INSEAD

The Business School for the World®

Faculty & Research Working Paper

Microfoundations of Management: Behavioral Strategies and Levels of Rationality in Organizational Action

Henrich GREVE

2013/59/EFE

Microfoundations of Manangement: Behavioral Strategies and Levels of Rationality in Organizational Action

Henrich Greve*

March 2013

I am grateful for comments from Takako Fujiwara-Greve, Giovanni Gavetti, John W. Meyer, and an anonymous reviewer. They are in no way responsible for the final result.

* INSEAD Chaired Professor of Organization and Management Theory, Professor of Entrepreneurship at INSEAD, 1 Ayer Rajah Avenue, 138676 Singapore.
Email: henrich.greve@insead.edu

Abstract

Behavioral strategies are a potentially promising microfoundation of management research. Strategies involving processes of momentum, feedback, inference, and anticipation are already being investigated by organizational scholars, and evidence is mounting for each one. They are interesting because they can be seen as expressions of the level of rationality in organizational action, taking the organization as a stylized decision maker, and they also serve as windows into decision making processes and sources of puzzles that can guide direct investigation of decision making processes. The combination of evidence, consequentiality, and generative power for future research argue for giving behavioral strategies a role in the microfoundations of management theory.

Introduction

The discussion on microfoundations of organizations and management research has been full of excitement. There are calls for more work (Felin & Foss, 2005; Gavetti, 2005), critiques of the overall program (Jepperson & Meyer, 2013) or the utility of the specific proposals (Winter, 2011), expositions of half-truths in the discussion (Felin & Barney, 2013), and a claim that some conclusions may be acceptable although the program has flawed premises (Winter, 2013). From the shape of the discussion, we might suspect that this is a complex idea has not yet become concrete enough to allow scholars to agree on the terms of the debate.

Microfoundations are complex because they come in multiple forms. They can be ideas of which level of analysis is the correct one for specifying a theoretical explanation, which mechanism is allowable in a theoretical explanation, and which social unit should be given actor-hood in the sense of being the basic behavioral units in the theory. These forms of microfoundations are related to each other, but are not the same. We may view individual persons as the basic behavioral units, but still prefer to explain their behaviors by situational characteristics, thus giving the situation priority as the level of analysis. We may view explanations involving learning as preferable, but still have a choice of the level of analysis at which learning takes place. The diverse forms of microfoundations are matched by a diversity of management theory, as the range of phenomena that management theorists seek to explain is wide, and so are the approaches to theory building.

The analytical separation of these three forms of microfoundations has an important implication. When discussing microfoundations for management, clarity about the form of microfoundation under consideration is essential. It is too easy to understand discourse on microfoundations as being one of actor-hood, which is a frequent and perhaps understandable

interpretation. But it is not always the most useful one. I observe that organizations are populated by individuals who attribute a certain degree of actor-hood to themselves, and they can be quite insistent on this point.[1] Yet there are important theories for which such self-conceptions of actor-hood are a distraction because it is not the preferred level of analysis. Rational choice is an example. In rational choice, decisions are seen as an interaction between preferences and alternatives, which at the surface appears to favor the individual as the level of analysis, but tractability of the models limits the heterogeneity in individual preferences that can be incorporated. So, the theory celebrates individual agency and choice as microfoundational postulates, but gets its explanatory power by taking the environment (for example, a market or a game) as the preferred level of analysis.[2] Thus the theory transitions smoothly from an agentic view of individuals to contextual explanations of their behaviors.

Many who approach organizations from a bounded rationality view make a similar implicit transition from one form of microfoundation to a different one. Actor-hood is given to the boundedly rational individual, but much of the research does not apply the individual level of analysis. It is time to be explicit about this alternative form of microfoundation, because it is important and deserves to be addressed directly. The microfoundation in much work is a behavioral strategy, where strategy is taken in the sense of a systematic behavioral pattern with some adaptive consequence. The definition leaves out the questions of whether the adaptive consequences are positive or negative, and whether they are intended. Those questions are part of the research agenda, so they should not be in the definition.

[1] An apology to John Meyer is in order: the sentence looks like something he might have said or written.
[2] By level of analysis I am referring to the social unit at which the theoretical argument is posed (Jepperson & Meyer, 2011; Simon, 1962), which may differ from the actor for which the prediction is made. For example, game theory contains multiple theories to predict the behavior of an individual actor, and predictions rely on considerations of how actors choose, the environment created by the game payoffs, and actor interactions as specified through a solution concept. In this construction, the interactions have the greatest theoretical interest and the environment the greatest applied interest, leaving the actor as the least interesting component of the theory.

Using the word strategy in this sense implies that its connotation of deliberate action is ignored, but other terms appear to be even more problematic.

The strategies I have in mind are different from the standard operating procedures that Cyert and March (1963) discussed and the routines that Nelson and Winter (1982) specified because the behavioral strategies act as mechanisms for modifying organizational actions, while standard operating procedures and routines *are* organizational actions. This has two implications. First, the best correspondence with their work is not in the standard operating procedures and routines but with the mechanisms they used to explain their persistence or change, such as problemistic search (Cyert & March, 1963). Second, standard operating procedures and routines can vary widely among across many organizations, but behavioral strategies should be consistent across organizations. They provide the theory with concepts that have the level of abstraction needed to derive general theoretical statements.

Choosing behavioral strategies as a promising microfoundation means not favoring the most micro of microfoundations, because behavioral strategies are best thought of as meso-level theoretical mechanisms that generate predictions in their own right and may inform complementary theoretical mechanisms posed at the same or different level of analysis. They are focal points for theory building and empirical research with implications that may be either on a more macro level or on a more micro level. Organizations are structured environments in which individuals interact according to work roles, and this structural influence means that organization level outcomes such as behavioral strategies are difficult to reduce to more micro level explanations (Jepperson & Meyer, 2011). Thus, these behavioral strategies may pose a boundary for how far down along the microfoundation scale a theory of strategic behavior can be made.

At this point, research has advanced to a point of showing clear empirical evidence of

behavioral strategies. That is the first reason for describing them and pointing out some of the evidence. The second reason is that the stakes are high in investigating these strategies further. They are consequential for organizational actions and outcomes, and are associated with different levels of rationality if we take the liberty of viewing the organization as a stylized decision maker. They are thus alternative answers to the question of how smart organizations are. The third reason is that these strategies are to a significant degree purposive and chosen, and thus differ from a broad category of organizational actions that can be classified as nonstrategic forms of change. The degree of purposive action differs between these behavioral strategies, however, which is another reason to examine the contrasts between them. The behavioral strategies I discuss here are momentum strategies, feedback strategies, inferential strategies, and anticipatory strategies. The literature has already given some treatment to these strategies. Notably, Miner and Mezias (1996) have a classification scheme of learning processes that defines inferential strategies similarly to this paper, and Levitt and March (1988) have a discussion that includes some of the themes developed below. Similarities of this treatment to earlier work reflect intellectual debt; differences are mostly a choice of analytical emphasis.

These behavioral strategies might be interpreted as cognitive strategies, but are surely more complex because organizations are collectives with decision making involving formal procedures, politics, and group discussion. In this treatment, I will have little to say about how the behavioral strategies map on to such micro processes. Although theory building from the mind up is applied by some scholars taking a behavioral view of organizations (Gavetti, 2012), my approach is closer to the school of building theory from observation of organizational processes or the relations between variables that they produce (Cyert & March, 1963). Whether and how these processes are grounded in specific individual cognitions or group processes is an

interesting question on reduction to lower-level reasoning that comes later in the research process. I will make some general remarks on the feasibility and desirability of such reduction exercises, but leave the specifics for later work.

In the following, I define each strategy and describe some of the evidence for it. I examine how these strategies may inform researchers interested in how organizations make decisions. I compare these strategies with other microfoundations and make suggestions on the utility of this specific proposal. In this discussion, I also comment on the architecture of a productive set of microfoundations. My goal is to provide an overview of the strategies and show their relation; thus I sacrifice depth. Interested readers should consult the cited works for the details on the theoretical structure and empirical evidence.

