Microfoundations In Strategy Research

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Introduction

Arguably first applied in the context of strategy by Lippman and Rumelt (2003a), the notion of "microfoundations" has received increasing interest in the strategy field. The purpose of this virtual special issue is to briefly explain the main ideas of the microfoundations research agenda, discuss why and how it is relevant to strategy, and of course to showcase some of the key microfoundational papers in the field, all published in the three SMS journals.

The basic motivation for the microfoundations research agenda in strategy has been to decompose macro-level constructs in terms of the actions and interactions of lower level organizational members, understand how firm-level performance emerge from the interaction of these members, and how relations between macro variables are mediated by micro actions and interactions (see Felin, Foss & Ployhart, 2015). Specifically, microfoundation research has focused on anchoring higher-level concepts like dynamic capabilities, routines and social capital on lower levels. Typical questions raised concern understanding dynamic capabilities in terms of managerial cognition, the motivational antecedents of human capital-based competitive advantage, how individual action and interaction constitute the capabilities that drive performance, how routines emerge from such individual action and interaction, etc.

Though forceful calls for microfoundations in strategy date back more than a decade (Grant, 1996; Lippman & Rumelt, 2003a; Felin & Foss, 2005; Gavetti, 2005; Teece, 2007), microfoundational work did not take off until approximately 2010. Specifically, recent years has witnessed microfoundational strategy work on topics such as routines (e.g., Bapuji et al., 2012; Cohen, 2012; Loch, Sengupta, & Ahmad, 2013; Winter, 2013), firm-level performance (Eisenhardt et al., 2010), knowledge processes (Reinholt, Pedersen & Foss, 2011), absorptive capacity (Lewin et al., 2011; Volberda, Foss & Lyles, 2010), ambidexterity (Rogan & Mors, 2014), firm R&D (Paruchuri & Eisenman, 2012), stakeholder management (Bridoux & Stoelhorst, 2013), problem formulation (Baer et al., 2012), innovation (Grigoriou & Rothaermel, 2014), dynamic capabilities (Argote & Ren, 2012; Helfat & Peteraf, 2015; Hodgkinsson & Healey, 2011; Teece, 2007), social capital (Gooderham, Minbaeva & Pedersen, 2011), networks (Ahuja et al., 2012), the RBV (Foss, 2011), and organizational capabilities (Kemper, Schilke, & Brettel, 2013)-

The microfoundations agenda also has important allies and fellow-travellers. Thus, emerging at roughly the same time as the microfoundations agenda such research streams as behavioral strategy (Powell et al., 2011) and the human capital and strategy literature (e.g. Coff & Kryscynski, 2011; Ployhart & Moliterno, 2011) share many of the same interests and concerns. The increased emphasis on empirical identification strategies and on theoretically accounting for explanatory mechanisms harmonizes well with the microfoundations agenda, as these represent quests to increase the causal articulation of empirical as well as theoretical work. Such articulation often involves causal relations at levels lower than those of the focal phenomenon that one seeks to explain.

The above indicates that it is fair to say that the basic microfoundations message has met with substantial success and acceptance in strategy. [1] To be sure, the microfoundations agenda has also encountered pushback (see Vromen, 2010; Winter, 2012; Barney & Felin, 2013; Felin, Foss & Ployhart, 2015; and the exchanges in Foss, Heimeriks, Winter & Zollo, 2012). However, the purpose of this virtual special issue is to briefly introduce the microfoundation research and discuss a few emerging microfoundational themes, making references to some of the key papers that have been published in the three SMS journals.

Microfoundations in Strategy: Pedigree and Meaning

Although the concept has a pedigree in economics of the 1960s (Janssen, 1993), the earliest explicit uses in strategy research of the concept of microfoundations are by Lippman and Rumelt (2003a), Foss (2003), Felin and Foss (2005), Gavetti (2005), and Teece (2007). Certainly, concerns about a number of key macro constructs in strategic management had been raised previously. In his heavily cited paper, Grant (1996: 112; emphasis in original) called for ”dispensing with the concept of *organizational knowledge* in favor of emphasizing the role of the individual in creating and storing knowledge” (p.112). At about the same time, Coff (1997, 1999) questioned the notion of firm-level competitive advantage, pointing out that ultimately all value creation and value appropriation are reducible to individual actions. And the literature on upper echelons and top management teams, now in its third decade of successful development (Hambrick & Mason, 1984), may be seen as microfoundational, due to its focus on top management team characteristics, roles, decision making, and social-psychological dynamics (Finkelstein & Hambrick, 1996).

