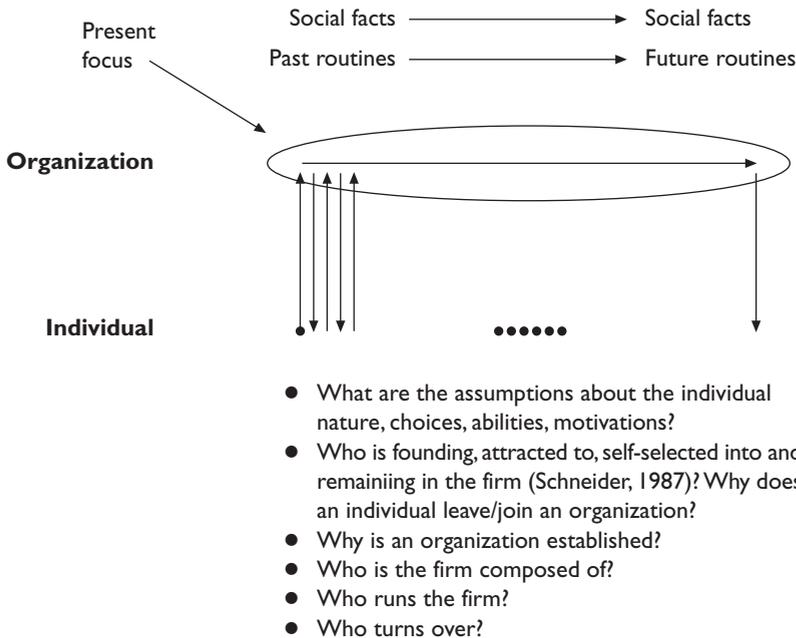


Figure 1 Individual–organization relationship

(Coleman, 1990: 2–5). The figure suggests that extant routines and capabilities-based work operate largely at the macro-level. That is, the sources and origins of collective routines and capabilities are explicitly argued to be in previous or past collective routines and capabilities (Kogut and Zander, 1992; Nelson and Winter, 1982: 134–5). Similar to Durkheimian social facts, which originate from previous social facts (Durkheim, 1962: 103–10), routines and capabilities remain at a collective level.

A natural place to study the origins of heterogeneity may be in the past decisions of individuals, notably in the initial conditions, decisions or even the characteristics of the founders and individuals, who make fateful, path-dependent decisions, which affect the company well after these founders have moved. Arrow aptly captures this in his discussion of organizational capabilities, or the ‘organizational code’, which he suggests is largely ‘determined [by the founders] in accordance with the best expectations at the time of the firm’s creation’ (Arrow, 1974: 56). This implies that individuals play a critical factor in outcomes well into the future of the firm.

The question of who

As we have essentially argued from the outset, the question of who the organization is composed of has important implications for collective outcomes (see

Figure 1). That is, who starts the firm, who is attracted into it, who turns over, who the organization is composed of, etc. is fundamental for overall organizational outcomes and advantage. Similar to much of organization behavior and theory (Davis-Blake and Pfeffer, 1989), however, the underlying assumption in strategy has been that organizations are 'strong situations', and that individuals are malleable, homogeneous, or at least randomly distributed into organizations. This assumption effectively suppresses the 'who' question(s) (and subsequent associated questions regarding motivation, preferences, abilities and so forth.) However, even casual observation of, for example, R&D environments, suggests that the mechanism of self-selection plays a critical role in overall outcomes (Stern, 2004; Zenger, 1994). That is, highly talented individuals self-select and are attracted into (and create) certain environments, thus being largely responsible for overall outcomes (Schneider, 1987).

We should note again that extant arguments in the organizational capabilities literature specifically argue that first, organizational routines are independent of individuals (Levitt and March, 1988: 320; Nelson and Winter, 1982), and given the primacy of routines that second, organizations can withstand significant turnover without material effects on the organization (Kogut and Zander, 1992). We address each point in turn, as it relates to our overall framework.

First, the independence of organizational routines from individuals: from the perspective of methodological individualism, collective structures are dependent on the individuals who make up the organization. How things are done in organizational settings, both in terms of structure and overall efficiency or creativeness, is a function of who is doing. Even in highly routinized environments, the origins of heterogeneous routines are fundamentally at the individual level (Foss and Foss, 2000). While capabilities-based work focuses on exogenous sources of advantage – environment, situation, etc. determining experience – nevertheless the key differential input is the services of the people who make up the organization (Schneider, 1987).