Momentum strategies

Momentum strategies repeat behaviors without examination of consequences. The term momentum was coined by Kelly and Amburgey (1991), who found that airlines tended to repeat the type of changes that they had done often in the past. Soon, momentum was also found in organizational merger activity (Amburgey & Miner, 1992) and in strategic and operational decisions by newspapers (Amburgey, Kelly, & Barnett, 1993). There is significant confirmation of these findings in later work (Dobrev, Kim, & Carroll, 2003; Dobrev, Kim, & Hannan, 2001; March, Schulz, & Zhou, 2000), including evidence that momentum is specific to events rather than a general increase in the rate of change, and that repetition of changes can occur very soon (Amburgey et al., 1993). When the repetition is quick or the lead time in knowing the full consequences of behaviors is long (as in mergers), it is easy to support the claim that observation of outcomes does not explain the repetition because it is not plausible that the action can produce information that would help the next decision. The same point can be made if the momentum is

seen through fundamentally different actions so that the trigger event is unlikely to have been informative, but in that case the researcher needs to explain how the one action (say, a merger) cannot produce information or capabilities that make another action (say, a market expansion) more beneficial for the organization. Thus there is some room for interpretation of the evidence, and indeed not all the evidence points towards momentum (Baum & Singh, 1996). Also, critics have raised a concern that the studies may over-interpret the evidence because they do not take into account unobserved heterogeneity in the propensity to make changes (Beck, Br derl, & Woywode, 2008).

A range of organizational commitment processes are thought to drive momentum strategies. March, Sproull, and Tamuz (1991) give a very clear depiction of how organizations can learn from samples of one (or fewer) because actions they have taken (or avoided) are interpreted and elaborated through storytelling. This can cause significant departures from past behaviors to create new organizational identities and action repertoires even in the presence of little or no outcome information. Amburgey and Miner (1992) similarly argue that major change events build competencies, and the sheer buildup of organizational competencies can cause momentum even if the outcome information is negative. In their view, positive outcome information strengthens the momentum but is not required for it.

Momentum strategies are also prominent in research on interorganizational networks. Relational embeddedness in alliances is when firms initiate additional alliances with current alliance partners (Gulati & Gargiulo, 1999). A number of causes have been suggested, including good outcomes from the current alliance, which would not be an instance of momentum but rather of feedback (see below). Relational embeddedness is also seen in research and development alliances, however, which have long-term and often ambiguous consequences

(Powell, White, Koput, & Owen-Smith, 2005). Absent positive outcome feedback, process sources of increased trust in the partner have been suggested as a more basic reason for relational embeddedness (Larson, 1992). Trust is a momentum process because it is created by increased commitments by the firm based on the belief that the partner's good behavior so far implies trustworthiness (Larson, 1992). In fact, deception requires trust, so the empirical distinction between a trustworthy partner and a good mimic is weak; undercutting the view that trust is purely an adaptive response to truthful signal. Thus, we may view the trust borne from preexisting alliances as a momentum process.

Other explanations for relational embeddedness have also been advanced, and an important suggestion is that it may reflect myopic search. It is easier to find an existing partner than a new one, especially if a set of search criteria related to partly-unobservable characteristics are in action, so new alliances through relational embeddedness just reflect how organizational decision makers search for alternatives (Li & Rowley, 2002). This alternative explanation is worth empirical consideration. Again the evidence is not clear because matching characteristics have powerful effects even when the network is controlled for (Mitsuhashi & Greve, 2009), but there is still little work on this issue. When myopic search is applied, the decision to stop search is based on whether the (short-term) consequences are judged to be satisfactory (Cyert & March, 1963), and hence myopic search contains an element of inference lacking in momentum strategies.

As this brief and selective tour of momentum strategies suggests, there are empirical observations suggesting momentum, but there are also disputes around the interpretation of these as indicating momentum, unobserved heterogeneity, or unobserved learning from feedback. The disputes are a good reason for momentum strategies to receive further theoretical and empirical

attention, because they center on the important issue of whether intrinsic tendency, path-dependent evolution, or performance-driven adaptation is the best model for organizational decision making. The simple observation that organizations are surprisingly quick to repeat actions, seemingly before validating their efficacy, thus connects to fundamental questions of decision making in organizations.

Suppose we subscribe to the view that momentum strategies are real and occur as a result of commitment processes in the absence of outcome information. If so, when are momentum strategies most likely? A possible set of conditions is that consequences are remote in time, have complex attribution, or have ambiguous evaluation criteria. However, even under such conditions organizations may use higher level strategies such as inferential strategies, so added conditions may be needed. Momentum strategies are simple and require low level of rationality, and one may speculate that they exist when the cost of more complex actions is high. Notably, because momentum strategies tend to extend strategic commitments already made, they are likely to be found in organizations in which the dominant coalition of managers has reached a strategic truce that is difficult to alter (Cyert & March, 1963). Such organizations will either follow their current strategy or incur high renegotiation costs, and may display significant momentum as a result.

The view of organizations as locked into a strategic truce may be an extreme interpretation of momentum strategies. Instead, we may consider whether environmental characteristics influence the prevalence of momentum strategies relative to higher-level strategies. Confusing environments do not generate outcome information that clearly tells managers that the current actions are flawed; as a result they may result in significant momentum. Resource rich environments generate outcomes that are positive on an absolute scale, though they may still be

negative relative to other organizations with even higher performance. If the organization engages in little comparison or the variance of positive outcomes across organizations is not great, it is likely to become locked into its initial choices (Levinthal & March, 1981). Thus momentum strategies are likely to be prevalent in environments that do not generate information that triggers the higher-level strategies. This suggests the possibility that firms in new industries are especially prone to momentum strategies because they operate in an environment with scarce and noisy information, and with short histories that give little data to compare information on performance that they may receive.

Feedback strategies

Feedback strategies continue and extend current actions when they are associated with successful outcomes and try alternatives when current actions are associated with unsuccessful outcomes. These attributions may be incorrect, as organizations can easily fall into traps of superstitious learning if actions they take coincide with positive or negative feedback that occurs for unrelated reasons (March, 1981). However, for organizational decision making it is the belief in a connection between action and feedback that matters rather than the actual causal link. Feedback strategies have been central in the bounded rationality view of organizations since Cyert and March (1963) defined problemistic search. Problemistic search is search for solutions to specific problems, and is characterized by simple rules of initially searching in the vicinity of the problem and the current actions, and gradually expanding search if solutions satisfying the performance criteria are not found.

There is now a significant record of findings showing feedback strategies across a range of behaviors (Gavetti, Greve, Levinthal, & Ocasio, 2012; Shinkle, 2012). When performance is below an aspiration level set by the performance of others or its own past, organizations engage

in mergers and acquisitions (Haleblian, Kim, & Rajagopalan, 2006), as well as change their market position (Greve, 1998; Park, 2007), growth rate (Desai, 2008; Greve, 2003b, 2008), pace of innovation launches (Giachetti & Lampel, 2010; Greve, 2003a), and strategic orientation (Audia, Locke, & Smith, 2000; Lant, Milliken, & Batra, 1992). Conversely, they maintain current practices when the performance is above the aspiration level. The evidence is particularly strong for behaviors that are consequential for the organization and controllable by top management, suggesting that the assumption that changes are made to solve problems is correct.

There is also evidence that performance on goals that affect lower levels of the organization affect behaviors closely related to those goals. A line of work on organizational accidents has shown clear effects of the past accident record consistent with a feedback strategy (Baum & Dahlin, 2007; Desai, 2010; Madsen & Desai, 2010), and similar relations between lower level goals and outcomes are obtained on quality (Rhee, 2009), personnel practices (Massini, Lewin, & Greve, 2005), and division-level innovations in diversified firms (Gaba & Joseph, 2012). Thus feedback strategies are not just associated with top management, they also scale to lower levels of the organization.

