

# PERSPECTIVE

## Toward a Behavioral Theory of Strategy

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This paper offers an analytical structure to pinpoint the behavioral roots of superior performance, where “behavioral” denotes “being about mental processes.” Such roots are identified in behavioral deviations from market efficiency. The causes of these deviations are behavioral factors that bound firms’ ability to pursue and compete for superior opportunities. Because these bounds are systematic and diffused among firms, they ensure that latent opportunities are not competed away. In this setting, the behavioral bases of superior performance stem from a superior ability to overcome focal behavioral bounds. This analytical structure is used to identify the mental processes especially important to firm performance that strategic leaders can reliably manage. Its key insight is that superior opportunities are cognitively distant. They rarely correspond to common ways of thinking. The reason for this is that it is necessary to overcome strong behavioral bounds to pursue these opportunities. This insight contrasts with mainstream behavioral approaches to strategy, which focus on the virtues of local action, and it has two implications: the behavioral essence of superior performance corresponds to strategic leaders’ superior ability to manage the mental processes necessary to pursue cognitively distant opportunities; and pursuing the cognitively distant implies a more expansive conception of strategic agency (e.g., the role of strategic leaders) than is acknowledged by mainstream behavioral approaches to strategy. The challenges posed by this conception require a model of human cognition that goes beyond the understanding of bounded rationality that is diffused in current behavioral strategy research. The second part of the paper assesses the traits of a model of human mind that can support the behavioral conception of strategic agency advocated and proposes a unified model of the human mind that centers on associative processes.

*Key words:* strategy and firm performance; evolutionary approaches; strategy formulation; strategy implementation; management processes; interpretation and sensemaking; managerial and organizational cognition

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### 1. Terminological Premise

The term “behavioral” has a long history in the social sciences. Despite that history, or perhaps because of it, the term retains many ambiguities. This paper conforms to recently convergent uses of the term in disciplines such as economics and decision science, for which behavioral refers to the psychological underpinnings of a given phenomenon, where psychological broadly denotes “being about mental processes.”

### 2. Introduction

Consider the following passages.

Passively “drawing consequences” is not the only possible economic behaviour. You can also try and change the given circumstances. If you do that, you do something not yet contained in our representation of Reality.

(Schumpeter 1911, p. 104)

Superior opportunities need not lie, then, within an incremental,

rigid pattern of invariant conditions, methods of productions and forms of industrial organization... [but instead reflect] competition from the new commodity, the new technology, the new source of supply, the new type of organization... competition which commands a decisive cost of quality advantage and which strikes not at the margins of the profits and the outputs of existing firms but at their foundations and their very lives. This kind of competition is as much more effective than the other as a bombardment is in comparison with forcing a door.

(Schumpeter 1950, p. 84)

Here, we find the premises of a behavioral theory of superior performance that emphasizes looking beyond the proximate. Schumpeter suggests that economic agents need not receive a cognitively defined status quo. Rather, they can manage—challenge, stretch,

and change—shared mental representations of reality and act on them. Because it is possible to manage these cognitive structures, it is also possible to discover and pursue cognitively distant opportunities that lie outside the purview of predominant ways of thinking. Firms that are superior at this game will be rewarded more generously than will those that are superior only at an incremental game.

Now, consider a more familiar image.

Learning guided by clear short-term feedback can be remarkably powerful, even in addressing complex challenges. But that sort of learning does little to enable sophisticated foresight, logically structured deliberation and/or the improvisation of novel action patterns—and situations that demand these are rarely handled well.

(Nelson and Winter 2002, p. 29)

This image implies that firms “might be able to spot an arbitrage opportunity involving an incremental change in the way certain resources are used” (Denrell et al. 2003, p. 984). Regarding more distant opportunities, however, “the process of opportunity recognition is serendipitous, i.e., the opportunity was discovered as an unintended outcome of activities with another purpose” (Denrell et al. 2003, p. 986).

Here, we see the premises of a more familiar behavioral theory of superior performance—one that negates “distant intelligence.” Economic agents may stumble upon distant opportunities, but they lack the intelligence needed to search for and act on them reliably. Because their rationality is bounded, intelligent action is confined to the neighborhood of current activities, and superior performance comes from a superior ability to manage the cognitive processes that underlie the intelligence of local action. This view reflects the incremental sensibility of mainstream behaviorally oriented strategy work, also called the capabilities paradigm (Gavetti and Levinthal 2004). Rooted in the ideas of the Carnegie School (Simon 1947, March and Simon 1958, Cyert and March 1963), especially as they developed in Nelson and Winter’s (1982) evolutionary economics lineage and related work on organizational learning (for a historical perspective, see Argote and Greve 2007, Cohen 2007), this paradigm emphasizes the localness of search, routinized action, and the binding effects of path dependency and organizational trajectories (Winter 1987, Teece et al. 1997, Dosi et al. 2000).<sup>1</sup>

Consider the contrast between these images. Both have a behavioral emphasis: the root of superior performance is in the superior management of select cognitive processes. Yet they offer fundamentally different conceptions of what drives superior performance. This divergence results from different postulates about rationality. The latter’s emphasis on rationality bounds translates into a constrained, incremental notion of strategic agency;<sup>2</sup> in the former, less austere assumptions about such bounds give strategic leaders a greatly expanded

role. This contrast suggests that if Schumpeter is even partially right, current behavioral theories of superior performance overlook an important part of the superior performance equation. This observation leads to the hypothesis that motivates the present paper: much of the current mainstream is locked into overly strict assumptions about rationality bounds. If this hypothesis is true, what strategic agents can reliably control is underestimated, and the commonly acknowledged space of behavioral drivers of superior performance is narrower than it should be. Thus, a more expansive conception of strategic agency can be afforded that presents a major opportunity for behavioral studies of strategy.

This paper draws the boundaries of that opportunity and offers a theoretical structure that permits its pursuit. It seeks to capture the mental processes most important to superior performance that strategic leaders can reliably manage. Practically speaking, it seeks to answer this question: If strategic leaders were to focus their limited attention on managing their own and others’ mental processes, what are the *nature* and *boundaries* of the “mental interventions” that would most benefit their firms’ performance? This agenda depends not only on understanding the full set of possible mental processes that, if properly managed, could benefit performance. It also requires an evaluation of these drivers in terms of what strategists can realistically do to affect them. Something can be important to performance in theory but have no agency implications if it is not controllable. Therefore, this paper first derives a theoretical structure to assess systematically the central behavioral drivers of superior performance, and it then suggests the traits of a model of the mind that supports the agency implications of this structure.

### Preview

The premise of the theory presented below is that to identify the behavioral drivers of superior performance systematically, it is useful to reason against the benchmark of market efficiency. When markets are efficient, opportunities for superior performance (also called superior courses of action or strategic opportunities) do not exist, or, if they do, they are short-lived because they are competed away by many rival firms. Therefore, establishing what causes violations of market efficiency shows what causes opportunities to exist. Following this logic, the behavioral roots of superior opportunities can be understood in terms of behavioral factors that hinder efficiency. The theory proposed in this paper seeks to isolate such factors by identifying systematic behavioral bounds or impediments to competition. These bounds are behavioral in that they reflect limitations in strategic leaders’ ability to manage mental processes. They will be called *behavioral failures*, short for behavioral market failures. Such failures ensure that opportunities

whose pursuit requires leaders to manage very hard-to-manage mental processes are not competed away, even if competition is intense. Hence, superior performance rests in part on a strategic leader's superior ability to overcome focal behavioral failures. Thus, managing such mental processes is central to strategic leaders' role. This premise sets the parameters of the behavioral theory of strategy (hereafter, BTS) proposed here.