The early calls for microfoundations in management research (e.g., Foss, 2003; Lippman & Rumelt, 2003a; Felin & Foss, 2005) argued that strategy and organization theory focused on firm-level explanations of outcomes such as competitive advantage, profit, innovation, inertia, or absorptive capacity with too little attention to the entities and mechanisms at lower levels of analysis, notably, individuals and their interactions, and how these drove firm-level outcomes. In fact, it is very hard to provide proper advice to managers on how to promote factors like dynamic capabilities, social capital, routines that are linked to firm-level performance if their underlying mechanisms are more or less black-boxed. Importantly, such arguments were not made to advance philosophical points, but rather that extant macro constructs and causal claims often stood on shaky grounds. For example, Lippman and Rumelt (2003a) provocatively argued that properly accounting for the value appropriation of all factors of production implies that there is no firm-level residual called “profit.”

Many microfoundations papers do not proffer definitions of the term. In fact, microfoundations appear to mean different things to different people. As Felin, Foss and Ployhart (2015) clarify, microfoundations is fundamentally an analytical levels argument, and not necessarily an argument about individuals. However, interpretations differ in the literature: While, for example, Teece (2007) exemplifies the former argument, [2] Felin and Hesterly (2007) very strongly emphasize the explanatory primacy in management research of individuals.

In general, microfoundations are about locating (theoretically and empirically) the proximate causes of a phenomenon (i.e., the explanations of an outcome) at levels of analysis lower than that of the phenomenon itself. Thus, Felin, Foss, Heimeriks and Madsen (2012:) define microfoundations as a

…theoretical explanation, supported by empirical examination, of a phenomenon located at analytical level N at time *t* (N_t). In the simplest sense, a baseline micro-foundation for level N_t lies at level N-1 at time *t-1*, where the time dimension reflects a temporal ordering of relationships with phenomena at level N-1 predating phenomena at level N. Constituent actors, processes, and/or structures, at level $N\text{-}1_{t-1}$ may interact, or operate alone, to influence phenomena at level N_t. Moreover, actors, processes, and/or structures at level $N\text{-}1_{t-1}$ also may *moderate* or *mediate* influences of phenomena located at level N_t or at higher levels (e.g., $N+1_{t+1}$ to $N+n_{\,t+n}$).

Note that this definition simply highlights levels and does not say that microfoundations *must* involve reduction to individuals, a position associated with “methodological individualism” (Agassi, 1960). Still, many microfoundational papers have indeed emphasized individuals (Felin & Hesterly, 2007) and have tried to measure at this level, in addition to the firm level. Thus, Floyd and Sputtek (2011) subsume the microfoundations movement under a broader heading of “rediscovering the individual in strategy.”

In contrast to multilevel theory and empirics (e.g., Aguinis, Boyd, & Pierce, 2011), which do not privilege any particular level, microfoundations imply, as the name indicates, that one level, namely the micro level, holds explanatory primacy. Higher-level phenomena are derived ones. It is important to understand that microfoundations do *not* deny that higher level phenomena may exert a causal influence on lower level phenomena (Coleman, 1990). Similarly, microfoundations do *not* imply that macro constructs and variables have no place in strategy research. Constructs, such as value creation and competitive advantage, are firm level constructs, and to a large extent define the field. Indeed, the firm level is an entirely legitimate level of analysis and measurement. The microfoundational “beef” with macro-management theory is that macro scholars too often work with firm-level constructs with often unclear microfoundations, and proceed as if there are direct causal relations between macro variables (e.g., arguments that capabilities cause performance), where, in fact, the real causal relations involve lower level actions and interactions. Many firm-level constructs (like social capital and routines) are carried, embedded and reproduced by individuals and as such their effects on firm-level outcomes most involve actions and interactions that involve individuals.

Why Microfoundations?