The sources of feedback strategies have been discussed by many authors. The original explanation in the behavioral theory of the firm involves organizations handling goal conflict and uncertainty by setting aspiration levels for goal variables rather than making tradeoffs among them, leading to a process of shifting attention among goal variables depending on which goal is below the aspiration level (Cyert & March, 1963). This leads to search for solutions when the performance is below the aspiration on a goal, and to stability when it is above. Taking a broader adaptive view, sampling the performance associated with different behaviors can be seen as a basic learning procedure that seeks rewarding behavioral patterns by repeating actions that

preceded good outcomes and avoiding actions that preceded poor outcomes (Denrell, 2005; Denrell & March, 2001). Individual level explanations range from simple behavioristic notions of reward-seeking to more sophisticated processes of forming impressions through sampling behaviors and updating beliefs until a clear ranking has been achieved (Fiske & Taylor, 1991). A final explanation involves risk taking. An increase in risk propensity as a result of performance below the aspiration level is seen in individual behaviors (Kahneman & Tversky, 1979; Lopes & Oden, 1999), and has been found in organizations as well (Fiegenbaum & Thomas, 1988; Miller & Chen, 2004).

The conditions that make feedback strategies more likely can be specified in contrast to those making momentum strategies likely. Whereas a lack of outcome information makes momentum likely, easily available outcome information encourages feedback strategies because feedback strategies require outcome information that can be attributed to earlier actions. More established industries and especially industries with easily available information for comparing firms should thus see much use of feedback strategies (e.g., Greve, 1998). But there are also some complications. First, feedback strategies require that the decision makers are in a proactive problem-solving mode rather than a defensive self-enhancement mode. There is sufficient evidence to suggest that self-enhancement interferes with feedback strategies, and this is especially likely if the decision maker is under self-threat and has high latitude to reinterpret the low performance (Mishina, Block, & Mannor, 2012). Also, feedback strategies are naturally backward looking, and it has been suggested that they can be replaced by inferential or anticipatory strategies if there is sufficient information to support planning (Gavetti & Levinthal, 2000). However, the strong evidence on feedback strategies from a broad range of contexts and behaviors suggests caution in limiting their scope much.

Inferential strategies

Inferential strategies are sensitive to information, just as feedback strategies are, but differ in that the information is not a direct success or failure signal regarding the organization's own actions. Instead, inferential strategies are built on interpreting events relating to other organizations as relevant to the focal organization's actions. The inference is not necessarily conscious and calculative. In fact, the best-studied inferential strategy is legitimation of management practices and organizational structures as they diffuse through an organizational field (DiMaggio & Powell, 1983). In this case, it is argued that the mechanism underlying the behaviors is not calculative rationality, but rather that the sheer frequency of instances observable to organizational actors or potential entrepreneurs create cognitive structures that make a specific action more salient. The wording inferential strategy is still valid as long as we keep in mind that it can be rote inference along the lines of "common things are good", which occurs prior to the point of choosing among the alternatives that enter the choice set as a result of their frequency. Thus inferential strategies include strategies that vary in the type of inference made and the complexity of the relation from an event to the organizational response.

It helps to start the discussion by the simplest form of inferential strategy, which is displayed in mimetic adoption of practices. Imitation of other organizations is a well-known phenomenon, and the best-known theoretical treatment treats it as a form of collective rationality (DiMaggio & Powell, 1983): organizations facing uncertainty on the best practice imitate others in order to find solutions with acceptable performance and little expense (see also Crawford & Knoer, 1981; Cyert & March, 1963). The inference behind the imitation is that there is information about the quality of alternatives in the choices of other organizations. This idea has since been formalized in a rational choice framework, which has yielded the insight that this

information quickly disappears when others also imitate because the mimetic process drives out the information content of the initial actions (Bikhchandani, Hirshleifer, & Welch, 1992). Thus inference occurs, but its informational basis is tenuous. Much research has examined mimetic behaviors, and has documented that it is found in actions that matter for organizational goal achievement, such as organizational structure (Burns & Wholey, 1993; Lee & Pennings, 2002), market entry and exit (Greve, 1995; Haveman, 1993), plant localization (Henisz & Delios, 2001), and production technologies (Greve, 2009; Levin, Levin, & Meisel, 1987).

If some form of inference is behind these learning patterns, then a number of predictions beyond imitation of frequent behaviors also follow. Many of these have been tested and supported. If an adopting firm does well afterwards, it is more likely to be imitated by other firms (Haunschild & Miner, 1997). If the new practice performs poorly, the imitation is slowed down when outcome information becomes available (Gaba & Bhattacharya, 2011). Indeed, failures generally have strong effects on other firms, as firms tend to avoid the specific actions of firms that have failed or undergone crises and also engage in more complex forms of inferential learning in response to failures (Kim & Miner, 2007; Miner, Kim, Holzinger, & Haunschild, 1999). Conversely, imitation is driven by a higher assessed value after observing others adopt (Rao, Greve, & Davis, 2001).

We can also find inferential strategies that appear to reflect more complex inferences than those involved in imitation. Here, some more caution is in order because the researcher is making inferences about inferences, often with less systematic data than what a typical study of imitation has. There are still findings that give interesting leads. Gavetti and Rivkin (2007) report on how the search engine firm Lycos made a strategic reorientation after integrating information on its own lack of success and the growth of Yahoo!, and using this information to make

inferences on the best strategic position. Wal-Mart appears to handle anti-chain store protests through a procedure of filing store proposals and gauging the extent of protests before deciding whether to open a store (Ingram, Yue, & Rao, 2010). The Wal-Mart case is especially interesting because Wal-Mart not only interprets information; it also uses proposals as a probing mechanism to generate information useful for making inferences.

Inferential strategies require managers to be open to environmental stimuli and fairly unconstrained in the ability to make changes. The prevalence of inferential strategies in new industries and during major technology changes is thus not surprising; such events are associated with substantial uncertainty on the best action, leading managers to rely on inference from observation of others (Aldrich & Fiol, 1994; DiMaggio & Powell, 1983). In new industries, an additional source of flexibility is the relative youth of the firms that participate, which gives them lower commitment to past strategies and less rigid structures (Barron, West, & Hannan, 1995). Inferential strategies may be limited by inability to observe what others do, as seen in the late adoption of highly successful innovations by firms that are located outside geographical clusters of similar firms (Greve, 2009), ultimately leading to a less friendly environment for firm founding and growth outside clusters (Audia, Freeman, & Reynolds, 2006).

Anticipatory strategies

Anticipatory strategies involve prediction of the actions of others and choice of actions that respond optimally to this prediction. This is the highest level of rationality among our behavioral strategies. It includes rational choice based on the rewards of different alternatives, as well as game theoretical ideas of actions taken when other actors and the focal actors reciprocally influence each other's outcomes. Although anticipatory strategies are clearly associated with rational choice, they can be compatible with bounded rationality and learning. Learning in games

is an active research tradition, and there are suggestions that game structures differ in the extent to which learning leads to optimal choice of strategy (Camerer & Ho, 1999; Crawford, 2001; Erev & Roth, 1998), just as the adaptation research has found that "reward landscapes" differ in the extent to which learning leads to optimal choices (Kauffman, 1993).

One area of research that has produced evidence of anticipatory strategies is work on mutual forbearance among firms that meet each other as rivals in multiple markets. There is much evidence that firms with multimarket contact forbear against competing, as seen through higher prices to the customers (Evans & Kessides, 1994; Hannan & Prager, 2004) and in higher profits and lower exit rates for the multimarket firms (Barnett, 1993; Barnett, Greve, & Park, 1994). These findings are indicative of anticipatory strategies because mutual forbearance involves an expectation that it will be reciprocated, but they may also be results of learning. Indeed, there is evidence that firms with multimarket contact do not consistently respond as predicted by the theory, suggesting different knowledge of this strategy or some other source of heterogeneity in responses (Smith & Wilson, 2001).

