Toward a Behavioral Theory of Strategy

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Toward a Behavioral Theory of Strategy

Abstract. This article proposes 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 therefore 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. The key insight derived from it is that superior opportunities tend not to correspond to common, taken-for-granted ways of thinking, but are instead cognitively distant. The reason for this is that it is necessary to overcome especially acute behavioral bounds in order to pursue these opportunities. This insight contrasts with mainstream behavioral approaches to strategy, which have focused on the virtues of local action. Its implications are twofold: a) the behavioral essence of superior performance corresponds to strategic leaders’ superior ability to manage the mental processes necessary to pursue cognitively distant opportunities; and b) pursuing the cognitively distant implies a more expansive conception of strategic agency (e.g., the role of strategic leaders) than is currently acknowledged. The challenges posed by this conception of strategic agency can be met, but doing so requires a model of human cognition that goes beyond the understanding of bounded rationality that underlies current behavioral strategy research. The second part of the article assesses the traits of a model of human mind that can support the behavioral conception of strategic agency advocated. It makes the case for a unified model of human mind that is centered on associative processes.
§ 0. Terminological premise

The term “behavioral” has a long history in the social sciences. Despite this history, or perhaps because of it, the term retains many ambiguities. This article 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.”

§ 1. 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: 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: 84).

Here, we find the premises of a behavioral theory of superior performance that maintains the importance of looking beyond the proximate. Schumpeter suggests that economic agents need not passively receive a cognitively defined status quo. Rather, they can manage—challenge, stretch, and change—shared mental representations of reality and act accordingly. Because it is possible to manage these mental or cognitive structures, it is also possible to discover, pursue, and enact cognitively distant opportunities, those 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: 29). The implication is 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: 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: 986).

Here, we see the premises of a more familiar behavioral theory of superior performance--one that negates any forms of "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 happens primarily in the neighborhood of current activities, and superior performance is derived from a superior ability to manage the cognitive processes underlying the intelligence of local action. This view reflects the incremental sensibility of mainstream behaviorally-oriented strategy work, often dubbed the “capability paradigm” (Gavetti and Levinthal, 2004). Rooted in the premises and ideas of the Carnegie School’s bounded rationality program (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, cf. Argote and Greve, 2007, and 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).​

1 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 conscious, path-dependent development of firm capabilities (e.g., Kogut, 1991; Cohen and Levinthal, 1994; 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 routines and best practices (e.g., Szulanski, 2000; Winter and Szulanski, 2001; Zollo and Winter, 2002), the effects of technological change on an organization’s capabilities and its chances of survival (Tushman and Anderson, 1986, Henderson and Clark, 1990), the relationship between the kinds of capabilities that incumbents possess and the probability they will be displaced by a technological change (Teece, 1986, Mitchell, 1989, Tripsas, 1997, Henderson et al., 1999), the role of entrants’ backgrounds on the likelihood these entries will succeed (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,
Consider the contrast between these two images. Both have a behavioral emphasis: The root of superior performance lies 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; in the former, less austere assumptions about such bounds allow strategic leaders to have a greatly expanded role. This contrast suggests that if Schumpeter is even partially right, current behavioral theories of superior performance may overlook an important part of the superior performance equation. This observation leads to the hypothesis that motivates the present article: Much of the current mainstream is locked into overly strict assumptions about the bounds of human rationality. If this hypothesis is true, the extent of what strategic agents can reliably control is generally 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, presenting a major opportunity for behavioral studies of strategy.

This article 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 is the nature and what are the boundaries of the “mental interventions” that would most benefit their firms’ performance and which are therefore critical to their role? This agenda depends not only on the understanding of the full set of possible

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

3 The existence and nature of this opportunity can be read in terms of intimations that recent developments in the behavioral sciences that are relevant to understanding of firm behavior have not been fully absorbed by work based on the Carnegie School’s foundational principles (Gavetti et al., 2007).
mental processes that, if properly managed, could positively influence performance. Rather, it requires an
evaluation of these drivers in terms of what strategic leaders can realistically do to affect them. Something can
be important to performance in theory, but have no implications for agency if it is not controllable. Therefore,
this article first derives a theoretical structure that attempts to assess systematically central behavioral drivers
of superior performance. It then suggests the traits of a model of mind that supports the agency implications of
this structure.