An important motivation behind the micro-foundations research agenda is arguably the desire to engage in "reduction," which is often seen as a hallmark of scientific inquiry (see Elster, 1989). Scientists and scholars engage in reduction when they explain a particular phenomenon in terms of more fundamental phenomena. The pursuit of microfoundations is obviously an instance of such reduction, which in turn may be seen as a part of the broader mechanism-based approach to explanation. This approach stresses causality in the sense of accounting for how a set of interacting entities that carry out interrelated activities produce the phenomenon of interest (Craver, 2007: 5). This makes microfoundations a natural ally of the increasingly important quest in strategy for causal identification. As any empiricist knows, uncovering causality on the basis of observational data is inherently challenging and tradeoffs often have to be struck. One factor pulling in the other direction is that explanatory parsimony is important, to the empiricist as well as to the theorist, and "reduced form" explanation does have its place, provided the analyst understands its inherent limitations.

Coleman (1990: 3-4) identifies additional reasons why micro-foundations are critical. Thus, Coleman suggests that macro-level explanation (i.e., explanation of macro phenomena in terms of other macro phenomena) cannot discriminate between the many potential alternative lower-level explanations of macro-level behaviour because of a fundamental problem of unobserved mechanisms. For example, much strategy thinking seeks the explanation of differential firm performance in firm-level heterogeneity, that is, heterogeneous routines and capabilities. However, as Felin and Hesterly (2007) forcefully argues heterogeneity may really be located at the individual level, and firm-level heterogeneity can thus be an epiphenomenon. A mechanism driving this is individual self-selection into particular firms (Schneider, 1987; Felin & Hesterly, 2007). Coleman also suggests that since micro-level mechanisms are the proximate causes of macro phenomena, it may often make the most sense to *intervene* at the micro level, which is an additional reason for properly identifying microfoundations. For example managers cannot directly intervene on the level of, for example, capabilities. However, managers can *influence* capabilities, for example, by hiring key employees (in which case the micro-level is directly involved) or by changing overall recruitment policies, reward systems, etc. Such interventions are aimed at influencing what goes on at the micro-level. A third, and more controversial, reason to favour microfoundational explanation, according to Coleman is that explanations that involve the micro level are more stable, fundamental, and general than macro level explanations. Ultimately, all of these reasons boil down to microfoundations yielding fundamental new insight.

The Papers in this Special Issue

This virtual special issue contains what the special issue editors consider key microfoundational papers published in the three SMS journals, that is, the *Strategic Management Journal*, the *Strategic Entrepreneurship Journal*, and the *Global Strategy Journal*. While many papers published in those journals can claim some relevance for the microfoundations research agenda, we selected papers that have achieved the status of classics and/or are explicitly seen by their authors as microfoundational. Also, we wanted to showcase the different approaches to microfoundations in strategy and we also wanted to draw attention to work that while it may not be explicitly branded as "microfoundational" nevertheless furthers the microfoundations, such as work on strategic human capital, CEO effects, entrepreneurship, and behavioral strategy.

Examples of papers that fall in the classics category are, to begin chronologically, Grant (1996). Written in the heydays of the "knowledge-based" view (Spender, 1996), Grant's paper stands out by *not* starting the analysis from macro concepts of "organizational knowledge," "capabilities," "core competencies" and the like. On the contrary, Grants seeks to decompose such notions in their constituent parts. Fast forwarding 7 years, Lippman and Rumelt's (2003a,b) two papers are highly sophisticated analyses that deal massive blows to some of the most cherished macro concepts in the strategy field, such as firm-level profits (Lippman & Rumelt, 2003a), and offers an approach to understand value appropriation at the resource level (Lippman & Rumelt, 2003b). While the former paper does not explicitly associate microfoundations with individuals, the latter does. Teece (2007) is another paper that has achieved the status of a classic. Teece seeks to build microfoundations for dynamic capabilities and argues that these can be found in organizational processes that support the sensing and the seizing of opportunities and maintain competitiveness by enhancing, combining and reconfiguring the firm's assets.