This paper first identifies focal behavioral failures (in §3), which are argued to revolve around the dimensions of rationality (the ability to identify opportunities), plasticity (the ability to act on opportunities), and shaping ability (the ability to legitimize opportunities and therefore "shape" or "construct" the opportunity space). It is argued that behavioral failures typically become more pronounced as firms pursue opportunities that are more cognitively distant. To pursue these opportunities, strategic leaders must change their worldview, or they will not spot them. They must also persuade internal and external stakeholders to change their worldview, or these opportunities will be resisted and not acted on and legitimized. Performing these tasks intelligently is hard. Indeed, evolutionary and ecological perspectives show that pursuing cognitively distant courses of action leads, *on average*, to unusually grave survival struggles. Hence, cognitively distant opportunities tend to be less contested than more proximate ones are. This idea leads to this paper's central proposition, which echoes Schumpeter's intuition: Superior opportunities tend to be cognitively distant, and critical sources of superior performance lie in strategic leaders' superior ability to overcome the behavioral bounds that make it hard for the average firm to pursue them. This proposition does *not* imply that local opportunities do not exist or that "persistent performance differentials among seemingly similar enterprises" (as Gibbons 2006, p. 381, would call them) do not exist or are negligible. Such differences have been documented and can be large (see Ichniowski et al. 1997, Chew et al. 1990, Argote 1999, Dosi et al. 2000). The proposition *does*, however, affirm that cognitively distant opportunities are likely to be less contested than more proximate ones are and are therefore potentially more rewarding. For this reason, the strategic leader's role should be regarded as more expansive than is commonly acknowledged, provided that what is entailed to exercise it reliably can be understood.

This paper then shows that such an expansive notion of strategic agency is justified in light of what we now know about the human mind (in §4). The average strategic leader's failure to perform tasks necessary to pursue cognitively distant opportunities does not mean these tasks cannot be made tractable. The paper poses some coordinates for a model of the mind that sheds some light on these tasks—why they are hard and how they can be made more manageable. Distant foresight

requires leaders to acquire appropriate cognitive representations that draw cognitively distant opportunities nearer. To persuade internal and external audiences to espouse a new, cognitively distant course of action, leaders must induce them to adopt a new representation of the firm and its position in the competitive space. The construct of cognitive representation and what it takes to manage it are thus central to the concept of strategic agency proposed here. Meeting the challenges of acquiring appropriate representations to foresee distant realities and persuading relevant audiences to endorse novel representations involve processes that have a common root in their associative nature.

This paper concludes by discussing the research agenda entailed by a BTS vis-à-vis current strategy research (in §5). It argues that behavioral strategy research that focuses on capabilities has underplayed the strategic importance of nonincremental opportunities. In contrast, distant opportunities are central to other mainstream approaches to strategy, especially the positioning school, that have underplayed the behavioral side of strategic leadership. By highlighting distant opportunities *and* behavioral failures, a BTS promises not only to redefine the strategic leaders' role but also to help reconcile different strands of strategy research.

### 3. Behavioral Failures and the Traits of a Behavioral Theory of Strategy

#### 3.1. Intuition

This section identifies central behavioral drivers of superior performance—mental processes whose superior management is especially likely to result in superior performance. The line of argument goes as follows. Heavy competition for a given opportunity progressively erodes an opportunity's value. Thus, in heavily competitive environments, existing superior opportunities tend to be those that most firms have an especially hard time pursuing. The difficulty of pursuing them therefore isolates them from competition. It will be shown that central to this limitation are behavioral failures: mental processes that the average strategic leader has a hard time managing. On the one hand, these failures play an important role to the existence of superior opportunities; on the other hand, a superior ability to counter them results in superior performance.

#### 3.2. Setting the Stage: The Thought Experiment

To derive behavioral failures, a thought experiment is proposed that proceeds from several premises about failures in the price system. These premises are not original. They are in the same vein as theories of superior performance (Barney 1986, Denrell et al. 2003, Lippman and Rumelt 2003, Oberholzer-Gee and Yao 2007, Yao 1988) that build on the first theorem of welfare economics (Debreu 1959).

The first premise is that the elements that comprise any course of action—whether they are activities, resources, or routines—have ultimately been purchased in the factor market. “Ultimately” implies that even complex, idiosyncratic, “homegrown” resources or factors that might not have their own market (Wernerfelt 1988, Montgomery 1994) stem from the transformation of simpler factors purchased in markets together with the factors that are required to transform them (Denrell et al. 2003).

The second premise is that, by definition, when markets are efficient, factor prices reflect their best values in all possible uses. Efficient markets thereby preclude the existence of strategic opportunities. This property, which is theoretically established for competitive markets, holds true only under a set of specific conditions (Yao 1988). Most notably, it requires markets to be complete (Debreu 1959). Departures from completeness have been demonstrated to influence the efficiency of equilibrium prices in competitive markets (Makowski and Ostroy 1995). Goods that have a positive price if markets are complete could be unpriced or could have significantly lower prices if markets are incomplete (Lippman and Rumelt 2003). For instance, before Walmart existed, the prices of some of its future constituent factors (e.g., the price of land in certain primary locations) were presumably below their potential value within Walmart’s system. In this sense, Walmart’s embodiment of a superior course of action, as manifested in its competitive advantage (or its ability to command a superior wedge between customers’ willingness to pay and suppliers’ opportunity costs; see Brandenburger and Stuart 1996), can be understood as reflecting some incompleteness in the factor market. Furthermore, for this advantage to be preserved, the condition of market incompleteness must be extended to markets for higher-order factors, such as abilities (broadly defined) to implement complex courses of action like Walmart’s. If higher-order factor markets exist and are efficient, any temporary advantage will be quickly exhausted. Numerous firms would begin to pursue similar courses of action and compete for similar factors, thereby pushing factors’ prices closer to their underlying rent-generating potential.

The third premise is that the condition of market completeness is not satisfied in actual competitive markets (Grossman and Stiglitz 1980, Stiglitz 1982). Denrell et al. (2003) emphasize that incompleteness is the norm in the domain of currently untried activities. That is, traded factors tend to be valued correctly only in relation to their existing uses: an element of novelty (such as the discovery of a new course of action, like Walmart’s) that affects the values of currently traded goods is necessary to obtain superior returns.

In sum, failures in the price system are normal in real competitive markets, and thus superior opportunities normally exist. To grasp the origin of such opportunities,

it is therefore useful to consider real competitive markets and ask why inefficiencies remain despite intense competition for opportunities. Here, the questions are whether failures in the price system, and therefore superior opportunities, have relevant behavioral roots and what these roots are. To address these questions, the following thought experiment is considered. Assume a situation of intense competition with many firms looking for opportunities and incomplete factor markets. In this situation,

1. What hypothetical conditions must be met so that firms’ competitive actions lead to the approximation of efficient outcomes by drastically limiting or eliminating possible discrepancies between factor prices and their values—that is, by exhausting opportunities?

2. What are the real, systematic behavioral impediments to meeting these necessary conditions? Stated differently, what are the behavioral impediments to the pursuit of and competition for opportunities?

In this setup, (i) the behavioral origin of strategic opportunities corresponds to systematic behavioral deviations from the conditions required by market efficiency, which will be called behavioral failures; and (ii) the behavioral origin of superior performance corresponds to some firms’ superior abilities to overcome behavioral failures.

### 3.3. Behavioral Failures

Before proceeding further, it is helpful to define precisely “behavioral failure” as it is used here.

**DEFINITION.** Behavioral failures are impediments to firms’ abilities to compete for opportunities. Such failures are behavioral insofar as these impediments are mental in origin. Behavioral failures can be viewed in terms of limits to strategic leaders’ abilities to manage and overcome such mental impediments.

The “failure” in behavioral failure (also called “behavioral bound”) refers to systematic limitations along select dimensions of firms’ activities that are critical to efficiency outcomes via their impact on competition for opportunities. If firms were unbounded along such dimensions, competition for latent opportunities would lead to approximations of efficiency outcomes. In this sense, failure is a firm-level property: firms are the competing entities, and failures are defined in regard to firms’ abilities to compete. The “behavioral” of behavioral failure refers to the failure’s origin, which reflects impediments to the competition for opportunities that have a mental origin. In this sense, behavioral failures can be cast in terms of strategic leaders’ limited ability to manage these mental processes. If leaders were not bounded in their ability to manage them, behavioral failures would not exist.

In what follows, relevant behavioral failures (or bounds) are identified and their nature characterized.