*Preview.* The premise of the theory presented below is that, in order 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 quickly competed away by
many rival economic actors. Therefore, establishing what causes violations of market efficiency illuminates
the root causes of strategic opportunities’ existence. Following this logic, the behavioral roots of superior
opportunities can be understood in terms of behavioral factors that hinder efficiency. The theory proposed
below seeks to isolate such factors by identifying systematic behavioral bounds or impediments to
competition. These bounds are behavioral in the sense that they reflect limitations in strategic leaders’ ability
to manage mental processes, and will be called *behavioral failures*, short for behavioral market failures.
Systematic behavioral failures ensure that opportunities whose pursuit requires the management of especially
hard-to-manage mental processes are not competed away, even if competition is intense. Hence, a given firm’s
superior performance rests in part on its strategic leader’s superior ability to overcome focal behavioral
failures. Thus, managing the mental processes that underlie behavioral bounds is central to strategic leaders’
role. This premise sets the parameters of the behavioral theory of strategy (BTS from now on) proposed here.

The first part of the article identifies behavioral failures (§ 2). Focal behavioral failures are argued to
revolve around the dimensions of rationality (or the ability to identify opportunities), plasticity (or the ability to
act on opportunities), and shaping ability (or 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—courses of action that do not correspond to taken-for-granted, customary ways of thinking. Economic agents can identify, act on, and legitimize cognitively proximate courses of action more easily than they can distant ones. Indeed, evolutionary and ecological perspectives demonstrate 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 the article’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. Importantly, this proposition does not imply that local opportunities do not exist or that “persistent performance differentials among seemingly similar enterprises” (as Gibbons (2006) would call them) do not exist or are negligible. Such differences have been documented and can be large (cf. 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 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.

The second part of the article shows that such an expansive notion of strategic agency is justified in light of what we now know about the human mind (§ 3). The average strategic leader’s failure to perform cognitive tasks that are necessary to successfully pursue cognitively distant opportunities does not mean these tasks cannot be understood and made more tractable. To this end, the article poses some coordinates for a model of mind that begins to shed light on the root causes of behavioral failures. This discussion signals the need to rethink the model of mind that supports much current behavioral strategy work, a model that encapsulates the bounded rationality of local learning and routinized action. First, distant foresight is necessary to identify opportunities that are not cognitively proximate. Distant foresight requires strategic agents to form appropriate representations of their decision problems that coarsen the space of alternatives and draw cognitively distant opportunities nearer. This need characterizes the type of bounded rationality that
is instrumental to a BTS, which differs from the predominant conception. Second, plasticity and shaping-ability bounds are rooted in the difficulty of persuading relevant audiences—those internal and external to the organization, respectively—to endorse novel representations that correspond to distant opportunities. Thus, a focus on bounded rationality must be coupled with a focus on bounded persuadability. Third, meeting the dual challenges of forming appropriate cognitive representations to foresee distant realities and of persuading relevant audiences to endorse novel representations involve mental processes that have a common root in their associative nature. Analogies can help strategic agents intelligently re-represent or re-categorize the problem at hand, affording distant foresight. Regarding persuasion, when an audience is presented with a new conception, it evaluates it associatively. The new conception will evoke mental structures such as categories, and it will be represented in terms of such structures. The crucial implication is that the human mind’s associative nature can be taken as the fulcrum of a parsimonious, unified model of mind that addresses the leadership challenges posed by a BTS. Therefore, central to countering behavioral failures is the effective management of associative processes.

The article concludes with a brief discussion of the research agenda disclosed by a BTS, and with a discussion of its position vis-à-vis contemporary strategy research (§ 4). In this regard, the key point is that behavioral strategy research that focuses on capabilities has underplayed the strategic importance of non-incremental opportunities. In contrast, distant opportunities are central to other mainstream approaches to strategy—especially the positioning school—which have underplayed the behavioral side of strategic leadership. By jointly highlighting distant opportunities and behavioral failures, a BTS promises not only to redefine strategic leaders’ role, but also to help reconcile different strands of strategy research.