A rather different approach to microfoundations is represented by Foss and Foss (2005) who take the property right, that is, having de facto control over some resource attribute, as the fundamental unit of analysis. Individuals enter this story because it is individuals that hold property rights and seek to maximize the value of the rights they hold. The authors show how this basic conceptualization provides new insight in value creation. Foss and Foss (2005) thus continue a long tradition in strategic management of seeking microfoundations for key strategic concepts and processes in organizational economics (cf. Argyres, Felin, Foss & Zenger, 2012). While this tradition is very much alive and well, scholars working in it seldom explicitly style their work as microfoundational, perhaps because strategy work building on organizational economics has always inherently had a microfoundational component. For example, transaction cost economics (TCE) (Williamson, 1996) is very explicit about its behavioral microfoundations. Nickerson and Zenger (2008) start from TCE, but add social psychology research on social comparison processes, to build a theory of how envy can cause hierarchical failure and what actions managers can take to mitigate the detrimental consequences of such processes. They show how this leads to new insight in the internal organization and boundaries of firms, which are key TCE phenomena.

A large swath of recent microfoundational work starts from cognitive psychology premises. As Levinthal (2011) argues, the broad bounded rationality tradition offers a well-honed sophisticated apparatus that illuminates the micro mechanisms of decision making and its organization and strategic ramifications. Thus, papers such as Bingham and Eisenhart (2011) and Maitland and Sammartino (2014) take their direct cues from their exploration of the role heuristics and simply rules of thumb in strategizing. Baer, Dirks and Nickerson (2012) build from the emphasis in Simon's work on problems and establish a theory of problem-definition in a strategic context. Gavetti, Levinthal, and Rivkin, (2005) point out that in novel and complex environments, neither local search nor rational deduction are likely to lead to a successful array of strategic choices. Analogical reasoning, can however do this. Helfat and Peteraf (forthcoming) demonstrate the strong potential of cognitive psychology with respect to informing the microfoundations of dynamic capabilities.

The bounded rationality tradition also informs Bouquet and Birkinshaw's approach to the formation of global strategies. Starting from the attention-based theory of the firm, they argue that the “international attention” of the firm’s upper echelons link the firm’s (international) operating environment and its internal organization. In the context of the entrepreneurship literature, Smith and Cao (2007) show how such ideas can cast new light, beyond existing adaptation and ecology views, on the firm-environment relationship. Turner and Makhija (2012) add to this line of inquiry by arguing that much work on information-processing in organizations has effectively ignored the role of individuals, and by adopting a quasi-experimental research design that allows them to analyze top-down influences from organizational structure to the information processing of individuals.

Based on different psychological premises, Hodgkinson and Healey (2011) argue that such “cold cognition” approaches need to be supplemented with insight into managerial emotion and affect, and building on recent advances in social cognitive neuroscience and neuroeconomics they demonstrate how doing this leads to additional insight in dynamic capabilities.

In contrast to the strong emphasis on relatively rigid heuristics and externally driven learning in much of the literature derived from Simon’s take on bounded rationality (Simon, 1956), Felin and Zenger (2009) offer a much more rationalistic view of “entrepreneurs as theorists,” actively engaged in the construction and testing of bold conjectures in the form of entrepreneurial plans. In some ways Eesley and Roberts (2012) paper can be seen as bridging the emphasis on context in the bounded rationality tradition and the rationalistic emphasis on innate talent in Felin and Zenger (2009). Thus, Eesley and Roberts argue that the relative importance of experience versus talent changes with the context. Specifically, in a familiar context, experience is dominant, whereas in unfamiliar contexts, talent is more important.

Finally, we have included a number of papers that show the power of microfoundational reasoning in emerging areas within the strategy field. This includes two papers on employee mobility (Aime, Johnson, Ridge, & Hill, 2010; Lui, Wright, Filototchev, Dai, & Lu, 2010) and two papers on stakeholder theory (Harrison, Bosse, & Phillips, 2010; Bridoux & Stoelhorst, 2013). Employee mobility is a particularly important microfoundational issue, because it goes right to the heart of the issue of the extent to which competitive heterogeneity is primarily located at the firm-level or at the level of individuals (Felin & Hesterly, 2007). In fact, Aime, Johnson, Ridge, and Hill (2010) find that key employees dramatically matter to competitive advantage. They “challenge the traditional argument that socially complex routines create sustainable competitive advantages because they are not easily imitated and do not rely on any single individual. Instead, we show that routines are stable to the loss of key employees, but the advantages derived from them are not” (Aime, Johnson, Ridge, & Hill, 2010: 75). Lui, Wright, Filototchev, Dai,and Lu (2010) examine human capital mobility in an international context. They find that firms founded by returnees are more innovative than their local counterparts, and that returnee firms have a spillover effect on non-returnee firms' innovation performance, thus underscoring the importance of human capital for understanding firm-level outcomes.