These failures revolve around three key dimensions: rationality, plasticity, and shaping ability. The argument unfolds to explain why the lack of bounds along each dimension is necessary vis-à-vis efficiency outcomes. These conditions are then assessed against robust empirical evidence that shows why such conditions are not met and results in the characterization of behavioral failures. The emphasis is on particularly severe bounds. Superior untapped opportunities are expected to be those the pursuit of which involves overcoming especially severe behavioral bounds: the more severe the bounds are, the less likely it is that opportunities are pursued and competed away. Figure 1 shows this principle graphically. Each point of the figure can be interpreted as a potential opportunity. The three dimensions represent the severity of the bounds that must be overcome to realize a given opportunity. Opportunities are more difficult to pursue when they are farther from the origin. Moving from O and surrounding points (i.e., where economic agents are unbounded along the dimensions considered here) to A and surrounding points and then to B and surrounding points, it is increasingly likely that truly superior opportunities exist.

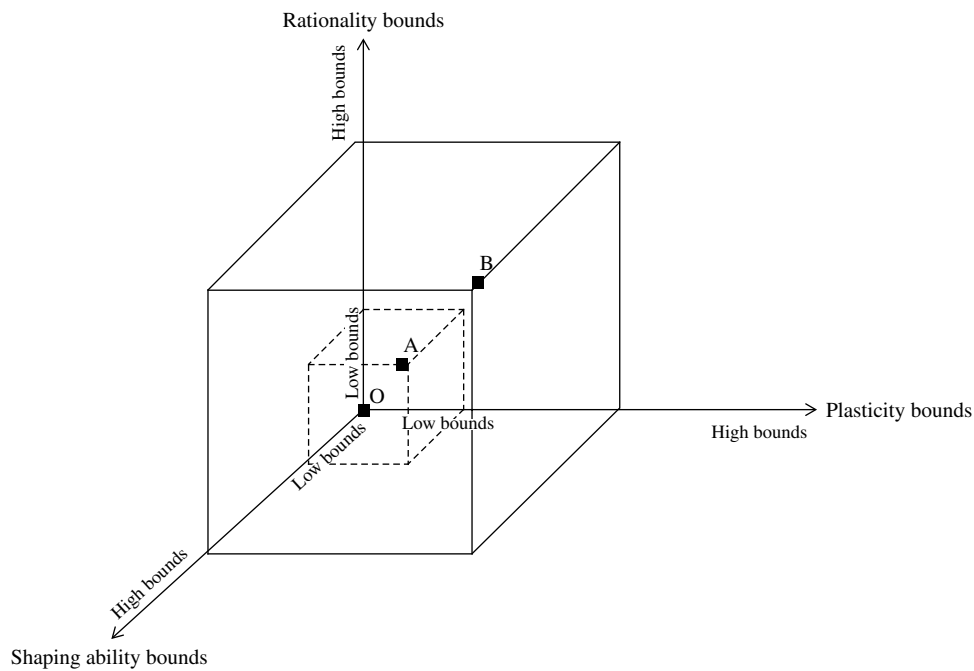
In the spirit of logical transparency, the analysis below will use the formal apparatus of the NK fitness landscape model (Kauffman 1989, Levinthal 1997, Rivkin 2000). In addition to representing opportunities (i.e., each point of the landscape corresponds to a configuration of organizational elements; this landscape represents the space of possible returns that any given configuration  $x$  of organizational elements makes possible at any given point in time), this model has been used extensively to

address issues that are related to the current question. Some of the insights generated by this work will be used below. The fitness landscape is a mapping between  $N$  organizational elements and a payoff. A particular configuration of elements  $x$  is a vector,  $\{x_1, x_2, \dots, x_N\}$ . The fitness landscape can thus be expressed as the mapping “ $\rightarrow$ ” between  $X$ , where  $X$  is the set of all possible  $2^N$  configurations  $x$  and  $\Pi$ , where  $\Pi$  is the set of all possible payoffs  $X \rightarrow \Pi$ . (See the appendix for a more complete description of the model.)

**3.3.1. Rationality.** Strategic opportunities must reflect asymmetries between prices and the rent-generating potential of some of their constituent elements. The first necessary condition for eliminating such discrepancies is that competing economic agents have the ability to spot all undervalued courses of action. This condition requires that competing agents can identify all possible courses of action and accurately evaluate them. If this condition is not met, untapped opportunities can remain ignored by firms, even if competition is intense. Because of the resulting lack of competition for these opportunities, the market prices for some of their constituent elements will not converge to their true values. A necessary condition for price convergence is therefore that competing economic agents achieve full rationality, which “[r]equires a complete knowledge and anticipation of the consequences that will follow on each choice” (Simon 1947, p. 81).

The requirements for full rationality are substantial. First, the combinatorial space of possible courses of action is intuitively very large—in landscape terms, competing firms would need to consider the entire landscape

**Figure 1 The Opportunity Box**



surface, which comprises  $2^N$  possible courses of action. Second, if failures in the price system require an element of novelty (as indicated above), superior courses of action must then reflect either new combinations of activities or new activities. To evaluate them correctly, an agent must thus have foresight about all possible innovative activities and their likely outcomes.

To assess realistically the behavioral challenges required to meet this condition, it is helpful to consider three related facts. First, firms in most industries cluster around a relatively small number of positions or strategic groups (e.g., Chandler 1977, Podolny and Stuart 1995, Klepper 1996, Greve 1998), and firms within such groups tend to share similar conceptions about their industry and how to compete in it (Porac et al. 1995, Peteraf and Shanley 1997, Hannan et al. 2007). In landscape terms, firms end up within a small set of basins of attraction, which are defined as those points of the landscape that lead to a common peak via local search. Metaphorically, a basin of attraction is “a valley that circumscribes a mountain. Starting from any point in this valley, an upward climb leads to a common point, the peak of the mountain” (Gavetti and Levinthal 2000, p. 125). Consistent with the empirical evidence mentioned above, Gavetti and Levinthal (2000) show that in a landscape context, firms occupying the same basin of attraction share the same strategic representation—the firm’s conception of its position in a given competitive space (Gavetti and Levinthal 2000, p. 125).<sup>3</sup> Thus the resulting image is one in which firms in an industry generally end up populating a small fraction of areas in the landscape. Within such areas, they share the same strategic representations.

Second, economic agents are generally myopic; they are more reliable and effective at identifying and predicting the outcomes of courses of action that lie in the neighborhood of their firm’s current activities than they are at finding and estimating outcomes of more distant ones (March 1991, Levinthal and March 1993). By accumulating experience in a given domain, they gain informational advantages that can be effectively exploited in the same domain (Heilmeier 1993, Argote 1999, Denrell et al. 2003). Simon (1947, p. 81) refers to these informational advantages as “experienced feelings” that help administrators attach value to proximate courses of action. This statement about reliable local intelligence does not imply, however, that achieving it is easy, especially in situations of high complexity. For instance, suppose Walmart evaluates courses of action that are local in the sense that they are conceived around changes in a given organizational element, say, “land in rural locations.” In terms of the NK structure, if Walmart’s leaders consider expanding from rural locations into urban areas, this choice corresponds to envisioning the payoff of changes in a given organizational element,  $x_i$ . The complication is that the value implications of changes in  $x_i$  (i.e., changes to the overall payoff)

are contingent on the  $K$  other elements with which  $x_i$  interacts: the potential value implications of “land in urban locations” depend on how the other  $K$  elements with which this factor interacts are configured. Although these configurations include only a subset of the elements that an organization comprises, there can be many of them. Under the NK analytical specification, a given element  $x_i$  can have  $2^K$  possible values, each of which corresponds to a different combination of the  $K$  elements that interact with it. Foreseeing the value implications of moving from rural to urban locations involves considering all these configurations. When complexity is high, the combinatorial space of these configurations is vast. It is because of this complexity that Simon’s *experienced feelings* are a vital support to local foresight.