§ 2. Behavioral Failures and the Traits of a Behavioral Theory of Strategy

The behavioral theory of strategy proposed here proceeds from several premises about failures in the price system. These premises are not original. They are in the same vein as market failure theories of performance that take the first theorem of welfare economics (Debreu, 1959) as their point of departure (Barney, 1986;
Denrell et al., 2003; Lippman and Rumelt, 2003; Makadok and Barney, 2001; Oberholzer and Yao, 2007; Yao, 1988). They suggest that failures in the price system are necessary for superior opportunities to exist. To the extent that these failures have behavioral roots, the behavioral origin of superior performance can be identified against the benchmark of market efficiency. Three distinct classes of systematic behavioral limitations—or behavioral failures—are identified which are central to preserving inefficiencies and therefore define the essence and boundaries of the behavioral theory of strategy proposed here.

I. Setting the stage: the thought experiment

The first of these premises is that the elements which comprise any given organizational course of action—whether they are activities, resources, or any organizational trait embodying a course of action—have ultimately been purchased in the factor market. “Ultimately” implies that even complex, idiosyncratic, “homegrown” resources or factors (e.g. routinized procedures) that might not have their own market (Wernerfelt, 1988; Montgomery, 1994) stem from the transformation of simpler factors purchased in factor 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 dramatically influence the efficiency of equilibrium prices in competitive markets (Makowski and Ostroy, 1995). Goods that have a positive price under conditions of market completeness could be unpriced or have significantly lower prices if markets are incomplete (Lippman and Rumelt, 2003). For instance, before Wal-Mart existed, the actual prices of some of its future constituent factors (e.g., the price of land in certain primary locations, etc.) were presumably below their potential value within Wal-Mart’s system. In this sense, Wal-Mart’s embodiment of a superior course of action, as manifested in its competitive advantage (or ability to command a superior wedge between customers’ willingness to pay and suppliers’ opportunity costs (Brandenburger and Stuart, 1996), can be understood as reflecting some incompleteness in
the factor market. Further, 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 Wal-Mart’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 cannot realistically be expected to be satisfied in actual competitive markets (Grossman and Stiglitz, 1980; Stiglitz, 1982; Lippman and Rumelt, 2003). Denrell et al. (2003) emphasize that market incompleteness is likely to be 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 Wal-Mart’s) that affects the values of currently traded goods is necessary for superior returns to be obtained.

In sum, failures in the price system are both normal to the functioning of real competitive markets and necessary to the existence of opportunities. Understanding why inefficiencies are preserved despite intense competition therefore opens a window onto the origin of superior opportunities. Here, the focal 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 profit-seeking firms looking for opportunities and incomplete factor markets. In this situation:

a) What hypothetical behavioral conditions must be met such that firms’ competitive action leads to the approximation of efficient outcomes by drastically limiting or eliminating possible discrepancies between factor prices and their values – that is, by exhausting opportunities?

b) 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 deviations from the behavioral conditions required by market efficiency. These deviations or impediments to competition will be called behavioral bounds or failures; ii) The behavioral origin of superior performance corresponds to some firms’ superior abilities to overcome behavioral failures.

II. 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 (or “behavioral bound”) refers to systematic limitations along select dimensions of firms’ activities that are critical to efficiency outcomes because of their central impact on competition for latent opportunities. If all firms were unbounded along such dimensions, competition for latent opportunities would have no bounds and would thereby lead to approximations of efficiency outcomes: latent opportunities would quickly be competed away. 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 underlying mental impediments to the pursuit of and competition for opportunities. In this sense, behavioral failures can be cast in terms of strategic leaders’ limited ability to manage or affect these mental processes. If leaders were not bounded in their ability to manage focal mental processes, behavioral failures would not exist.

In what follows, relevant behavioral failures (or bounds) are identified and their nature is 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 realistic behavioral assumptions, resulting in the characterization of behavioral failures. The emphasis is on particularly severe behavioral bounds. Superior untapped opportunities are expected to be those whose pursuit involves overcoming especially severe behavioral bounds: the more
severe the bounds are, the less likely it is that latent opportunities are pursued and competed away. Figure 1 offers a graphical interpretation of this principle. Each point of the figure can be interpreted as a potential opportunity. The three dimensions represent the severity of the bounds that are necessary to overcome in order to realize a given opportunity. Opportunities are more difficult to pursue (because they require overcoming increasingly more acute behavioral bounds) when they are farther from the origin. Moving from O and surrounding points (a situation in which economic agents are unbounded along the dimensions considered here), to A and surrounding points, and then to B and surrounding points, one should expect an increase in the probability that truly superior opportunities exist.