In addition to the key question of how much value such human capital appropriates (Coff, 1997, 1999; Lippman & Rumelt, 2003b) is the question of how human capital gets deployed to superior uses. In their paper Harrison, Bosse, and Phillips (2010) argue that firms that develop trusting relations to, for example, employees are in a better position to understand the individual characteristics of such employees and hence allocate their human capital to its best uses inside the firm. This raises the issue of why some firms are successful with stakeholder management approaches that are not trusting but rather are based on relative bargaining powers. Bridoux and Stoelhorst (2013) resolve this puzzle by pointing to the likely possibility that firms face heterogeneous stakeholders that care about fairness and trust to varying extent. Heterogeneous stakeholders then self-select into the firms that fit their personal preferences best.

Concluding Comments

In these brief introductory comments, we have tried to sketch the emerging microfoundations agenda in strategy. Our overall observation is that microfoundations is not a distinct theoretical or empirical approach. Microfoundations are not a theory or a church, but a huge tent. It is a broad set of research heuristics that call attention to inter-level mechanisms and emphasizes the explanatory primacy of the micro level. As such it can organize fundamental efforts, not just in strategy, but in macro management theory more broadly, and help to overcome the much-lamented micro-macro divide in management research (Buckley, Hamdani, Klotz, & Valcea, 2011). But, the fact remains that the microfoundations agenda imposes relatively few restrictions on theorizing. It is therefore not surprising that microfoundations contributions indeed differ in many dimensions. For example, extant contributions differ in terms of disciplinary underpinning. Thus, Lippman and Rumelt (2003b) draw on economic bargaining theory framework to understand how surpluses get shared, while Gavetti (2005) draws on cognitive psychology research and called for more attention to managerial cognition. Other contributions are explicitly interdisciplinary; thus, Nickerson and Zenger (2008) merge key ideas of the social-psychology of envy with transaction cost economics, linking organizational outcomes (choice of organizational form) to key assumptions about the interaction of individuals.

However, so much successful microfoundational theory work now exists that it is fair to conclude that the major challenges to the microfoundations research agenda are probably not theoretical in nature but perhaps rather empirical. Indeed, Floyd and Sputtek (2011: 15) note that "[e]mpirical work in the [microfoundations] area is still relatively scarce," and our selection of key microfoundational articles in the three SMS journals clearly has a much higher theory/empirics ratio than one will find in the *Strategic Management Journal* in general. Arguably, the key reasons for this situation are that empirical microfoundational work requires data sampling on at least two levels, which is often difficult (costly), and, perhaps, that knowledge of relevant empirical methodology (i.e., multi-level statistics) is not yet sufficiently diffused in the research community. However, strategic management is fundamentally an empirical discipline, and new research may not pass muster if they are not productive of new empirically corroborated insights.

Interestingly, the empirical challenges to the microfoundations research agenda can be turned into strengths, or at least interesting research opportunities. It is arguable that key aspects of microfoundations are not necessarily best researched using traditional regression-based methodologies and cross-sectional datasets (or even panel datasets) (see further Felin, Foss & Ployhart, 2015). Even of the hierarchical linear models (HLM) have some limitations in terms of modeling complex interactions between levels with higher-level performance outcomes. Thus, understanding microfoundations call for understanding behaviors and their complex interaction, resulting in higher-level outcomes. The favored methodologies in the strategy field are not well suited for capturing behaviors, interaction and how these give rise to inter and intra-level mechanisms.

However, rather than being a problem, this is an exciting challenge. Thus, microfoundations call for alternative approaches to supplement existing multi-level tools, such as simulation exercises, experiments and rigorous longitudinal small N research (see further Felin, Foss & Ployhart, 2015), that each may illuminate different aspects of microfoundations. Thus, while simulation approaches are particularly useful for understanding, bottom-up emergent processes, modelling aggregation as it unfolds over time, experimental approaches may be particularly useful for understanding top-down (treatment) effects (see Turner& Makhija, 2012), for example, the effects of rewards on motivation. Small N approaches do not, of course, lend themselves to immediate generalization, although researchers are always at liberty to ask how generalizable a given singular causation, emerging from "case" research, is. Moreover, small N research may usefully and powerfully enable the study of "outliers" and "extremes," such as particularly efficient and valuable human capital ("star talent"). Our traditional large N approaches are fundamentally based on averages. However, strategy has, of course, always maintained an interest in outliers (successful firms are outliers). Small N case studies can help us better understand such outliers. Thus, the microfoundations agenda does not just involve a new, if broad, set of heuristics for theory development in strategy, but also has the potential to influence the methods we adopt.