Although there is some evidence of anticipation in showing that firms with multimarket contact act to exploit the opportunities that this structure gives, it would be stronger evidence to find that firms establish in ways that set up multimarket contact with others. This would be a two-step strategy that first establishes a market structure that in turn will be used to weaken competition. In fact, market entry patterns are consistent with the seeking out of multimarket contact, so this level of anticipation is also shown (Baum & Korn, 1996; Fuentelsaz & Gomez, 2006; Haveman & Nonnemaker, 2000). There is even evidence that firms compete more strongly than mutual forbearance suggests when there is a lower chance that their competitors will detect it, so they rationally cheat (Greve, 2006).

There are also other forms of anticipatory strategies. Network research has produced evidence that firms apply anticipatory strategies of seeking out network positions that in turn will give them higher returns. A simple version is when firms seek out collaborations with individual partners with resources that are needed for a productive collaboration (Gulati & Gargiulo, 1999). Although the main thrust in alliance research has been investigation of the momentum strategy of relational embeddedness, the resource compatibility finding has been verified a number of times (Mitsuhashi & Greve, 2009; Rothaermel & Boeker, 2008; Vissa, 2011). One might argue that this is a fairly simple form of anticipatory strategy, as managers need only direct observation of what resources they lack and what resources other firms have at hand in order to pursue collaboration. But more complex anticipatory strategies are also seen in network research.

A position in the network that allows brokerage between otherwise separated organizations permits the focal organization to benefit from superior information access and ability to identify and assemble beneficial exchange opportunities (Burt, 1992). This is a complex strategy because it requires some understanding of the network structure, and it is difficult to implement if many others also pursue the same strategy (Buskens & van de Rijt, 2008). If this anticipatory strategy is in use, organizations with low access to brokerage opportunities may be expected to seek better access, while organizations with better opportunities will seek to protect their current position. In fact, upward striving of low-access organizations has been documented empirically (Baum, Shipilov, & Rowley, 2003; Ozcan & Eisenhardt, 2009), while high-access organizations seem tolerant of ties with those in less favorable positions (Baum et al., 2003; Shipilov, Li, & Greve, 2011). The reason for this asymmetry may be that the best connected organizations have relatively enduring status positions that allow them to extract benefits from relations with others (Castellucci & Ertug, 2010), so the stakes are lower for them than for the low-status

organizations. Also, there is evidence indicating attempts to protect high-access positions at the intra-organizational level (Zaheer & Soda, 2009). The asymmetry is still a puzzle that calls for further analysis, and resolution of it may help researchers understand the level of anticipation that actually enters into this strategy. More generally, understanding anticipatory strategies in networks are important because these strategies have important consequences for network evolution, and specifically for whether brokerage positions can be maintained or will be diluted by others who are also seeking brokerage positions (Buskens & van de Rijt, 2008).

Anticipatory strategies are the highest level of decision making if we view the organization as a stylized decision maker, which is a good reason for asking what conditions make such strategies likely for boundedly rational decision makers. For strategies that require some joint action by participating actors, like mutual forbearance, the question is even more salient than for strategies that can be done unilaterally by a focal organization, such as network tie initiation.[3] Yet these strategies are observed, at least as seen through organizational behaviors. Because they are based on repeated interaction, there is some potential for learning mutual forbearance strategies gradually, and also for hidden communications among firms engaged in alliances and consortia (Scott, 1993; Wernerfeldt, 1985). For anticipatory strategies that require one-shot identification and exploitation of an opportunity, like moves to obtain favorable positions in interorganizational networks or investments in uncertain technologies, insight and analytical making may be required (Gavetti, 2012). Although there is not enough evidence on anticipatory strategy to serve as a foundation for speculation on the conditions, it is likely that anticipatory strategies occur under some subset of the conditions that yield inferential strategies. What is needed in addition is recognition that the organization is acting as a member of an interdependent ecology of others,

[3] Actual tie initiation is a dyadic event where the tie recipient accepts the approach, but seeking ties with high-resource others can be done unilaterally.

which may be easier in a small-numbers situation. This condition is important because unrecognized interdependence will lead to different behavioral strategies (March, 1981).

Multiple Strategies

One might ask whether organizations apply a range of different strategies instead of just one. Answering that question at the level of individual organizations requires careful tracing of the actions of each one, which would be an onerous task, but with significant potential for interesting findings. It is easier to test whether a blend of strategies can be detected in a population of organizations. Such a finding does not necessarily imply that each member of the population applies a blend (there may be different strategic types present), but it shows co-existence in the population and suggests that blending at the organization level is possible. Some studies have tested for different strategies, which has given interesting findings.

In work on mutual forbearance, studies of whether firms establish additional contacts with each other as mutual forbearance theory predicts have also looked for the presence of simpler behavioral strategies that could also explain the entry behavior. Some studies have found that the anticipatory strategy of multi-market contact has additional explanatory power controlling for the inferential strategy of entering where others do and the momentum strategy of extending past entry patterns (Greve, 2000; Haveman & Nonnemaker, 2000; Korn & Baum, 1999). In these studies, the lower-level strategies explain the data well, but there is additional explanatory power by the anticipatory strategy. A similar hierarchy of testing is often seen in network studies, where the momentum strategy is taken as a baseline when testing for inferential or anticipatory strategies (e.g., Powell et al., 2005; Rothaermel & Boeker, 2008). There too momentum strategies are found to have strong explanatory power, but inferential and anticipatory strategies have additional explanatory power. The findings point strongly toward either a blend of

strategies in a population or use of multiple strategies by individual organizations.

The suggestion that organizations might be applying multiple behavioral strategies is intriguing because it matches one of our intuitions about organizations. As complex systems composed of multiple individuals and multi-person, temporally dispersed decision opportunities (e.g., Cohen, March, & Olsen, 1972), they can incorporate multiple paths from a given set of internal and external states to a set of outcomes. Sometimes they show evidence of anticipatory strategy because there is one decision maker or a decision-making group that makes a strategy and ensures implementation. Sometimes they show evidence of simple momentum strategies because actions set in motion commitment processes that influence subsequent actions in ways that the decision makers do not fully understand. Creeping commitment and anticipatory thinking can coexist, and so can the other behavioral strategies mentioned here. The tendency to focus on only one of these in a given research stream likely reflects deliberate (i.e., parsimony) or inadvertent (i.e., a narrow paradigm) limitations in the research rather than features of the organizations that are being studied.

Behavioral Strategies and Decisions

I have outlined these behavioral strategies by drawing on examples of systematic behaviors shown by organizations. This approach is similar to how Cyert and March (1963) built a set of concepts and relations through examination of data. It maintains the commitment to empirical observations in theory testing and refinement that is intrinsic to management research, and ensures that each behavioral strategy has a firm empirical footing. The comparison ends there; these four strategies lack the texture that Cyert and March (1963) provided, and are mostly a scaffolding for building future research. There are substantial theoretical and empirical gaps to be filled, and the exercise of going through these behavioral strategies may have been useful for

pointing out what some these gaps are.

First, we tend to think of organizational behaviors as resulting from decisions, so if we are able to document a systematic set of behaviors, a reasonable next step is observation of the decision making processes that produce them. At least a stylized model of decision-making processes or decision-maker cognitions that produces the outcomes can be worked out for each of the four behavioral strategies, and in some cases evidence for the process is also found, as in some work on feedback strategies (Audia et al., 2000). In the cases lacking direct evidence on the process, there remains the question of whether a stylized individual decision maker is enough to understand how the behavioral strategies are generated. A fuller theoretical account would also have an aggregation process that explains the transition from individual through group to organizational decision making. An example is the work on feedback strategies that has established a similarity between organizational changes and individual risk taking, and also developed theory on how the individual risk preferences are preserved in group decision making and combined with organizational search processes (e.g., Greve, 1998: 82-84). This additional step represents integration rather than just reasoning by analogy across levels of analysis, thus giving a more complete theoretical structure.