Third, distant foresight is not impossible, but it involves mental processes that are more difficult to perform reliably. Simon (1947, p. 81) notes regarding distant foresight that “since these consequences lie in the future, imagination must supply the lack of experienced feeling in attaching value to them.” Here, imagination connotes the importance of low-dimensional cognitive representations of a firm’s environment (Johnson-Laird 1983, Simon 1991, Thagard 1996, Weick 1990). Cognitive representations create coarse mental spaces that vastly reduce the number of alternatives in the strategist’s mind (Gavetti and Levinthal 2000). They can also draw nearer distant courses of action that are invisible through different representations (Nelson 2008). For instance, when Charlie Merrill re-represented the managed investment business in terms of the supermarket business during the mid-1930s, he foresaw the attractiveness of the “financial supermarket” concept, which his firm Merrill Lynch pioneered (Perkins 1999). In this case, his new representation for the business—managed investment firms as supermarkets—led him to identify a new strategic representation for the firm—the financial supermarket concept. Once he re-represented his industry, identifying this concept was more straightforward because the new representation drew it into greater cognitive proximity. Yet the solution was *cognitively distant* for most players subscribing to other prevalent representations of managed investment that hid the “financial supermarket” concept from them. Although appropriate representations can allow strategic leaders to identify cognitively distant alternatives and assess their likely outcomes, it is not easy to acquire them. Furthermore, strategic leaders tend to be cognitively inert (Finkelstein et al. 2008, Hambrick and Mason 1984, Tripsas and Gavetti 2000), especially late in their tenure (Helmich and Brown 1972, Gabarro 1987, Hambrick and Fukutomi 1991). Thus, the cognitive change required to identify cognitively distant alternatives typically needs to be sought proactively.

Considering these facts jointly offers both good and bad news. The good news is that in any competitive

context, numerous opportunities are likely to be overlooked. Although the space of possible courses of action is large, and many attractive opportunities are likely to exist in any situation of moderate to high complexity (Levinthal 1997, Rivkin 2000), economic agents tend to cluster within a few positions and are sharply bounded in their ability to look intelligently beyond such positions. The bad news is that given the power of local foresight and the related fact that a number of proximate firms will share similar representations and have access to similar information and thereby identify similar opportunities, it is unlikely that undervalued courses of action can be found in the neighborhood of populated areas. To the extent that some low-hanging fruits are initially available, they will be plucked quickly. Firms need to look more distantly, outside their basin of attraction, and that is hard to do. It requires strategic leaders to acquire cognitive representations for spotting superior opportunities that are cognitively distant for most economic agents.<sup>4</sup>

In propositional form, the main implication of this argument can be expressed as follows.

**PROPOSITION 1A.** *Especially severe rationality failures in the identification of opportunities are represented by the challenges of cognitively distant foresight.*

**PROPOSITION 1B.** *Strategic leaders' limited ability to manage the mental processes that underlie the identification of cognitively distant strategies or positions, especially the choice or formation of appropriate representational structures to "look into the distant," is a central behavioral impediment to achieving complete rationality.*

**PROPOSITION 1C.** *Variation across leaders' ability to counter these bounds is expected to account for a large portion of variation in identifying superior opportunities.*

**3.3.2. Plasticity.** Full rationality is necessary but not sufficient to negate opportunities. Competing firms might be fully rational and know where superior opportunities lie, but they might also be inert and thus unable to act on and compete for such opportunities. In landscape terms, agents could know the entire landscape and decide to act on a specific opportunity, but their firm might unexpectedly get stuck on its way to the peak because of bounded plasticity, with dire effects on its survival prospects. In this case, when identifying a superior opportunity does not translate or translates only partially into competitive behavior, the discrepancies between elements' current and true values would remain or be eliminated only after major time lags. The theoretical condition for superior opportunities to be absent must therefore also encompass a lack of bounds in firms' plasticity.

Firms generally fall far short of satisfying this condition (Hannan and Freeman 1977, 1984; Ghemawat 1991; Rumelt 1995), as shown by abundant evidence of

the costs and mortality consequences of discontinuous changes (Barnett and Carroll 1995, Tripsas and Gavetti 2000, Sull 2003). The question of whether the condition of full plasticity is met is a red herring. The real question is what forms of inertia are especially influential vis-à-vis opportunities' existence. What follows suggests the centrality of a behavioral class of inertia: cognitive or identity-based inertia.

It was argued that most local opportunities are noticed. Even if inertial forces prevent some firms from acting on such opportunities, the fact that many profit-seeking players spot and decide to pursue the same or similar opportunities attenuates, in the aggregate, these forces' impact on competition for them. This conclusion is strengthened by the fact that incremental changes typically face less resistance than long jumps do (Levinthal 1997). Consequently, existing opportunities tend to be distant. As previously discussed, Gavetti and Levinthal (2000) show that a firm's core strategic representation, which can be taken as an element that is foundational to its identity<sup>5</sup> (Simon 1953), corresponds closely to the basin of attraction the firm occupies. In terms of the Merrill Lynch example, the financial supermarkets representation corresponds to a basin of attraction, and firms that adopt it belong in this basin. Accordingly, if valuable opportunities are hard to find within firms' current basins of attraction, firms will have to adopt novel representations in order to pursue them. To the extent that the strategic representation is well established and central to the firm's identity, that firm's pursuit of the novel opportunity will likely violate some elements of its own identity (Tripsas 2009). This pursuit is problematic. Identity-violating changes are typically destabilizing and associated with high mortality rates (Baron et al. 2001, Hannan et al. 2006) because they generally trigger cultural opposition or asperity (Hannan et al. 2003b, 2007), especially when central identity codes are infused with moral value (Selznick 1957), have an emotional component (O'Reilly and Tushman 2008), or have defined meaning in the organization for long periods of time (Tripsas and Gavetti 2000) by acting as decision premises for local identities (Simon 1947; Kogut and Zander 1992, 1996). As March (1981, p. 575) argues, "If a leader tries to march toward strange destinations, the organization is likely to deflect the effort." Here, "strange" can be interpreted as violating taken-for-granted identity codes.

In addition, identity violations imply complex changes. Firms' strategic representations are at the core of what firms do. Violating them usually sets off cascades of changes (Hannan et al. 2003a, b, 2006; Ghemawat and Levinthal 2008) that generally require firms both to acquire new capabilities at the subsystem level, which is difficult (Dosi et al. 2000), and to change the architecture governing said subsystems, which poses more



challenges (O'Reilly and Tushman 2008). As Henderson and Clark (1990) argue about product innovation, the emergence of dominant designs establishes architectures that link the subsystems a product comprises. Because the architectures (or architectural knowledge) in industries characterized by stable dominant designs are also stable, they often “become embedded in the practices and procedures of the organization” (Henderson and Clark 1990, p. 15). This knowledge is implicit, and organizations that face changes in dominant designs—and that therefore need architectural changes—usually have a hard time recognizing this need (O'Reilly and Tushman 2004, Smith and Tushman 2005). That is, “the introduction of new linkages... is much harder to spot” (Henderson and Clark 1990, p. 17) unless the actors involved recognize the dominant design changes and the associated need for a new architecture. Substitute “distant opportunity” for “product innovation” and “strategic representation” for “dominant design,” and the challenge of developing capabilities for pursuing strategic opportunities is more evident. This challenge is related to more than the limits posed by the path dependency of learning and local search. It requires that firms acquire and embrace the new strategic representation that provides an overarching frame to guide and coordinate search efforts in the domains of activity the firm is engaged in (Tripsas and Gavetti 2000) and to channel attention (Ocasio 1997). Failures to embrace such mental structures can thus imply failures in the development of capabilities to pursue distant opportunities.

In propositional form, the implication of this argument can be expressed as follows.