To view the ARTICLES for this virtual special issue, click **HERE.**

Papers from the SMS Journals Included in this Special Issue

Aime, F., Johnson, S., & Ridge, J. W. 2010. The routine may be stable but the advantage is not: Competitive implications of key employee mobility. Strategic Management Journal, 31, 75–87.

Baer, M., Dirks, K.T., & Nickerson, J.A. 2012. Microfoundations of strategic problem formulation. Strategic Management Journal, 34, 197-214.

Blettner, D., Chaddad, F., and Bettis, R. 2012. The CEO performance effect: statistical issues and a complex fit perspective. Strategic Management Journal, 33, 986–999.

Bingham, C., and Eisenhardt, K. 2011. Rational heuristics: the 'simple rules' that strategists learn from process experience. Strategic Management Journal, 32, 1437–1464.

Bouquet, C. & Birkinshaw, J. 2011. How global strategies emerge: An attention perspective. Global Strategy Journal, 1, 243-262

Bridoux, F., & Stoelhorst, J. W. 2013. Microfoundations for stakeholder theory: Managing stakeholders with heterogeneous motives. Strategic Management Journal, 35: 107-125

Eesley, C. & Roberts, E. B. 2012. Are you experienced or are you talented?: When does innate talent versus experience explain entrepreneurial performance? Strategic Entrepreneurship Journal, 6, 207-219.

Felin, T. & Zenger, T. 2009. Entrepreneurs as theorists: on the origins of collective beliefs and novel strategies. Strategic Entrepreneurship Journal, 3: 127-146.

Foss, K. & Foss, N.J. 2005. Resources and transaction costs: How property rights economics furthers the resource-based view. Strategic Management Journal 26: 541-553.

Gary, M. S., Wood, R. E., & Pillinger, T. 2012. Enhancing mental models, analogical transfer, and performance in strategic decision making. Strategic Management Journal, 33(11), 1229–1246.

Gavetti, G., Levinthal, D. A., & Rivkin, J. W. 2005. Strategy making in novel and complex worlds: The power of analogy. Strategic Management Journal, 26, 691–712.

Grant, R. A. 1996. Towards a knowledge-based theory of the firm. Strategic Management Journal, 17: 109-122.

Harrison, J. S., Bosse, D. A., & Phillips, R. A. 2010. Managing for stakeholders, stakeholder utility functions, and competitive advantage. Strategic Management Journal, 31: 58-74

Helfat C.E. & Peteraf, M.A. Managerial cognitive capabilities and the microfoundations of dynamic capabilities. Strategic Management Journal (forthcoming)

Hodgkinson, G. P. and Healey, M. P. 2011. Psychological foundations of dynamic capabilities: reflexion and reflection in strategic management. Strategic Management Journal, 32: 1500–1516.

Levinthal, D. A. 2011. A behavioral approach to strategy—what's the alternative? Strategic Management Journal, 32, 1517–1523.

Lippman, S.A. and Rumelt, R.P. 2003a.The payments perspective: Micro-foundations of resource analysis. Strategic Management Journal, 24: 903-927.

Lippman, S.A. and Rumelt, R.P. 2003b. A bargaining perspective on resource advantage. Strategic Management Journal, 24: 1069-1086.

Liu, X., Wright, M., Filototchev, I., Dai, O. & Lu, J. 2010. Human mobility and international knowledge spillovers: Evidence from high-tech small and medium enterprises in an emerging market. Strategic Entrepreneurship Journal, 4, 340-355.

Maitland, E. and Sammartino, A. 2014. Decision making and uncertainty: The role of heuristics and experience in assessing a politically hazardous environment. Strategic Management Journal (forthcoming).

Nickerson, J. A., & Zenger, T. R. 2008. Envy, comparison costs, and the economic theory of the firm. Strategic Management Journal, 29, 1429–1449.