Because these behavioral strategies are robust empirically, and possibly distinct in their implications for organization level processes, the aggregation from lower levels of analysis to organization level behavioral strategies has substantial theoretical and empirical interest. Indeed, it is fair to view the aggregation step as essential for a microfoundation (Felin & Barney, 2013), because micro-assumptions are interesting to the extent that they produce higher level predictions. In doing so, however, it is important to keep in mind two features of such attempts to explain links between theory and evidence at a higher level of analysis to theory at a lower level

of analysis. First, disaggregation through stepping from a macro theory to micro foundations brings up the question of uniqueness of the disaggregation, as one may find multiple micro models that produce the same macro result. A classic example is the multiple micro models that produce the exact same paths of diffusion of innovations (Bartholomew, 1982). This is why disaggregation cannot just be a theoretical exercise; it needs to be followed with a comparative testing of the potential explanations for the macro model. Second, disaggregation requires making specific assumptions on how the micro decisions and macro outcomes link, and these may result in theory that it is less generalizable than the original macro model.

Additional Behavioral Strategies

Are there other behavioral strategies as well? It makes sense to ask this question, especially because these strategies were identified by induction from empirical work and are not constructed as a set of logically exhaustive categories. Two types of extensions of this scheme can be made. The first is that subdivisions of these strategies can be made through refinement of their definitions. This step is always possible, as any categorization scheme can be altered to fit the purpose of a researcher. In choosing the fineness of this categorization, the benefits of the added precision need to be weighed against the costs of potentially lower ability to compare across different literatures. I chose a high-level categorization because these four behavioral strategies offer a comparative view across different literatures and appear to have distinct implications for organizational decision making.

The second is that qualitatively different behavioral strategies may be identified and added to these four. The strategies identified here do not come close to exhausting the set of logically possible strategies, leaving abundant room for discovery of additional strategies. Discovery of a strategy through empirical observation requires only that a strategy can be identified from

systematic observation of organizations and shown to have a definition that is not already covered by these four. Because organizations have a broad range of behavioral patterns, there is a good chance that further work can add to this repertoire of strategies.

Discovery of one or more additional strategies may also lead to a finer classification of the behavioral strategies. Here, the categorization mainly relies on the observation that they can be ordered through the degree of intentionality and anticipation involved, and hence represent different levels of rationality for the organization (metaphorically speaking, as the concept of rationality does not fit collective actors such as organizations). One may speculate that other dimensions of classifications such as the type of information used in each strategy may prove informative.

Alternative Microfoundations

Because there are different forms of microfoundations, management theory cannot be reduced to a single set of microfoundations. Ideas on levels of analysis, mechanisms, and actor-hood are in principle independent pieces that can be assembled in multiple ways. Not all the potential assemblies are equally appealing to scholars. For example, scholars with a high-cognition view of the individual sometimes criticize or seek to modify evolutionary accounts (Felin & Foss, 2011; Gavetti, 2005), which may reflect a view that evolution as a preferred mechanism is incompatible with individual actor-hood. Seen this way, the conflict may be more apparent than real because it is mainly a matter of how the current evolutionary explanation handles individual actor-hood; not whether these conceptions can be combined. However, the critique can also reflect a view that the evolutionary mechanism is less preferable than mechanisms that give individual cognitions a greater role. Seen this way, the conflict is real because it is a choice between different preferred theoretical mechanisms, not a comment on the

esthetics of placing thinking individuals into an evolutionary framework. Clarity about the stakes in discussions on individual cognition versus evolutionary mechanisms thus requires a statement of what type of microfoundation is being discussed.

It follows that the most relevant comparisons of behavioral strategies are with microfoundations concerning alternative theoretical mechanisms at the meso level. Here the closest alternative is clearly the view that combines the evolutionary mechanism with organizational routines as a fundamental building block (Nelson & Winter, 1982; Zollo & Winter, 2002). Superficially routines resemble behavioral strategies, but they are typically at a more micro level of analysis and more specific in content. However, at a deeper level routines do the organizational work while behavioral strategies modify it. Routines involve evolutionary theorizing, which has a greater selection component than the learning-based explanations in the behavioral strategies that have been discussed here. Thus there are differences in the preferred mechanism in the theoretical explanation. However, the contrast between these two views should not be exaggerated. There is a substantial literature invoking learning mechanisms that takes the routine as its basic unit of analysis (e.g., Becker, 2008; Feldman & Pentland, 2003; Pentland & Rueter, 1994). Learning explanations have been integrated comfortably into work taking an overall evolutionary view (Barnett et al., 1994; Barnett & Hansen, 1996; Winter & Szulanski, 2001). Although this is a broad characteristic that does not do full justice to the interface between the routines view and the behavioral strategies view, the difference often boils down to routines being fundamental to capabilities and hence what organizations *can* do, while behavioral strategies modify choices and hence what organizations *seek* to do.

An alternative comparison is with microfoundations centered on individual thinking and action. This would fit recent calls for microfoundations at this level (Felin & Foss, 2005; Gavetti,

2005), but is more complicated because there are multiple forms of individual level microfoundation and multiple versions within each form. An assertion of individual actor-hood is compatible with the behavioral strategies view, which allows individual actor-hood while focusing on organization level explanations. A prescriptive to prefer the individual level of analysis is in conflict with the behavioral strategies view because behavioral strategies describe what organizations do rather than individuals. Organizational scholars will be comfortable choosing the behavioral strategies position to the extent that they think that the field is defined by an interest in discovering and explaining regularities in organizational behavior. There is still room for overlap and communication between the individual level of analysis and the behavioral strategies view because scholars interested in the individual level of analysis are usually engaged in a reductionism step: they want to explain behaviors at a higher level of analysis by a mechanism at a lower level of analysis. Reductionism requires a higher-level behavior to explain, however, which in an empirically oriented science like management needs to be systematic patterns of behavior like the behavioral strategies described here. Although proponents of the individual level of analysis will find these behavioral strategies to be incomplete theoretical accounts, they depend on the behavioral strategies for observations and puzzles for their preferred form of theoretical account.

A question that follows naturally is whether the step of reducing to a set of lower-level (possibly individual) micro foundations is needed to complete the theoretical explanation. Here scholars have different views, and these correspond to a broader debate in the sciences on the limitations of reductionism. The ability to reduce a phenomenon to a lower-level set of rules and some simple aggregation principles is often very insightful; for example a routine based view of firms can be seen as a reductionist explanation of firm capabilities that implies certain

predictions (Nelson & Winter, 1982). However, the statement that reducing a higher level phenomenon to lower level mechanisms is desirable does not imply that reductionism is always a goal: some phenomena that can be understood well at one level may not be possible to reduce meaningfully. These typically come into the category of phenomena with *emergent properties*, meaning that there are interactions among parts that can only be faithfully modeled at the higher level. For example, the interpretation and story-telling processes that have been suggested as a mechanism contributing to organizational momentum (March et al., 1991) may be emergent properties that occur at the level of the organization. Many institutional phenomena are emergent properties that involve interactions of complex institutional roles or cultural mechanisms of causation (Jepperson & Meyer, 2011). In such cases, attempts to build a reductionist explanation typically involve simple individual agents with aggregation rules that are so complex that they essentially mimic the emergent property. This is not a true reductionist explanation, as reductionism relies on drawing insights from the combination of the properties of the individual agent and a simple rule for aggregating behaviors. A true reductionist explanation may not exist for phenomena with emergent properties (e.g., Gould, 2003: 222-224). Thus the correct microfoundation for any phenomenon, including these behavioral strategies, is one that reduces until the top layer of emergent properties, but no further. The correct level of analysis is found in the course of research rather than specified as a theory-building directive.