Figure 1. The Opportunity Box

In the spirit of logical transparency, it is useful to analyze behavioral failures by making illustrative use of the formal apparatus provided by the NK fitness landscape (Kauffman, 1989; Levinthal, 1997; Rivkin, 2000). In addition to capturing closely the essence of opportunities (each point of the landscape corresponds to a configuration of organizational elements; the landscape thus represents the space of possible returns that any given configurations x of organizational elements makes possible at any given point in time), and offering
helpful analytical guidance, the NK formal structure has been used extensively to address issues that are relevant to the current question. Some of the insights generated in this intellectual tradition 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 $\{x_1, x_2, \ldots, x_N\}$. 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: $X \rightarrow \Pi$. A more complete more detailed description of fitness landscapes is in the Appendix.

**Rationality.** Strategic opportunities must reflect asymmetries between prices and 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, or complete rationality, which “[r]equires a complete knowledge and anticipation of the consequences that will follow on each choice” (Simon, 1947).

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 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 involved in meeting this condition, it is important to consider three related facts. First, firms in most industries cluster around a relatively small number of positions or strategic groups (e.g., 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 limited set of basins of attraction, which are defined as those points of the landscape that lead to a common peak via a process of local search (Kauffman, 1993). 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: 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 highly similar core strategic representations -- the firm’s conception of its position in a given competitive space (Gavetti and Levinthal, 2000: 125). The resulting image is thus one in which firms in an industry generally end up populating a small fraction of areas in the landscape. Within such areas, they share similar 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) 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 that achieving it is easy, especially in situations of high complexity. For instance, suppose Wal-Mart is evaluating 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 Wal-Mart’s leaders consider expanding from rural locations

\[\text{From now on, strategic representation will be used to denote a firm’s core conception of its position in a given domain. “Position” here is used to define the firm’s conception of how it relates to other firms in the arena in which it competes. This usage is broader than is its standard use in the positioning school of strategy (Porter, 1980), which originally conceived of positions in terms of generic strategies, as defined along the dimensions of differentiation, focus, and low cost. Clearly, any position can be reduced to these dimensions, but the actual mental image that firms hold of their position needs not correspond to them.}\]
into urban areas, this choice corresponds to envisioning the payoff or value implications 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 upon the \( K \) other elements with which \( x_i \) is interdependent: 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 potential 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, the cognitive basis of distant foresight involves different mental processes that are more difficult to perform reliably. As Simon (1947) notes regarding distant foresight, “[s]ince 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 not only 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 those courses of action that are distant and impossible to spot through different representations (Nelson, 2008). For instance, when Charlie Merrill re-represented the managed investment business in terms of the supermarket business, he foresaw the attractiveness of the “financial supermarket” concept, which his firm Merrill Lynch pioneered (Perkins, 1999). In this case, a new representation for the business – managed investment firms as supermarkets – led Merrill to identify a new strategic representation for the firm – the financial supermarket concept. Once Merrill 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, more prevalent representations of managed investment that hid the “financial supermarket” concept from their view of the industry. While
appropriate representations can allow strategic leaders to identify cognitively distant alternatives and assess their likely outcomes, choosing or developing them is not easy. Further, strategic leaders tend to be cognitively inert (Finkelstein et al., 2008; Hambrick and Mason, 1986; 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 given competitive context, numerous potentially attractive 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 basins of attraction or positions, and are sharply bounded in their distant foresight, or 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 will thereby identify similar opportunities, the probability of finding undervalued courses of action in the neighborhood of populated areas is generally low. To the extent that some low-hanging fruits are initially available, they will be picked quickly. Firms need to look more distantly, outside of their basin of attraction, and that is hard to do. It requires the choice of appropriate cognitive representations for spotting superior opportunities that are cognitively distant for most economic agents in the competitive context.  

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 representations.

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5 Brandenburger et al. (1992) establish a game-theoretical equivalence between correlated equilibria in which agents are boundedly rational and have “objective” or common priors and ones in which agents are fully rational but their priors are different, or “subjective”. This finding can be reinterpreted in the context of a BTS to suggest that opportunities can remain untapped not because agents do not see relevant opportunities, but rather 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.
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.