**PROPOSITION 2A.** *Especially severe plasticity failures in firms' attempts to act on opportunities are represented by the challenges of organizational cognitive and identity change, which are generally required to act on distant opportunities.*

**PROPOSITION 2B.** *Strategic leaders' limited ability to manage the mental processes that underlie internal audiences' adoption of new strategic representations and identity codes to “move toward the distant” is a central behavioral impediment to achieving complete plasticity.*

**PROPOSITION 2C.** *Variation across strategic leaders' ability to counter these bounds is expected to account for a large portion of variation in acting on superior opportunities.*

**3.3.3. Shaping Ability.** Full rationality and full plasticity together are still not sufficient to negate the existence of opportunities. Competing firms might be fully rational and fully plastic but substantially bounded in their ability to legitimize new courses of action. Even if the identification of a superior opportunity translates into competitive behavior, firms' inability to legitimize

it means that discrepancies between some of the current values of its elements and their potential values are preserved. For example, in the early days of Internet portals, at least two alternative conceptions competed for legitimacy. Some firms, such as Lycos and Infoseek, represented their industry as a technology business and saw themselves as high-tech competitors; others, such as Yahoo!, adopted a media representation and proactively attempted to persuade external stakeholders that this perspective was viable. After an initial period in which these conceptions competed for attention and resources, key external actors—e.g., financial analysts, specialized press, potential customers—endorsed the media representation and rejected alternative ones. Most companies in the business immediately followed suit by moving away from the technology conception (Gavetti and Rivkin 2007). In this case, a potentially superior course of action remained untapped in part because of failures to legitimize it. Indeed, when Google entered the business a few years later, it adopted a technology conception that was reminiscent of Lycos'. The theoretical condition for superior opportunities to be absent must therefore also encompass a lack of bounds in firms' ability to legitimize opportunities (or their ability to shape the opportunity space to their advantage). If this condition were met, all firms in a given context would obtain the favors of external stakeholders, and there would be no illegitimate (but superior) opportunity left on the table. The logical consequence would be the withering of legitimacy effects: if all firms pursuing novel opportunities could shape external perceptions so as to legitimize them, legitimacy would lose its survival implications for legitimate firms. Stated differently, if everything were legitimate, being legitimate would be inconsequential. Consequently, full rationality and plasticity are not sufficient to guarantee the lack of opportunities: unbounded shaping ability is also necessary.

Considering legitimation introduces an important change in the reasoning and imagery used thus far, which have implicitly assumed both the existence of a mapping “→” between the courses of action “X” firms can pursue and their payoffs  $\Pi$ , and that firms cannot deliberately influence this mapping. This assumption implies an external “reality” as represented by the fixed topography of the performance landscape.<sup>6</sup> Under this assumption, firms compete for opportunities that exist, for peaks that are “out there.” In evolutionary terms, this reasoning corresponds to the assumption that selection criteria are exogenous. Introducing legitimation relaxes this assumption. Opportunities are not just out there, ready to be plucked. Courses of action that can be superior often require proactive efforts to shape selection criteria for their potential to be expressed. As the example of Internet portals illustrates, firms compete for legitimacy, thereby altering selection criteria (Porac et al. 1995, Pollock et al. 2004, Barron 1998, Khurana 2007).



In landscape terms, this behavior corresponds to the *shaping* of the landscape: areas of the landscape corresponding to conceptions that, partly because of firms' proactive efforts, become legitimized will rise relative to those reflecting illegitimate conceptions.

Legitimation has behavioral roots. For instance, recent work in population ecology has shown that collective sensemaking processes are central to how new courses of action or positions (organizational forms, in this literature) are established (Hannan et al. 2007). It emphasizes the cognitive processes through which relevant external audiences (e.g., capital markets, media) make sense of novel organizational forms. These are processes of recognition (Gavetti and Warglien 2007) and result in shared representational structures to interpret the new form, such as categories and schemas, which offer the basis for the new form's legitimation (Rosa et al. 1999). Although these processes are in part emergent, firms can affect them by competing through symbolic (Zajac and Westphal 2004, Fiss and Zajac 2006) as well as substantive (Cattani 2005) actions.

To meet the condition of unbounded shaping ability, a firm must have unbounded ability to shape the sociocognitive processes that persuade multiple parties (which are only partially known) that a particular conception or course of action is viable. It is implausible that this requirement is met fully, *particularly if the new course of action is significantly cognitively distant from the status quo*, and it is thus more likely to challenge beliefs about what is legitimate in a given context. There is strong evidence that institutional actors such as financial analysts tend to delegitimize courses of action that are especially distant from the cognitive status quo (Zuckerman 1999, Benner 2010), and firms that meet such resistance tend to shy away from their intent to implement these initiatives (Benner and Ranganathan 2012). Stated differently, when the pursuit of cognitively distant opportunities is at stake, the average firm fails to persuade external audiences.

The main implication of this argument can be expressed in propositional format.

**PROPOSITION 3A.** *Especially severe shaping ability failures in the legitimation of opportunities are represented by the challenges of persuading external audiences to embrace conceptions that are cognitively distant from the status quo.*

**PROPOSITION 3B.** *Strategic leaders' limited ability to manage the mental processes that underlie external audiences' adoption of novel conceptions or strategic representations is a central behavioral impediment to achieving full shaping ability.*

**PROPOSITION 3C.** *Variation across strategic leaders' ability to counter these bounds is expected to account for a large portion of variation in shaping or legitimizing superior opportunities.*

**3.3.4. Behavioral Failures, Together.** The behavioral origin of strategic opportunities reflects failures that are systematic and widely shared across firms. Because failures are systematic, some latent superior opportunities, especially those whose realization requires overcoming particularly acute bounds, are not competed away. Yet failures' systematicity does not preclude deviations from average behavior. Some firms can be better at overcoming them and thus superior at realizing untapped opportunities and better performance. Notably, behavioral failures become more pronounced as they correspond to courses of action that are more cognitively distant. The implication is that untapped opportunities tend to lie outside the purview of existing ways of thinking. These properties suggest the central proposition of the behavioral approach to strategy proposed here.

**PROPOSITION 4A.** *Cognitively distant opportunities are especially hard to pursue because pursuing them requires countering especially severe behavioral bounds.*

**PROPOSITION 4B.** *Given 4A, existing superior opportunities tend to be cognitively distant because they tend to be uncontested.*

**PROPOSITION 4C.** *Given 4A and 4B, a crucial behavioral source of superior performance stems from some firms' superior ability to counter behavioral bounds that prevent most firms from realizing cognitively distant opportunities.*

**PROPOSITION 4D.** *The source of superior performance in 4C can be interpreted as lying in some strategic leaders' superior ability to manage the mental processes that are involved in identifying, acting on, and legitimizing opportunities that do not lie within the purview of diffused ways of thinking.*

**PROPOSITION 4E.** *A critical component of firms' strategic behavior can be conceived in terms of their leaders' proactive drive to manage such mental processes.*

## 4. What Model of the Mind? Rethinking Bounded Rationality . . . and Beyond

This paper began with the hypothesis that current behavioral conceptions of strategic agency are narrow because they emanate from a sensibility that makes austere assumptions about rationality. As stated above, this sensibility can be traced back to the Carnegie School, particularly to the intellectual lineage of the school, which takes the constructs of individual habit and collective routine as building blocks for its understanding of firm behavior (Nelson and Winter 1982; see Cohen 2007 for a historical perspective). In this conception, human beings can learn effectively from local feedback but are sharply limited in their ability to anticipate future states of the world, especially if such states are not cognitively proximate (Winter 1987, Levitt and March 1988,

Denrell et al. 2003). Economic agents cannot reliably attain intelligence for decisions requiring anticipation of future environments, but they can become capable of and reliable at performing complex tasks when they can exploit the power of regular local feedback (such as in the development of routines) via local search. That is why strategically relevant action is incremental in this literature. Superior performance rests on the attainment of superior capabilities that stem from the superior ability to manage the learning processes that govern both the development of effective, reliable routines and how these routines may change in the very process of being enacted in new circumstances (Cohen 2007). Strategic agency is defined accordingly.

The theory proposed above agrees with many of the dominant paradigm's premises, but it invokes a more expansive conception of strategic agency. It agrees with the dominant paradigm that systematic behavioral limitations exist that bind the *average* agent to intelligent local action, and it agrees that the cognitive distant is very hard for the *average* firm to pursue. Yet it diverges from this paradigm in two critical respects. First, it emphasizes that superior opportunities tend to be cognitively distant and are so because of the behavioral bounds that make it hard for the average firm to pursue them. Second, it disagrees with the view that because the average firm cannot counter such bounds, strategic agency is restricted to incremental action. If the nature of such bounds can be identified, *and* knowledge about the human mind can be used to understand their roots and how they can be countered, a more expansive notion of strategic agency is merited. The theory proposed above takes on the first part of this challenge. The material below tackles the second one.<sup>7</sup>

#### 4.1. What Is Needed: Revisiting Bounded Rationality and Moving Beyond

For the kind of strategic agency proposed in this paper to be justified, it must be possible to develop a reliable understanding of what it takes for strategic leaders to foresee the cognitive distant and to induce both internal and external audiences to buy into courses of action that require mental shifts. These aspects of agency are absent from current behavioral strategy work, and understanding them requires a different understanding of the human mind.