These considerations are important for attempts to build microfoundations for organization theory and strategy because they clarify the task facing the researcher. To make the point even clearer, consider why rational choice has been adopted as the primary mode of explanations by so many scholars in economics and related fields. Is it because full rationality is such a good model of individual decision making? The empirical shortcomings of this model are well known

by now, and suggest a negative answer to this question. A potential reply, used by many, is that full rationality is good enough as a first approximation. But the same would be true of many other models, including empirically supported ones such as prospect theory (in the context of risk taking), so that is not an acceptable answer either. The charm of rationality does not lie in its micro-assumptions on the individual decision maker, but rather in the ease of melding them with aggregation principles that readily produce predictions, often non-obvious ones. In current scholarship, rational choice remains popular because of game theory, not the other way around.[4]

This means that new microfoundations require the equivalent of a game theory, that is, a set of aggregation principles explaining how individual actors interact to produce a set of non-trivial predicted behaviors. Thus, Van de Ven's (2013) call for theory built on assumptions of reasonable behavior is viable to the extent that it can be matched with aggregation principles that generate macro predictions from its micro assumptions, and Van de Ven (2013) makes some suggestions on how this can be done. The most promising may be the similarity with the logic of appropriateness as discussed in political institutionalism (March & Olsen, 1989). Foss and Lindenberg (2013) face the same challenge when they advance goal-framing theory as a potential microfoundation, thus proposing a psychological anchor as well as deriving implications for value creation. However, in both of these treatments the aggregation principles lack the combination of specificity in approach and generalizability across contexts that a framework such as game theory offers. This may be a necessary cost of realism in the microfoundations, but it could also be a shortcoming that can be overcome with further theorizing.

Both proposals need a reply to the critique leveled by Winter (2013): microfoundations

[4] Indeed, game theory is now less dependent on rationality because of new modeling frameworks such as evolutionary games (Samuelson, 1997) and games with learning (Fudenberg & Levine, 1998). The window of opportunity for papers criticizing rational choice is narrowing, as they are losing relevance as a result of the diminished role of individual rationality in formal theory building.

may need to include a decision maker who uses different decision-making modes (habit, impulse, or deliberation) at different times. Indeed, we might need more decision-making modes than those described by Winter (2013), as rational and reasonable decision making are both deliberative, but differ significantly from each other. Thus the theory might need conditions on the scope of each set of microfoundations so that predictions involving deliberation, for example, are only made when the individual indeed deliberates. But that seems like an awkward solution compared to the alternative of making theory that does not attempt to build from the decision maker up, but rather has a set of aggregation principles on how an organization of flexible decision makers would act. As rational choice theory has shown, shortcomings in the microfoundations can be overcome by good aggregation principles. Thus we are left with the puzzle of whether the key step in building microfoundational theory is the formulation of the microfoundational assumptions or the formulation of the aggregation principle that produces more macro level predictions.

Conclusion

This proposal for behavioral strategies as a microfoundation in management does not create a new microfoundation, nor does it aim to do so. Behavioral strategies are already being investigated with considerable excitement by multiple communities of scholars. It is still important to identify and name this movement, because doing so opens up new opportunities. The separation of different communities of scholars who study the same behavioral strategies holds back research by making it less cumulative. Thus it is by design that the behavioral strategies examined here have examples from different research traditions that are viewed as separate, such as the work on momentum and on relational embeddedness. Although the work within each behavioral strategy encompasses a range of approaches, there are overlaps in the

basic approach and findings, and it can benefit from more explicit comparison and dialogue. For someone contributing to research in any of these behavioral strategies, knowing that multiple research traditions are working on the same broad topic is an opportunity for richer comparison of findings and assembly of ideas to build new theory.

The second opportunity lies in the extensions and comparisons of behavioral strategies that can be done when a set of them are proposed. If we are interested in how organizations adapt, then it helps to investigate the relative occurrence of different behavioral strategies and to explore their adaptive implications. If we are interested in how individual cognition and choice influences organizations, then a serious examination of how the observed behavioral strategies may be linked to lower level processes is in order. Everything starts by knowing the behavioral strategies, however, and even at this basic level we still have much work to do. Research on behavioral strategies thus presents opportunities for researchers across a wide spectrum of interests. It is a movement that has not yet been identified and formulated clearly enough to crystallize around a common agenda, but it seems to be getting close. If this essay can help identify, focus, and encourage research on behavioral strategies, its goal will be met.

References

Aldrich, H. E. & Fiol, C. M. 1994. Fools rush in? The institutional context of industry creation. ***Academy of Management Review***, 19(4): 645-670.

Amburgey, T. L. & Miner, A. S. 1992. Strategic Momentum: The effects of repetitive, positional and contextual momentum on merger activity. ***Strategic Management Journal***, 13: 335-348.

Amburgey, T. L., Kelly, D., & Barnett, W. P. 1993. Resetting the clock: The dynamics of organizational change and failure. ***Administrative Science Quarterly***, 38(March): 51-73.

Audia, P. G., Locke, E. A., & Smith, K. G. 2000. The paradox of success: An archival and a laboratory study of strategic persistence following a radical environmental change. ***Academy of Management Journal***, 43(5): 837-853.

Audia, P. G., Freeman, J. H., & Reynolds, P. 2006. Organizational foundings in community context: Instrument manufacturers and their interrelationship with other organizations. ***Administrative Science Quarterly***, 51(September): 381-419.

Barnett, W. P. 1993. Strategic deterrence among multipoint competitors. ***Industrial and Corporate Change***, 2(2): 249-278.

Barnett, W. P., Greve, H. R., & Park, D. Y. 1994. An evolutionary model of organizational performance. ***Strategic Management Journal***, 15(S2): 11-28.

Barnett, W. P. & Hansen, M. T. 1996. The Red Queen in organizational evolution. ***Strategic Management Journal***, 17(Summer Special Issue): 139-157.

Barron, D. N., West, E., & Hannan, M. T. 1995. A time to grow and a time to die: Growth and mortality of credit unions in New York City, 1914-1990. ***American Journal of Sociology***, 100(2): 381-421.

Bartholomew, D. J. 1982. ***Stochastic Models for Social Processes***. New York: Wiley.

Baum, J. A. C. & Korn, H. J. 1996. Competitive dynamics of interfirm rivalry. ***Academy of Management Journal***, 39(2): 255-291.

Baum, J. A. C. & Singh, J. V. 1996. Dynamics of organizational responses to competition. ***Social Forces***, 74(4): 1261-1297.

Baum, J. A. C., Shipilov, A. V., & Rowley, T. J. 2003. Where do small worlds come from? ***Industrial and Corporate Change***, 12(4): 697-725.

Baum, J. A. C. & Dahlin, K. B. 2007. Aspiration performance and railroads' patterns of learning from train wrecks and crashes. ***Organization Science***, 18(3): 368-385.

Beck, N., Br derl, J., & Woywode, M. 2008. Momentum or deceleration? Theoretical and methodological reflections on the analysis of organizational change. ***Academy of Management Journal***, 51(3): 413-435.

Becker, M. C. (Ed.). 2008. ***Handbook of Organizational Routines***. Cheltenham, UK: Edward Elgar.

Bikhchandani, S., Hirshleifer, D., & Welch, I. 1992. A theory of fads, fashion, custom, and cultural change as informational cascades. ***Journal of Political Economy***, 100(5): 992-1026.

Burns, L. R. & Wholey, D. R. 1993. Adoption and abandonment of matrix management programs: Effects of organizational characteristics and interorganizational networks. ***Academy of Management Journal***, 36: 106-138.

Burt, R. S. 1992. ***Structural holes: The social structure of competition***. Cambridge, MA: Harvard University Press.

Buskens, V. & van de Rijt, A. 2008. Dynamics of networks if everyone strives for structural holes. ***American Journal of Sociology***, 114(2): 371-407.

Camerer, C. & Ho, T. H. 1999. Experience-weighted attraction learning in normal form games. ***Econometrica***, 67(4): 827-874.

Castellucci, F. & Ertug, G. 2010. What's in it for them? Advantages of higher-status partners in exchange relationships. ***Academy of Management Journal***, 53(1): 149-166.

Cohen, M. D., March, J. G., & Olsen, J. P. 1972. A garbage can model of organizational choice. ***Administrative Science Quarterly***, 17: 1-25.

Crawford, V. P. & Knoer, E. M. 1981. Job Matching with Heterogeneous Firms and Workers. ***Econometrica***, 49(2): 437-450.

Crawford, V. P. 2001. Learning dynamics, lock-in, and equilibrium selection in experimental coordination games. In U. Pagano & A. Nicita (Eds.), ***The Evolution of Economic Diversity***: 133-163. London: Routledge.

Cyert, R. M. & March, J. G. 1963. ***A behavioral theory of the firm***. Englewood Cliffs, NJ: Prentice-Hall.