**Plasticity.** Full rationality is necessary but not sufficient to negate the existence of opportunities. Competing firms might be fully rational and know where superior opportunities lie, but 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 organization would unexpectedly get stuck on its way to the peak due to inertia or bounded plasticity, with possibly dire effects on its survival prospects. In this case, when the identification of 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 encompass a lack of bounds not only in firms’ rationality, but also in their plasticity.

Firms generally fall far short of satisfying the condition of unbounded plasticity (Hannan and Freeman, 1977, 1984; Ghemawat, 1991; Rumelt, 1995), as shown by abundant evidence of the costs and mortality consequences of reorganizations or discontinuous strategic changes (Barnett and Carroll, 1995; Tripsas and Gavetti, 2000; Sull, 2003). The question of whether the condition of full plasticity is met is therefore 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 above that the power of local foresight, together with the clustering of firms around select areas of the NK fitness landscape, guarantees that most proximate opportunities are noticed. Even assuming that inertial forces prevent some firms from acting on such local 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 such opportunities. This conclusion is strengthened by the fact that local, incremental changes typically face less resistance than long jumps do (Levinthal, 1997). Consequently, existing opportunities tend to be distant, away from heavily populated basins of attraction. 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 (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 engage with and ultimately 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 therefore problematic insofar as identity-violating changes are especially destabilizing and associated with high mortality rates (Baron et al., 2001; Hannan et al., 2006).

Perhaps the most relevant reason for this tendency is that such violations generally trigger strong cultural opposition or asperity (Hannan et al, 2003b and 2007), especially when key 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 central decision premises for local identities (Simon, 1947; Kogut and Zander, 1992; 1996). As March (1981: 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.

A second reason has to do with the complexity of the change that identity violations imply. Because firms’ strategic representations are core to what firms do, violating them usually sets off cascades of changes (Hannan et al., 2003a, 2003b, 2006; Ghemawat and Levinthal, 2006). These changes generally require firms both to acquire new capabilities at the sub-system level, which is difficult (Dosi et al., 2000), and change the

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6 As White (1992) argues, identity is relational. Identities are created as an entity (e.g., individuals, groups, and firms) 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: 312). Identity is triggered by perceptions of both similarity to and difference from other relevant entities: “Having an identity requires continually reproducing a consistent joint construction out of actions from distinct settings” (White, 1992: 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.
architecture governing said sub-systems, which poses additional challenges (O’Reilly and Tushman, 2008). As Henderson and Clark (1990) argue in regard to product innovation, the emergence of dominant designs establishes architectures that link the subsystems a given product comprises. Because the architectures (or architectural knowledge) in industries characterized by stable dominant designs are also stable, they “tend to become embedded in the practices and procedures of the organization” (Henderson and Clark, 1990: 15). This knowledge is implicit, and organizations that face changes in dominant designs, and therefore need architectural changes, frequently have a hard time recognizing this need (O’Reilly and Tushman, 2004; Smith and Tushman, 2005). “The introduction of new linkages…is much harder to spot” (Henderson and Clark, 1990: 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 becomes more evident. This challenge is related to more than the limitations posed by the path dependency of learning and local search. It requires firms to acquire and embrace the new strategic representation that provides an overarching frame to guide and coordinate search efforts in the various domains of activity the firm is engaged in (Tripsas and Gavetti, 2000), and to channel and structure 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.

**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 know where latent superior opportunities lie, fully plastic and able to act frictionlessly on them, but substantially bounded in their ability to legitimize these
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 its elements’ current values 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. In contrast, other firms, such as Yahoo!, adopted a media representation, and were especially proactive in persuading external stakeholders that this perspective was viable. After an initial period in which these alternative conceptions competed for attention and resources, key external actors – financial analysts, specialized press, potential customers, etc. – endorsed the media representation and rejected alternative ones. As a result, most companies in the business adopted a media representation and moved away from other conceptions (Gavetti and Rivkin, 2007). In this case, a potentially superior course of action remained untapped in part because of firms’ 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 encompass a lack of bounds not only in firms’ rationality and plasticity, but also in their ability to legitimize opportunities (or ability to shape the opportunity space to their advantage).