Smith, K. G. & Cao, Q. 2007. An entrepreneurial perspective on the firm-environment relationship. Strategic Entrepreneurship Journal, 1, 329-344.

Teece, D. 2007. Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. Strategic Management Journal, 28, 1319–1350.

Turner, K. and Makhija, M. 2012. The role of individuals in the information processing perspective. Strategic Management Journal, 33, 661–680.

Other References

Abell P 2004. Narrative explanation: An alternative to variable-centered explanation? *Annual Review of Sociology* **30**: 287-310.

Abell P, Felin T, Foss N. 2008. Building microfoundations for the routines, capabilities, and performance links. *Managerial and Decision Economics* **29:** 489–502.

Agassi J. 1960. Methodological individualism. *British Journal of Sociology* **11:** 244-270.

Aguinis B, Boyd C, Pierce J. 2011. Walking new avenues in management research methods and theories: bridging micro and macro domains. *Journal of Management* **37:** 395–403.

Argote L, Ren Y, 2012, Transactive memory systems: A microfoundation of dynamic capabilities. *Journal of Management Studies.* **49**(8): 1375-1382

Argyres NS, Felin T, Foss N, Zenger T. 2012. Organizational economics of capability and heterogeneity. *Organization Science*. **23**(5): 1213-1226

Bapuji H, Hora M, Saeed AM. 2012. Intentions, intermediaries, and interaction: Examining the emergence of routines. *Journal of Management Studies*. **49**(8): 1586-1607

Barney J, Felin T. 2013. What are microfoundations? *Academy of Management Perspectives* **27:** 138-155.

Buckley MR, Hamdani MR, Klotz AC, Valcea S. 2011. Into the great wide open: Bridging the micro–macro divide in the organizational sciences. *Research Methodology in Strategy and Management.* **6**: 31-68

Campbell BA, Coff R, Kryscynski D. (2010). Rethinking sustained competitive advantage from human capital. *Academy of Management Review* **37:** 376–395.

Coff R. 1997. Human assets and management dilemmas: coping with hazards on the road to resource-based theory. *Academic Management Review* **22:** 374–402

Coff R. 1999. When competitive advantage doesn't lead to performance: Resource-based theory and stakeholder bargaining power. *Organization Science* **10:** 119–133.

Coff R, Kryscynski D. 2011. Drilling for micro-foundations of human capital-based competitive advantages. *Journal of Management* **37:** 1429–1443.

Cohen MD. 2012. Perceiving and remembering routine action: Fundamental micro-level origins. *Journal of Management Studies*. **49**(8): 1383-1388

Coleman J. 1990. *Foundations of social theory*. Boston: Harvard University Press.

Craver CF. 2007. *Explaining the Brain: Mechanisms and the Mosaic Unity of Neuroscience*. Oxford: Oxford University Press.

Eisenhardt K, Furr NR, Bingham CB. (2010). CROSSRAODS - Microfoundations of performance: Balancing efficiency and flexibility in dynamic environments. *Organization Science*. **21**(6) 1263–1273.

Elster J. 1989. *Nuts and bolts for the social sciences*. Cambridge, UK: Cambridge University Press.

Felin T, Foss N. 2005. Strategic organization: A field in search of micro-foundations. *Strategic Organization* **3:** 441–455.

Felin T, Hesterly W. 2007. The knowledge-based view, nested heterogeneity, and new value creation: Philosophical considerations on the locus of knowledge. *Academy of Management Review* **32:** 195–218.

Felin T, Foss N, Heimeriks K., Madsen T. 2012. Microfoundations of routines and capabilities: Individuals, processes, and structure. *Journal of Management Studies* **49:** 1351–1374.

Felin T, Foss NJ, Ployhart R. 2015. The microfoundations movement in strategy and organization theory. *Academy of Management Annals* (forthcoming).

Floyd S, Sputtek R. 2011. Rediscovering the individual in strategy: methodological challenges, strategies and prospects. *Resolution Methodology Strategies Management* **6:** 3–30

Foss NJ. 2003. Bounded rationality and tacit knowledge in the organizational capabilities approach: An assessment and reevaluation. *Industrial and Corporate Change* **12:** 185-201.