Denrell, J. & March, J. G. 2001. Adaptation as information restriction: The hot stove effect. ***Organization Science***, 12(5): 523-538.

Denrell, J. 2005. Why Most People Disapprove of Me: Experience Sampling in Impression Formation. ***Psychological Review***, 112(4): 951-978.

Desai, V. M. 2008. Constrained Growth: How Experience, Legitimacy, and Age Influence Risk Taking in Organizations. ***Organization Science***, 19(4): 594-608.

Desai, V. M. 2010. Rule Violations and Organizational Search: A Review and Extension. ***International Journal of Management Reviews***, 12(2): 184-200.

DiMaggio, P. J. & Powell, W. W. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. ***American Sociological Review***, 48: 147-160.

Dobrev, S. D., Kim, T.-Y., & Hannan, M. T. 2001. Dynamics of niche width and resource partitioning. ***American Journal of Sociology***, 106(5): 1299-1337.

Dobrev, S. D., Kim, T.-Y., & Carroll, G. R. 2003. Shifting gears, shifting niches: Organizational inertia and change in the evolution of the U.S. automobile industry, 1885-1981. ***Organization Science***, 14(3): 264-282.

Erev, I. & Roth, A. E. 1998. Predicting how people play games : Reinforcement learning in experimental games with unique, mixed strategy equilibria. ***American Economic Review***, 88(4): 848-881.

Evans, W. N. & Kessides, I. N. 1994. Living by the "Golden Rule": Multimarket contact in the U.S. airline industry. ***Quarterly Journal of Economics***, 109(May): 341-366.

Feldman, M. S. & Pentland, B. T. 2003. Reconceptualizing Organizational Routines as a Source of Flexibility and Change. ***Administrative Science Quarterly***, 48(1): 94-118.

Felin, T. & Barney, J.B. 2013. Microfoundations of organization and strategy: Half-truths, truths and future directions. ***Academy of Management Perspectives***, 27 (2).

Felin, T. & Foss, N. J. 2005. Strategic organization: a field in search of micro-foundations. ***Strategic Organization***, 3(4): 441-455.

Felin, T. & Foss, N. J. 2011. The endogenous origins of experience, routines, and organizational capabilities: The poverty of stimulus. ***Journal of Institutional Economics***, 7(2): 231-256.

Fiegenbaum, A. & Thomas, H. 1988. Attitudes towards risk and the risk return paradox: Prospect theory explanations. ***Academy of Management Journal***, 31: 395-407.

Fiske, S. T. & Taylor, S. E. 1991. ***Social Cognition***. New York: McGraw-Hill.

Foss, N. J. & Lindenberg, S. 2013. Micro-foundations for strategy: A goal-framing perspective on the drivers of value creation. ***Academy of Management Perspectives***, 27(2).

Fudenberg, D. & Levine, D. 1998. ***The Theory of Learning in Games***. Boston: MIT Press.

Fuentelsaz, L. & Gomez, J. 2006. Multipoint competition, strategic similarity and entry into geographic markets. ***Strategic Management Journal***, 27(5): 477-499.

Gaba, V. & Bhattacharya, S. 2011. Aspirations, innovations, and corporate venture capital: A behavioral perspective. ***Strategic Entrepreneurship Journal***, forthcoming.

Gaba, V. & Joseph, J. 2012. Corporate structure and performance feedback: Aspirations and adaptation in M-Form Firms. ***Organization Science***, forthcoming.

Gavetti, G. & Levinthal, D. A. 2000. Looking forward and looking backward: Cognitive and experiential search. ***Administrative Science Quarterly***, 45(March): 113-137.

Gavetti, G. 2005. Cognition and Hierarchy: Rethinking the Microfoundations of Capabilities' Development. ***Organization Science***, 16(6): 599-617.

Gavetti, G. & Rivkin, J. W. 2007. On the origin of strategy: Action and cognition over time. ***Organization Science***, 18(3): 420-439.

Gavetti, G. 2012. Toward a behavioral theory of strategy. ***Organization Science***, 23(1): 267-285.

Gavetti, G., Greve, H. R., Levinthal, D. A., & Ocasio, W. 2012. The Behavioral Theory of the Firm: Assessment and Prospects. ***Academy of Management Annals***, forthcoming.

Giachetti, C. & Lampel, J. 2010. Keeping both eyes on the competition: Strategic adjustment to multiple targets in the UK mobile phone industry. ***Strategic Organization***, 8(4): 347-376.

Gould, S. J. 2003. ***The Hedgehog, the Fox, and the Magister's Pox: Mending the Gap between Science and the Humanities***. Cambridge, MA: Belknap/Harvard University Press.

Greve, H. R. 1995. Jumping ship: The diffusion of strategy abandonment. ***Administrative Science Quarterly***, 40(September): 444-473.

Greve, H. R. 1998. Performance, aspirations, and risky organizational change. ***Administrative Science Quarterly***, 44(March): 58-86.

Greve, H. R. 2000. Market niche entry decisions: Competition, learning, and strategy in Tokyo banking, 1894-1936. ***Academy of Management Journal***, 43(5): 816-836.

Greve, H. R. 2003a. A behavioral theory of R&D expenditures and innovation: Evidence from shipbuilding. ***Academy of Management Journal***, 46(6): 685-702.

Greve, H. R. 2003b. Investment and the behavioral theory of the firm: Evidence from shipbuilding. ***Industrial and Corporate Change***, 12(5): 1051-1076.

Greve, H. R. 2006. The intent and extent of multimarket contact. ***Strategic Organization***, 4(3): 249-274.

Greve, H. R. 2008. A behavioral theory of firm growth: Sequential attention to size and performance goals. ***Academy of Management Journal***, 51(3): 476-494.

Greve, H. R. 2009. Bigger and safer: The diffusion of competitive advantage. ***Strategic Management Journal***, 30(1): 1-23.

Gulati, R. & Gargiulo, M. 1999. Where do interorganizational networks come from? ***American Journal of Sociology***, 104(5): 1439-1493.

Haleblian, J., Kim, J.-Y. J., & Rajagopalan, N. 2006. The influence of acquisition experience and performance on acquisition behavior: Evidence from the U.S. commercial banking industry. ***Academy of Management Journal***, 49(2): 357-370.

Hannan, T. H. & Prager, R. A. 2004. The competitive implications of multimarket branch banking. ***Journal of Banking and Finance***, 28(8): 1889-1914.

Haunschild, P. R. & Miner, A. S. 1997. Modes of interorganizational imitation: The effects of outcome salience and uncertainty. ***Administrative Science Quarterly***, 42(September): 472-500.

Haveman, H. A. 1993. Follow the leader: Mimetic isomorphism and entry into new markets. ***Administrative Science Quarterly***, 38(4): 593-627.

Haveman, H. A. & Nonnemaker, L. 2000. Competition in multiple geographic markets: The impact on growth and market entry. ***Administrative Science Quarterly***, 45(June): 232-267.

Henisz, W. J. & Delios, A. 2001. Uncertainty, imitation and plant location: Japanese multinational corporations, 1990-1996. ***Administrative Science Quarterly***, 46(September): 443-475.

Ingram, P., Yue, L. Q., & Rao, H. 2010. Trouble in store: Probes, protests, and store openings by Wal-Mart, 1998-2007. ***American Journal of Sociology***, 116(1): 53-92.

Jepperson, R. & Meyer, J. W. 2011. Multiple Levels of Analysis and the Limitations of Methodological Individualisms. ***Sociological Theory***, 29(1): 54-73.

Kahneman, D. & Tversky, A. 1979. Prospect theory: An analysis of decision under risk. ***Econometrica***, 47(2): 263-291.

Kauffman, S. A. 1993. ***The Origins of Order: Self-organization and Selection in Evolution***. Oxford: University of Oxford Press.

Kelly, D. & Amburgey, T. L. 1991. Organizational inertia and momentum: A dynamic model of strategic change. ***Academy of Management Journal***, 34: 591-612.