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 what firms do (the courses of action “X” they can pursue) and their payoffs “II”, and that firms cannot deliberately influence this mapping. This assumption implies an external “reality” as represented by the fixed topography of the performance landscape. 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 the importance of legitimation relaxes this restriction. 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

7 As discussed above, the payoff surface can also change as a byproduct of competition for opportunities. In landscape terms, heavy competition for a given opportunity results in the collapse of the peak corresponding to the opportunity.
their potential to be expressed. Indeed, as the Internet portals example illustrates, firms actively compete to legitimize alternative forms or courses of action, thereby shaping or altering selection criteria. This behavior is diffused (cf., for instance, Porac et al., 1995; Pollock et al., 2004; Barron, 1998; Khurana, 2007), and is somewhat similar to what happens to biotic organisms (Odling-Smee et al., 2003). In landscape terms, this behavior corresponds to the *shaping* or construction of the landscape: areas of the landscape corresponding to conceptions that, partly due to firms’ proactive efforts, become legitimized will rise relative to those reflecting less legitimate courses of action.

Legitimation has important behavioral roots. For instance, recent work in population ecology has shown that collective sense-making 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, 2009) 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 the processes leading to their formation are in part emergent, individual firms can affect them by competing through symbolic actions (Zajac and Westphal, 2004; Fiss and Zajac, 2006) as well as substantive ones (Cattani, 2005).

As with rationality and plasticity, there must be bounds in shaping-ability for this kind of activity to affect opportunities. If firms were unbounded in their shaping-ability, all firms in a given competitive arena would successfully enact representations or categories that accommodate their proposed courses of action. The logical consequence would be the withering of legitimacy effects: if all firms pursuing novel opportunities were able to 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.
The key logical requirement for meeting the condition of unbounded shaping-ability is a lack of bounds in an individual firm’s ability to shape the socio-cognitive processes that lead key external parties to recognize and endorse a particular course of action. This requirement implies that firms have boundless ability to persuade multiple parties (which are only partially known or understood) that a particular conception or course of action is viable. It is manifestly implausible that this requirement is met fully, particularly if the new course of action is significantly cognitively distant from the status quo, and thus more likely to challenge beliefs about what is legitimate in a given context. Even if relevant audiences can be persuaded that any conception underlying a form is viable, and that multiple, potentially contradictory conceptions can coexist at any given point in time (Zuckerman and Kim, 2003), the ways in which schemas are formed is complex and only partially understood. Further, and at a more micro level, the psychology of persuasion—how to interpret what people think and how to affect it—offers only approximate answers and tools despite major advances in recent years (e.g. Lakoff, 2004; Zaltman and Zaltman, 2008). 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, 2009). Stated differently, the average firm fails to persuade external audiences, especially when the pursuit of cognitively distant opportunities is at stake. From these facts, the assumption that strategic leaders are profoundly limited in their ability to set out processes for persuading external audiences, particularly to legitimate distant courses of action, follows naturally.

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.
Behavioral Failures, Together. The behavioral origin of strategic opportunities reflects behavioral bounds that are systematic, and therefore widely shared across firms. Because these bounds are systematic, some latent superior opportunities, especially those whose realization requires overcoming particularly acute bounds, are not competed away. Yet, as Propositions 1, 2, and 3 suggest, just because these bounds are systematic does not preclude deviations from average behavior. Some firms can be better at overcoming them, thus being superior at realizing untapped opportunities, and therefore better performance. Notably, behavioral failures typically become more pronounced as they correspond to courses of action that are more cognitively distant. Untapped superior opportunities thus tend not to lie within the purview of existing ways of thinking. These properties can be taken to suggest the central proposition of a behavioral approach to strategy as it is conceived here.

Proposition 4a: Existing superior opportunities tend to be cognitively distant because realizing them generally poses challenges that outstrip focal behavioral bounds that are systematic and widely shared by the average firm. Thus, cognitively distant opportunities tend to be less contested than more proximate ones are. Focal behavioral bounds relate to the abilities to identify, act on, and legitimize opportunities.

Proposition 4b: Given Proposition 4a, 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. This source of superior performance lies 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. A critical component of firms’ strategic behavior can then be conceived in terms of their leaders’ proactive drive to manage such cognitive processes.

§ 3. What Model of Mind? Rethinking Bounded Rationality…and Beyond

This article 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. This sensibility has a long intellectual history. As stated above, it can be traced back to the Carnegie School, particularly to the intellectual lineage of that school which takes the constructs of individual habit and collective routine as building blocks for its understanding of firm behavior (Nelson and Winter, 1982; cf. Cohen, 2007 for a historical perspective). Central to this lineage is the presumption that 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). Thus, although economic agents cannot reliably attain intelligence for decisions requiring anticipation of future
environments, they can become capable 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. This is why, in this literature, strategically relevant action is incremental. 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 the ways in which these routines “may change in the very process of being enacted in new circumstances” (Cohen, 2007: 505). Strategic agency is defined accordingly.