Second, the implications of turnover on organizational capabilities and performance: given the primacy given to collective routines and capabilities, extant work argues that individual turnover does not affect overall organizational routines or outcomes (Kogut and Zander, 1992; Levitt and March, 1988). However, this conceptualization is flawed from an individualistic perspective. That is, who turns over is absolutely fundamental to overall organizational outcomes. Recent work in fact has begun to wrestle with the problem of individual-level measurement and collective-level theory. That is, work, for example by Song et al. (2003; and Lacetera et al., 2004), suggests that capabilities can simply be brought in as a function of certain, key individuals, which implies that capabilities may in the first place reside in individuals rather than in the organization.

Moreover, we should note that much of what happens in organizations can scarcely be labeled as routine (Barnard, 1968: 240; Garicano, 2000: 898; Williamson, 2002: 426). In particular, managers deal with exceptions rather

than the routine. Furthermore, in a given organizational setting, perhaps depending on various task- or industry-specific contingencies, certain individuals provide the parameters or constraints within which action is taken (Brennan and Buchanan, 1985; Elster, 1989). This may give way to a two-stage process where (for example) standard operating procedures and rules of interaction are first created and specified by organizational founders or managers, and then individuals interact given these collective structures or constraints, perhaps gradually changing those procedures and rules (Foss and Foss, 2000). However, such a rationalistic, design-oriented approach is admittedly not the only possible approach to understanding the origins and emergence of routines and capabilities.

Invisible hand explanation

We have argued that capabilities work in general rules out a priori the possibility that heterogeneity is located at the individual level. An important question is how exactly collective structure and heterogeneity then emerge.

We do not necessarily wish to rule out the possibility that heterogeneity may conceivably be located at the collective level, but the question we have highlighted throughout this essay is how it arises in the first place. Various bodies of social science research suggest possibilities for understanding the underlying mechanisms (Hedstrom and Swedberg, 1998). For example, game theory shows that many games are characterized by a multiplicity of equilibria, particularly in repeated settings. Thus, different equilibria can emerge, even if agents are relatively homogeneous.

Similarly, we do not wish to argue that routines and capabilities should necessarily be understood as rationally designed. Again, as game theory has clarified, formalizing the traditional intuition of classical liberalism that many of society's most valuable institutions (language, money, norms and conventions, etc.) are the result of 'human action, but not of human design' (Hayek, 1952; Ullman-Margalit, 1977), collective entities may conceivably arise in a wholly unplanned manner (Schotter, 1981; Sugden, 1986). More broadly, we conjecture that 'invisible hand explanations' (Ullman-Margalit, 1977) can be given of routines and capabilities. In an invisible hand explanation, one seeks to explain some 'well-structured pattern' (ibid.) that is the unintended and unforeseen result of the interdependent actions of agents in process, genetic terms, where the explanation involves identifying a plausible mechanism that aggregates individual choices to the relevant 'well-structured pattern'. For example, local imitative behavior among employees may unintentionally lead to organization-level routines or capabilities. Or to return to the question of heterogeneity, it may simply arise out of individual self-selection based on underlying abilities and skills.

Note that when an invisible hand approach is made precise, for example, by means of game theory, it often turns out that processes of emergence of entities

such as norms and conventions (and by possible implication also routines and capabilities) are strongly conditioned by historical specificities, such as the characteristics of the initial individuals among which the convention began (Sugden, 1986). And although it addresses the unplanned emergence of collective entities, this approach is squarely in the camp of methodological individualism.

Conclusion

The ultimate consequences of the present collectivist approaches in strategic and their underlying assumptions about individuals have recently been summarized by Howard Aldrich as follows: 'if we truly focused on routines, competencies, practices and so on, we would *not* follow people anymore in our research' (Aldrich in Murmann et al., 2003: 25–7; emphasis in original text). We think that such an approach, which lacks the individual, is fundamentally problematic. Individuals after all provide the nested antecedent to numerous collective phenomena and thus deserve careful theoretical and empirical consideration in our theorizing. As noted by Simon (1985: 303), our underlying assumptions about the humans we are studying are absolutely fundamental to theorizing, and the present assumptions of homogeneity and infinite malleability we think are tenuous at best. Overall we have advocated that more careful consideration is given to individual endowments, characteristics, a priori abilities, motivation and choice of behavior.

Our hope, as we have said, is that this essay will serve as a clarion call for capabilities-based scholars to pay more careful attention to their underlying assumptions and to develop theoretical arguments which give consideration to micro-foundations. We concur with Barnard that 'the individual is always the basic strategic factor of organization' (1968: 139). Thus, with individuals at center stage, the questions for capabilities-based work should shift to explicating how routines are created and emerge (and change) from individual action, and how they evolve with the subsequent interaction between individual and collective. Overall we thus challenge the completely behavioral, organic and structurally-oriented approaches, which have not clearly delineated the origins and micro-foundations of routines and capabilities.

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