First, it requires a radical extension in the dominant interpretation of bounded rationality, with its focus on habit formation, experiential learning, and routinized action. This interpretation is useful for grasping some important behavioral bases of superior performance, but it is insufficient for the needs of a BTS. Distant foresight involves different mental processes. To study what such foresight entails and how to overcome its difficulties, attention to different bounds of human rationality is necessary.

Second, the common origin of plasticity and shaping ability failures lies in the difficulty of persuading key audiences to endorse novel conceptions that are cognitively distant from the status quo. Accordingly, there is a need for a model of the mind that addresses relevant bounds not only in rationality but also in *persuadability*.

#### 4.2. A Pivotal Construct: Cognitive Representation

The construct of cognitive representation is pivotal to the microfoundational structure of a BTS. Cognitive representations are conceptual structures in the minds of individuals that encapsulate a simplified understanding of the reality individuals face (Lakoff 1987). Cognitive representations are central to a BTS because focal behavioral failures are determined to a large degree by challenges in managing them, as summarized in Propositions 1, 2, and 3.

Overcoming the rationality bounds that prevent cognitively distant foresight requires the use of appropriate representations that allow strategic leaders to “look into the distant.” Such representations allow opportunities to be identified that are invisible to strategic leaders who employ other representations. Concerning bounds on plasticity, acting on superior opportunities frequently requires considerable changes in firms' foundational premises as crystallized in cognitive representations of their strategic identity. Changes to such representations often meet resistance. The difficulty in persuading organizational members to adopt novel strategic representations is thus a focal behavioral failure in firms' march toward superior opportunities. Similar to plasticity bounds, shaping ability bounds correspond to the difficulties of persuading external audiences to endorse strategic representations that are cognitively distant from the status quo.

#### 4.3. Toward a Unified Model: The Associative Mind

A model of the mind that meets the needs of a BTS requires the articulation of plausible mental mechanisms that actors can use both to identify *appropriate* representations that facilitate distant foresight and to induce focal audiences to embrace relevant representations. The claim advanced here is that these mental mechanisms have a common root: they are predominantly associative. Accordingly, strategic leaders' difficulty in managing associations is critical to the origin of behavioral failures.

The basic structure of associative thinking is simple: (i) an agent organizes her knowledge, experiences, and memories into categories—mental structures that group situations along some criteria of similarity (Rosch 1978, Lakoff 1987); (ii) when an agent has a new situation to interpret, she recognizes it associatively in terms of these structures; the agent's memory is accessed through observed or inferred features of the new reality that

prime a specific category or situation that is part of that category (Anderson and Bower 1980, Gentner 1983); and (iii) the agent tends to apply the same model of inference to all situations within a category. Thus, when a novel situation is associated with a given category, it will be represented in terms proper to that category (Krueger and Clement 1994). This form of reasoning, which Mullainathan et al. (2008, p. 577) dub “coarse thinking,” reduces the evaluation of new, hard-to-interpret situations to comparisons with familiar ones, thereby economizing on rationality. For this reason Edelman (1992) argues that our brains have evolved to make various forms of associative thinking like analogy, pattern recognition, and metaphor standard and hardwired.

Forms of coarse thinking like analogy and case-based reasoning can effectively guide strategic leaders’ efforts to acquire new representations of their strategic problem in their quest for superior opportunities (Gavetti et al. 2005). The general rationale for this is that novel and highly ambiguous situations are very hard to approach in the logico-deductive manner of rational choice (Neustadt and May 1986, Gilboa and Schmeidler 2000, Gavetti et al. 2005, March 2006). To the extent that superior opportunities are cognitively distant, it is necessary to deal with substantial ambiguity in order to spot them and grasp their nature. Analogy is a natural reasoning mechanism for decision making when ambiguity and complexity are high.

There is a second, subtler reason why associative processes and not deductive strategies are usually necessary to identify superior opportunities. Rational strategic choice is premised on representations in the form of analytical frameworks that are widely available and therefore diffused among strategists, including external advisors such as consultants. Over time, most opportunities that can be spotted through them will be identified by the players in the industry. To break out of this equilibrium, it is necessary to employ novel representations. Analogies to prior strategic contexts are a vast reservoir of such representations.

Associative thinking also underpins the kind of persuasion focused on here. When an audience is presented with a new strategic representation corresponding to a new course of action, it will generally evaluate that representation associatively. This representation will evoke mental structures corresponding to prior similar experiences, be categorized as a “type” of situation, and be represented through lenses that are typical of that type of situation. Whether a strategic representation is resisted depends largely on how it is categorized and therefore on the kinds of associations it triggers. Persuasion therefore hinges on influencing the associations that audiences make when they evaluate a representation with which they are presented.

That discovery and persuasion have the same cognitive root should not be surprising. Both reduce the

distance between cognitive entities. When a cognitively distant opportunity is identified, a conception that was not included in the agent’s initial representation of the business becomes proximate and possibly central to her representational space. In this sense, there are two cognitive entities: the yet-to-be discovered conception that corresponds to the new opportunity and the agent’s representation of the business. When the agent revises this representation and identifies an opportunity that was once invisible to her, she reduces the distance between the two entities in her mind. Similarly, when a strategic leader persuades a skeptical stakeholder to support a new opportunity, she has drawn nearer a representation that was resisted because of its cognitive distance from the stakeholder’s initial representation of what an appropriate strategy is. In this sense, the notion of agency advocated here can be recast in terms of strategic leaders’ influence over representational spaces.

Despite their common cognitive basis, discovery and persuasion pose different challenges for strategic leaders. To gain distant foresight, the agent must identify appropriate recategorizations for the strategic problem at hand. There are two main classes of difficulties in doing so. First, because individuals tend to focus mainly on opportunities that lie close to their firm’s current activities, the quest for alternative representations à la Charlie Merrill and the use of analogy as a tool for strategic reasoning are widely overlooked. Second, it is hard to use analogy properly. Analogizers often draw superficial similarities between novel situations and past ones (Gentner 1983, Gick and Holyoak 1980, Gavetti and Rivkin 2005). This tendency is exacerbated by the human mind’s confirmatory nature (Gavetti and Rivkin 2005). That is, deep experiences in industry X might compel a strategist to look at some other industry Y through the lens of industry X even if they are not relevantly similar. Emotional factors (i.e., an emotional attachment to industry X) may also make the strategist look for instances of industry X even in profoundly dissimilar contexts. These tendencies will make the leader look selectively for evidence that supports the analogy, instead of looking for cues that both support and undermine it. To draw useful distant inferences, it is necessary to recognize and counter these tendencies.

As for persuasion, an agent must communicate the desired course of action so as to minimize resistance. When a strategic agent communicates this course of action, she prompts focal audiences to encode it in terms of prior representational categories. The core challenge then becomes finding metaphors (Lakoff and Johnson 1980), analogies (Aragones et al. 2002), images (Kosslyn et al. 2006), rhetorical devices (Eccles and Nohria 1992, 1998), or frames for communicating the desired direction, where “proper” means the activation of representations that accommodate, rather than reject, the desired change. To achieve this goal, insight into the nature and

content of focal audiences' mental structures, accounting for variation both within and across focal audiences, is necessary. These tasks are difficult and highlight the severe bounds to persuadability. Furthermore, these structures operate largely unconsciously. There may be some archetypal metaphorical structures that most human beings use to make sense of the world (Edelman 1992, Zaltman and Zaltman 2008), and the types of categories that are especially basic or salient can be predicted to some degree (Rosch et al. 1976). The science of persuasion is, however, only taking its first steps in this direction.

The prior section ended with a claim: a crucial source of superior performance stems from some firms' superior ability to overcome the behavioral bounds that prevent the average firm from realizing cognitively distant opportunities. This section attempted to sketch the traits of a model of the mind that captures the mental essence of such bounds and what countering them entails. In propositional form, its main implications can be expressed as follows.