Kim, J.-Y. J. & Miner, A. S. 2007. Vicarious learning from the failures and near-failures of others: Evidence from the U.S. commercial banking industry. ***Academy of Management Journal***, 50(3): 687-714.

Korn, H. J. & Baum, J. A. C. 1999. Chance, imitative, and strategic antecendents of multimarket contact. ***Academy of Management Journal***, 42(2): 171-193.

Lant, T. K., Milliken, F. J., & Batra, B. 1992. The role of managerial learning and interpretation in strategic persistence and reorientation: An empirical exploration. ***Strategic Management Journal***, 13(8): 585-608.

Larson, A. 1992. Network dyads in entrepreneurial settings: A study of the governance of exchange relationships. ***Administrative Science Quarterly***, 37(March): 76-103.

Lee, K. & Pennings, J. M. 2002. Mimicry and the market: Adoption of a new organizational form. ***Academy of Management Journal***, 45(1): 144-162.

Levin, S. G., Levin, S. L., & Meisel, J. B. 1987. A dynamic analysis of the adoption of a new technology: The case of optical scanners. ***The Review of Economics and Statistics***, 69: 12-17.

Levinthal, D. A. & March, J. G. 1981. A model of adaptive organizational search. ***Journal of Economic Behavior and Organization***, 2: 307-333.

Levitt, B. & March, J. G. 1988. Organizational learning. In W. R. Scott & J. Blake (Eds.), ***Annual Review of Sociology, 14***, Vol. 14: 319-340. Palo Alto, CA: Annual Reviews.

Li, S. X. & Rowley, T. J. 2002. Inertia and evaluation mechanisms in interorganizational partner selection: Syndicate formation among U.S. investment banks. ***Academy of Management Journal***, 45(6): 1104-1119.

Lopes, L. L. & Oden, G. C. 1999. The role of aspiration level in risky choice: A comparison of cumulative prospect theory and SP/A theory. ***Journal of Mathematical Psychology***, 43(2): 286-313.

Madsen, P. M. & Desai, V. M. 2010. Failing to learn? The effects of failure and success on organizational learning in the global orbital launch vehicle industry. ***Academy of Management Journal***, 53(3): 451-476.

March, J. G. 1981. Footnotes to organizational change. ***Administrative Science Quarterly***, 26: 563-577.

March, J. G., Sproull, L. S., & Tamuz, M. 1991. Learning from samples of one or fewer. ***Organization Science***, 2: 1-13.

March, J. G., Schulz, M., & Zhou, X. 2000. ***The Dynamics of Rules: Change in Written Organizational Codes***. Stanford: Stanford University Press.

Massini, S., Lewin, A. Y., & Greve, H. R. 2005. Innovators and imitators: Organizational reference groups and adoption of organizational routines. ***Research Policy***, 34(10): 1550-1569.

Miller, K. D. & Chen, W.-R. 2004. Variable organizational risk preferences: Tests of the March-Shapira model. ***Academy of Management Journal***, 47(1): 105-115.

Miner, A. S. & Mezias, S. J. 1996. Ugly duckling no more: Pasts and futures of organizational learning research. ***Organization Science***, 7(1 (January-February)): 88-99.

Miner, A. S., Kim, J.-Y. J., Holzinger, I. W., & Haunschild, P. R. 1999. Fruits of failure: Organizational failure and population-level learning. In A. Miner & P. Anderson (Eds.), ***Advances in Strategic Management***, Vol. 16: 187-220. Greenwich, CT: JAI Press.

Mishina, Y., Block, E. S., & Mannor, M. J. 2012. The path dependence of organizational reputation: how social judgment influences assessments of capability and character. ***Strategic Management Journal***, 33(5): 459-477.

Mitsuhashi, H. & Greve, H. R. 2009. A Matching Theory of Alliance Formation and Organizational Success: Complementarity and Compatibility. ***Academy of Management Journal***, 52(5): 975-995.

Nelson, R. R. & Winter, S. G. 1982. ***An Evolutionary Theory of Economic Change***. Boston: Belknap.

Ozcan, P. & Eisenhardt, K. M. 2009. Origin of alliance portfolios: Entrepreneurs, network strategies, and firm performance. ***Academy of Management Journal***, 52(2): 246-279.

Park, K. M. 2007. Antecedents of convergence and divergence in strategic positioning: The effects of performance and aspiration on the direction of strategic change. ***Organization Science***, 18(3): 386-402.

Pentland, B. T. & Rueter, H. H. 1994. Organizational Routines as Grammars of Action. ***Administrative Science Quarterly***, 39(3): 484-510.

Powell, W. W., White, D. R., Koput, K. W., & Owen-Smith, J. 2005. Network dynamics and field evolution: The growth of interorganizational collaboration in the life sciences. ***American Journal of Sociology***, 110(4): 1132-1205.

Rao, H., Greve, H. R., & Davis, G. F. 2001. Fool's gold: Social proof in the initiation and abandonment of coverage by Wall Street analysts. ***Administrative Science Quarterly***, 46(September): 502-526.

Rhee, M. 2009. Does Reputation Contribute to Reducing Organizational Errors? A Learning Approach. ***Journal of Management Studies***, 46(4): 676-703.

Rothaermel, F. T. & Boeker, W. 2008. Old technology meets new technology: complementarities, similarities, and alliance formation. ***Strategic Management Journal***, 29(1): 47-77.

Samuelson, L. 1997. ***Evolutionary Games and Equilibrium Selection***. Boston: MIT Press.

Scott, J. T. 1993. ***Purposive Diversification and Economic Performance***. Cambridge, UK: Cambridge University Press.

Shinkle, G. A. 2012. Organizational Aspirations, Reference Points, and Goals. ***Journal of Management***, 38(1): 415-455.

Shipilov, A. V., Li, S. X., & Greve, H. R. 2011. The prince and the pauper: Search and brokerage in the initiation of status-heterophilous ties. ***Organization Science***, 22(6): 1418-1434.

Smith, F. L. & Wilson, R. L. 2001. The predictive validity of the Karnani and Wernerfelt model of multipoint competition. ***Strategic Management Journal***, 16: 143-160.

Van de Ven, A. 2013. Rational and reasonable microfoundations of markets and institutions. ***Academy of Management Perspectives***, 27(2).

Vissa, B. 2011. A Matching Theory of Entrepreneurs' Tie Formation Intentions and Initiation of Economic Exchange. ***Academy of Management Journal***, 54(1): 137-158.

Wernerfeldt, B. 1985. Multiple point competition. ***Strategic Management Journal***, 6: 87-96.

Winter, S.G. 2013. Habit, deliberation and action: Strengthening the microfoundations of routines and capabilities. ***Academy of Management Perspectives***, 27(2).

Winter, S. G. & Szulanski, G. 2001. Replication as strategy. ***Organization Science***, 12(6): 730-743.

Zaheer, A. & Soda, G. 2009. Network evolution: The origins of structural holes. ***Administrative Science Quarterly***, 54(1): 1-31.

Zollo, M. & Winter, S. G. 2002. Deliberate learning and the evolution of dynamic capabilities. ***Organization Science***, 13(3): 339-351.

Henrich R. Greve (henrich.greve@insead.edu) is Professor of Entrepreneurship at INSEAD and the INSEAD Chair of Organization and Management Theory. He received his Ph.D. from Stanford University, Graduate School of Business. His current research is on organizational learning and decision making, organizational networks, organizational misconduct, and organization – community relations.

Europe Campus
Boulevard de Constance
77305 Fontainebleau Cedex, France
Tel: +33 (0)1 60 72 40 00
Fax: +33 (0)1 60 74 55 00/01

Asia Campus
1 Ayer Rajah Avenue, Singapore 138676
Tel: +65 67 99 53 88
Fax: +65 67 99 53 99

Abu Dhabi Campus
Muroor Road - Street No 4
P.O. Box 48049
Abu Dhabi, United Arab Emirates
Tel: +971 2 651 5200
Fax: +971 2 443 9461

www.insead.edu

INSEAD

The Business School
for the World®

Printed by INSEAD