Foss NJ. 2011. Why micro-foundations for resource-based theory are needed and what they may look like. *Journal of Management* **37:** 1413-1428.

Foss NJ, Heimeriks K., Winter M, Zollo S. 2012. A Hegelian dialogue on the micro-foundations of organizational routines and capabilities. *European Management Review:* 173–197

Foss NJ, Lindenberg S. 2013. Micro-foundations for strategy: a goal-framing perspective on the drivers of value creation. *Academy of Management Perspectives* **27:** 85–102

Gavetti G. 2005. Cognition and Hierarchy: Rethinking the Microfoundations of Capabilities' Development. *Organization Science* **16**: 599-617.

Gavetti G, Levinthal D, Ocasio W. 2007. Neo-Carnegie: The Carnegie School's past, present, and reconstructing for the future. *Organization Science* **18:** 523–536.

Gooderham P, Minbaeva D, Pedersen T. 2011. Governance mechanism for the promotion of social capital for knowledge transfer in multinational corporations. *Journal of Management Studies* **48**(1): 123-150.

Hambrick DC, Mason PA. 1984. Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review* **9:** 193–206.

Janssen M. 1993. *Microfoundations: A critical inquiry*. London: Routledge.

Kemper J, Schilke O, Brettel M. 2013. Social capital as a microlevel origin of organizational capabilities. *Journal of Product Innovation Management.* **30**(3): 589-603

Lindenberg S, Foss N. 2011. Managing joint production motivation: the role of goal framing and governance mechanisms. *Academy of Management Review* **36**: 500–525

Loch CH, Sengupta K, Ahmad MG. 2011. The microevolution of routines: How problem solving and social preferences interact. *Organization Science*, **24**(1): 99 - 115

Machamer P, Darden L, Craver CF. 2000. Thinking about mechanisms. *Philosophy of Science* **67:** 1-25.

Paruchuri S, Eisenman M. 2012. Microfoundations of firm R&D capabilities: a study of inventor networks in a merger. *Journal of Management Studies*. **49**(8): 1509-1535

Ployhart RE, Moliterno TP, 2011. Emergence of the human capital resource: A multilevel model. *Academy of Management Review*. **36**(1): 127-150

Powell TC, Lovallo D, Fox CR. 2011. Behavioral strategy. *Strategic Management Journal* **32**: 1369–1386.

Reinholt M, Pedersen T, Foss NJ. 2011. Why a central network position isn't enough: The Role of motivation and ability for knowledge sharing in employee networks. *Academy of Management Journal* **54**(6): 1277-1297.

Rogan M, Mors ML. 2014. A network perspective on individual-level ambidexterity in organizations. *Organization Science* forthcoming.

Schneider B. 1987. The people make the place. *Personnel Psychology* **40**: 437–454.

Simon HA. 1956. Rational choice and the structure of the environment. *Psychological Review* **63**: 129–138.

Spender JC. 1996. Making knowledge the basis of a dynamic theory of the firm. *Strategic Management Journal* **17**: 45–62.

Volberda HW, Foss NJ, Lyles MA. 2010. PERSPECTIVE—Absorbing the concept of absorptive capacity: How to realize its potential in the organization field. *Organization Science* **21**(4): 931-951

Vromen J. 2010. Micro-foundations in strategic management: squaring Coleman's diagram. *Erkenntnis* **73**(3): 365–383.

Winter S. 2012. Capabilities: their origins and ancestry. *Journal of Management Studies* **49**: 1402–1406.

Winter S. 2013. Habit, deliberation and action: strengthening the microfoundations of routines and capabilities. *Academic of Management Perspectives* **27**: 120–137.

Williamson OE 1996. *The Mechanisms of Governance*. Oxford: Oxford University Press

[1] Further evidence can be found in recent journal special issues on microfoundations (Devinney, 2013; Felin, Foss, Heimeriks & Madsen, 2012), and in major themed conferences (e.g., a SMS special conference in Copenhagen 2014 was dedicated to microfoundations).

[2] Specifically, Teece (2007: 1319) highlights the "microfoundations of dynamic capabilities … the distinct skills, processes, procedures, organizational structures, decision rules, and disciplines … which undergird enterprise-level sensing, seizing, and reconfiguring of capacities that are difficult to develop and deploy." There is no mention of individuals.