**PROPOSITION 5A.** *To realize cognitively distant opportunities, it is necessary to manage mental processes that are fundamentally associative.*

**PROPOSITION 5B.** *A superior ability to manage these associative processes is essential for both strategic leadership and superior performance.*

## 5. Final Remarks

This paper has proposed an analytical structure to assess systematically the behavioral drivers of superior performance. It has focused on behavioral failures that especially bound the competition for opportunities. Low-hanging fruits are plucked quickly, and existing opportunities tend to be those that are hard to pluck. Following this logic, the assessment of behavioral failures has revealed that they especially limit firms' pursuit of cognitively distant opportunities. The implication is twofold. First, superior opportunities tend to be cognitively distant. Second, they must be attainable to be strategically relevant. Therefore, it must be possible to develop a behavioral conception of strategic agency that addresses the focal challenges of pursuing the cognitively distant. In this spirit, evidence about the human mind has been discussed that can microfound such a notion of agency. Because the challenges of managing the cognitive distant have a common cognitive root, which lies in how mental associations are managed, a unified model of the mind that addresses associative processes in their different manifestations provides an appropriate microfoundational basis to the BTS and related conception of agency.

One can therefore conclude that the opportunity for behavioral studies of strategy hypothesized at the outset

is real, and its defining traits are now apparent. The role for strategic leaders that emerges from it is evocative of Schumpeter: "You can also try and change the given circumstances." This paper is not a point of arrival but a point of embarkation in demarcating this role. It offers a way to think about the behavioral bases of superior performance and draws some central, if broad, implications of this way of thinking for the role of strategic leaders. Nonetheless, important elements of the behavioral theory of strategy and the associated notion of agency remain to be written.

On one hand, the model of the mind discussed in §4 has been introduced in coarse terms. Its central processes need to be characterized more fully. Some efforts in this direction are under way (e.g., Gavetti and Warglien 2009). Moreover, the emotional component of associative thinking has not been examined. Emotions can affect both foresight and persuasion. Future research should consider them more fully. Furthermore, as previously indicated, there are still no answers to the several questions that it raises. Future research that captures important aspects of associative processes in regard to their relationship with distant foresight and persuasion is necessary.

On the other hand, as mentioned in Endnote 7, because some central aspects of behavioral failures involve collective dynamics, a full-fledged theory about behavioral failures and what strategic leaders can do to counter them better than their competitors do requires connecting microlevel insights about associative processes with more aggregate perspectives and evidence. Although recent developments like sociological work on categorization (e.g., Zuckerman 1999, Hannan et al. 2007), the sociostructural antecedents of how good ideas are detected and developed (Burt 2004), the collective aspects of creativity (e.g., Cattani and Ferriani 2008, Gavetti and Warglien 2007, Uzzi and Spiro 2005), framing (e.g., Fiss and Hirsch 2005, Fiss and Zajac 2006), or the interaction between politics and cognition in social movements formation (Goffman 1986) and strategic action (Kaplan 2008) are not directly preoccupied with the role of strategic leaders, they take a more aggregate perspective than this paper does and consider aspects of cognition that complement the direction indicated here. The breadth and depth of these contributions suggests major opportunities for developing the model of strategic agency that this paper proposes.

In sum, the role of strategic leaders as agents who influence their own and others' mental processes in pursuing opportunities can be properly defined. Doing so requires the micronature of these mental processes and the sociostructural context in which they occur to be understood jointly. The opportunity this paper pursues is echoed in intimations that some of the Carnegie School's behavioral foundations should be revisited in light of recent developments in the behavioral sciences



(Gavetti et al. 2007). The direction this paper has taken reflects the school's foundational principle of behavioral plausibility (Simon 1947, Cyert and March 1963), yet it also pushes the school's behavioral underpinnings into new territories, and its integration of microlevel insights with macrolevel ones will reinforce this process.

The theory proposed here can be seen as complementary to current mainstream approaches to strategy. It highlights drivers of superior performance that have generally been neglected.<sup>8</sup> For instance, it complements work on resource allocation, which has focused more extensively on the political dimension of the resource allocation process than it has on the cognitive/behavioral one (Bower 1970, Burgelman 1983). Ironically, in an unpublished manuscript, Bower (1967) articulates what is probably the first behavioral approach to strategy. Influenced by Cyert and March's (1963) behavioral theory of the firm, this work proposes a problem-solving approach to business planning. Perhaps closer to the BTS are two regions of intellectual inquiry that have traditionally been separate (for exceptions, see Gavetti and Rivkin 2007, Gavetti et al. 2005, Ghemawat and Levinthal 2008, Siggelkow 2001) and that the BTS reconnects to some degree. As mentioned above, mainstream behavioral approaches to strategy have largely neglected "the distant"; conversely, mainstream approaches to strategy such as the positioning school that have typically considered behavioral limitations to be largely unproblematic recognize the centrality of distant opportunities, but they have neglected the behavioral side of the equation. The brief discussion that follows expands on how these two approaches relate to a BTS.

As previously discussed, work in the tradition of the capability paradigm explains variation in performance largely by reference to "different degrees and qualities of organizational knowledge and competence" (Zollo and Winter 2002, p. 339) and to a superior dynamic capability (Teece et al. 1997), which is a "learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness" (Zollo and Winter 2002, p. 340). Firms compete in the same competitive neighborhood, develop a competitive advantage through superior routines, and sustain this advantage by deploying superior higher-order routines or dynamic capabilities (Dosi et al. 2000) when external forces act to undermine it. Such an image of opportunities is quite different from the one considered in this paper, especially in its focus on performance variation that accrues within competitive neighborhoods. Yet, like that perspective, this paper acknowledges that behavioral failures can exist and persist even in regard to proximate courses of action. As explained previously, however, there are reasons to expect these bounds or failures

to be less pronounced than are those that characterize more distant opportunities.

Given the position advocated here, it is encouraging that recent work in this tradition, particularly work on dynamic capabilities (Helfat et al. 2007, Teece 2007), is beginning to take a broader view on the behavioral underpinnings of superior performance. In particular, Teece (2007) develops a framework that pays increased attention not only to seizing opportunities, an emphasis consistent with prior work in this tradition, but also to sensing opportunities and using innovation and collaboration to create ecosystems that facilitate the reconfiguration of capacities that would otherwise be difficult to develop. These latter categories implicitly suggest greater attention to opportunities that are not necessarily incremental. This line of work does not seem, however, to perceive the need for the foundational shift that a BTS calls for (for an exception, see Helfat and Peteraf 2009). It continues to operate within this tradition's foundational assumptions about human behavior, which may not be the best basis for a research program that addresses the challenges posed by the distant. In a somewhat related vein, O'Reilly and Tushman (2008) push the dynamic capabilities framework in ways that emphasize the importance of nonlocal action. Key to their approach is the idea that organizations can be ambidextrous (i.e., simultaneously exploit current trajectories and explore new ones), and it seeks to define what ambidexterity requires from strategic leaders. This work, and work on ambidexterity more generally (for an overview, see Raisch et al. 2009), accounts for important behavioral elements in how it interprets the role of leaders, especially in regard to organizational identity, but it does not have a systematic behavioral agenda. It focuses more on how leaders manage contexts, structures, and processes than on how they manage people's minds. Nevertheless, in the dimensions of organizational action it considers, it complements the BTS proposed here.

Moving to the positioning school, this paper's emphasis on nonincremental opportunities also bears on ideas that are proper to less behavioral provinces of the strategy debate. Seminal work on strategic positioning (Porter 1996, Ghemawat and Rivkin 1999) is centered on the idea that successful strategy "is about being different. It means deliberately choosing a different set of activities to deliver a unique mix of value" (Porter 1996, p. 64). The image is that the path to a successful strategy requires firms to identify peaks, basins of attraction, and positions that are distinct and distant from those occupied by competitors. This idea also runs deeply in game-theoretic approaches to strategic positioning. Brandenburger and Nalebuff's (1995) framework for strategy formulation is premised on the notion that successful strategies are those that break from the status quo. Firms thus need to learn how to change the game of business because "[t]he rewards that can come

from changing a game may be far greater than those from maintaining the status quo” (Brandenburger and Nalebuff 1995, p. 58). With its emphasis on nonincremental opportunities, the BTS offers a behavioral rationale for this imagery. Although drawing deep and systematic linkages between this approach and a BTS is outside the scope of this paper, a BTS clearly points to a set of behavioral drivers of performance variation that this work has generally neglected by considering managers’ and firms’ behavioral bounds to be largely unproblematic.

The conception of strategic agency proposed here lies between these two perspectives: it is loyal to the foundational principle of behavioral plausibility that underlies the capability paradigm, but it offers a less austere interpretation of this paradigm that pushes strategic agency into territories that are more proper to the positioning school. The hope is that the position the BTS occupies helps correct the limitations and preserve the strengths of these approaches, thereby clarifying the understanding of strategic leaders’ role.

The BTS rests on a paradox. What is strategically attractive is attractive precisely because it is extremely difficult to achieve. Yet this initial attempt to define the boundaries of a BTS shows that recent scientific developments can be used to partially reconcile this paradox, or at least to gain sufficient knowledge about its sources to offer the “most prepared” firms sound methods for countering focal behavioral failures. Clearly, the account given above is only a point of embarkation, and fulfilling the promises of a behavioral theory of strategy will not be easy. But its payoff might be large. After all, as Schumpeter might argue, “[I]magination can also reveal the real essence of things . . . [and] offer us a vision of a possible new identity or a world that can guide our actions as an instrument of change” (March and Weil 2005, p. 81).

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### Appendix. Fitness Landscapes: A Brief Description

The fitness landscape is a mapping between  $N$  organizational elements and a payoff. A particular configuration of elements  $\mathbf{x}$  is a vector  $\{x_1, x_2, \dots, x_N\}$ . Each element  $x_i$  is set to either 0

or 1. The fitness landscape can thus be expressed as the mapping “ $\rightarrow$ ” between  $X$ , where  $X$  is the set of all possible  $2^N$  configurations  $\mathbf{x}$ , and  $\Pi$ , where  $\Pi$  is the set of all possible payoffs:  $X \rightarrow \Pi$ . In its standard specification, the payoff of any given configuration  $\mathbf{x}$  is calculated additively as the sum of the contributions of each individual element  $x_i$  divided by the number of elements  $N: \pi_i = \sum p_i/N$ . The parameter  $K$  represents the number of elements that affect the payoff contribution of any other element and varies between 1 and  $N - 1$ . For instance, when  $K$  is set to 1, the payoff contribution of a focal element  $x_i$  is unaffected by the other  $N - 1$  elements that comprise the configuration; when  $K$  is set to 5, the payoff contribution of the focal element  $x_i$  is affected by the specific resolution of the focal element and the other four elements. This formal specification generates fitness landscapes with peaks or local optima of different heights and valleys. Each point of such landscapes corresponds to a given configuration of organizational elements. It has been demonstrated (Kauffman 1989) that the ruggedness of landscapes, or the total number of local optima, increases with the parameter  $K$ . Here, the fitness landscape is interpreted as the space of possible returns that any given configuration  $\mathbf{x}$  of organizational elements makes possible at any given point in time. Particularly attractive peaks or superior returns can then be interpreted as strategic opportunities or superior courses of action, which, as argued above, must reflect a failure of some sort in the price system.

### Endnotes

<sup>1</sup>In the last quarter century, there has been abundant work within this paradigm that implicitly or explicitly shares this view of superior opportunities. This work has sharpened our understanding of how firms can deal with the constraints imposed by path dependency. As Gavetti and Levinthal (2004) note, scholars who share these premises have shed light on a variety of issues, including firm learning (e.g., Cohen and Sproull 1991, March 1991, Argote 1999, Greve 2003), the path-dependent development of capabilities (e.g., Cohen and Levinthal 1990, 1994; Kogut 1991; Helfat 1994), the importance of honing “dynamic capabilities” (e.g., Teece et al. 1997, Eisenhardt and Martin 2000, Winter 2003, Helfat et al. 2007, Teece 2007), the replication of best practices (e.g., Szulanski 2000, Winter and Szulanski 2001), the effects of technological change on an organization’s capabilities and survival chances (Tushman and Anderson 1986, Teece 1986, Mitchell 1989, Tripsas 1997, Henderson and Clark 1990, Henderson et al. 1999), the role of entrants’ backgrounds on the chances of success (Carroll et al. 1996, Klepper and Simons 2000, Helfat and Lieberman 2002), issues of firm boundaries (Silverman et al. 1997, Karim and Mitchell 2000, Zollo et al. 2002, Jacobides and Winter 2005), and knowledge-based views of the firm more generally (Kogut and Zander 1992), among others.

<sup>2</sup>Because the strategy field’s defining mission is to ascertain the causes of superior performance, when something in the paper is referred to as “strategic,” this reference signals the particular significance of “something” vis-à-vis superior performance. For instance, a behavioral theory of strategy is meant to signify a behavioral theory of superior performance. “Strategic leaders” refers to leaders whose decisions are especially central to superior performance.

<sup>3</sup>Strategic representation will be used to denote a firm’s core conception of its position in a given domain, where “position”

denotes the firm's conception of how it relates to other firms in the arena in which it competes. This usage is broader than its standard use in the positioning school of strategy (Porter 1980), which first conceived of positions in terms of generic strategies, as defined along the dimensions of differentiation, focus, and low cost. Any position can be reduced to these dimensions, but the mental image a firm holds of its position need not correspond to them.

<sup>4</sup>Brandenburger et al. (1992) establish a game-theoretical equivalence between correlated equilibria, where agents are boundedly rational and have common, or "objective," priors and ones where agents are fully rational but have different, or "subjective," priors. This finding can be reinterpreted in the context of a BTS to suggest that opportunities can remain untapped even when agents see relevant opportunities because subjective priors about the relevant uncertainty surrounding such opportunities dissuade agents from pursuing them. In this sense, the case of subjective priors can be understood as a form of bounded rationality with effects identical to those resulting from the constrained foreseeability of opportunities.

<sup>5</sup>As White (1992) argues, identity is relational. Identities are created as an entity (e.g., individuals, groups, and firms) that begins interacting with and comparing itself to other entities. When an entity is new to a given arena, the identity that is developed establishes "some sort of stable social footing so that [it] know[s] how to act in an otherwise chaotic social world" (White 1992, p. 312). Identity is triggered by perceptions of both similarity to and differences from other relevant entities: "Having an identity requires continually reproducing a consistent joint construction out of actions from distinct settings" (White 1992, pp. 7–8). When a firm develops its strategic representation—its internal conception of how it relates to other firms within its competitive arena—it defines implicitly the central traits of its own identity vis-à-vis other firms (Labianca et al. 2001) and key constituencies to which it relates.

<sup>6</sup>As discussed, the payoff surface can also change as a by-product of competition for opportunities. In landscape terms, heavy competition for a given opportunity results in the collapse of the peak corresponding to the opportunity.

<sup>7</sup>A caveat is in order. Some focal phenomena of a BTS involve complex collective dynamics. For instance, it is hard to induce organizational members to espouse a strategic representation that conflicts with ingrained identity codes. In a BTS, this challenge is considered "behavioral" because it reflects strategic leaders' limited ability to influence mental processes. Clearly, exercising this aspect of agency properly requires managing an array of sociostructural factors. To the extent that these factors are relevant to leaders' ability to influence focal mental processes, they are important to the challenges a BTS must address. We follow Simon's (1996, p. 73) observation that to understand complex aggregate phenomena one must first "apply to them what you know of human behavior generally"; what follows in this section seeks to identify the aspects of human behavior (intended at the individual level) that are relevant to BTS. The challenge of connecting these microlevel insights with more aggregate perspectives and evidence is left to future research.

<sup>8</sup>For notable exceptions, see Eccles and Nohria (1992, 1998), who emphasize the centrality of rhetoric to strategy, and Hambrick and Mason (1984) and Finkelstein et al. (2008, p. 4), who focus on the importance of executives' "characteristics,

what they do, how they do it, and particularly, how they affect organizational outcomes," especially "executives' experiences, values, personalities, and other human characteristics."

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