The theory of behavioral failures proposed above agrees with many of the dominant paradigm’s premises, but invokes a more expansive behavioral conception of strategic agency. As does the dominant paradigm, it recognizes the existence of systematic behavioral limitations 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 current knowledge about human mind can be used to understand their roots and suggest how they can be countered, a more expansive notion of strategic agency can be afforded. The theory proposed above takes on the first part of this challenge by identifying focal behavioral bounds. The material below addresses the second part of this challenge. It shows that the proposed conception of agency can be grounded in current knowledge about the human mind.\(^8\)

The argument first crystallizes what the proposed conception of strategy agency requires from a model of mind.

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8 A caveat is in order. Some focal phenomena of a BTS involve complex collective dynamics that are beyond this paper’s scope. Take, for instance, the challenge of inducing organizational members to espouse a strategic representation that conflicts with taken-for-granted identity codes. In the present framework, this challenge is considered “behavioral” because it reflects a limitation in strategic leaders’ ability to influence how members of their organization think. Clearly, this limitation reflects an array of socio-structural factors. To the extent these factors are relevant to the ultimate unit of analysis – leaders’ ability to influence focal cognitive processes – they are important to the challenges a BTS must address. Following Simon’s (1996: 73) observation that in order to understand aggregate phenomena, it is important to “apply to them what you know of human behavior generally,” however, what follows focuses exclusively on a model of mind at the individual level. The challenge of connecting these micro-level insights with more aggregate perspectives and evidence is left to future research.
Next, it identifies a pivotal construct for such a model (3.2). It then articulates the central traits of a unified model of mind for a BTS (3.3).

### 3.1 What is needed: revisiting bounded rationality and moving beyond.

For the conception 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, to induce internal audiences to buy into courses of action that require mental shifts, and to induce external audiences to support such courses of action. These aspects of strategic agency are largely absent from the current micro-foundations of behavioral strategy work. Consequently, understanding them requires a different understanding of the human mind.

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

Second, to study how strategic agency affects plasticity and shaping-ability, it is necessary to move away from a model of mind that takes bounded rationality as its only micro-foundational dimension. The common origin of plasticity and shaping-ability failures lies in the difficulty of persuading key audiences to buy into novel courses of action that may require radical cognitive changes. There is thus a need for a model of human mind that captures not only relevant bounds in rationality but also relevant bounds in persuadability.

### 3.2 A pivotal construct: cognitive representation.

The construct of cognitive representation is pivotal to the micro-foundational structure of a BTS. Cognitive representations are defined here as conceptual structures in the minds of individuals that encapsulate a simplified understanding of the reality they 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 critical rationality bounds that correspond to cognitively distant foresight requires the use of appropriate representations that allow strategic leaders to intelligently “look into the distant.” An appropriate cognitive representation of a given business or competitive context allows opportunities to be identified that are otherwise cognitively distant and therefore invisible to strategic leaders who employ other representations. Concerning bounds on plasticity, acting on superior opportunities frequently requires sizable changes in firms’ foundational premises as crystallized in cognitive representations of their strategic identity, and changes to such representations often meet resistance. Strategic leaders’ 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, critical shaping-ability bounds in the legitimation of opportunities correspond to the difficulties of persuading external audiences to endorse strategic representations that are cognitively distant from the status quo.

3.3 Toward a unified model: the associative mind.

A model of mind that meets the needs of a BTS requires the articulation of plausible mental mechanisms that actors 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 is presented with a new situation to interpret, she recognizes it associatively in terms of these structures. The agent’s memory is accessed through some observed or inferred features of the new reality that prime a specific category or situation that is part of that category (Anderson and

9 The argument is not that strategic representations are “the” only defining element of firms’ identity. Other sources of firms’ identities may also be important. For instance, firms’ overarching mission may not be captured by their cognitive representations.
Bower, 1980; Gentner, 1983; Catrambone, 2002); 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 has recently been dubbed “coarse thinking” (Mullainathan et al., 2008), is common and useful in everyday life: it 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 hard-wired.

Forms of coarse thinking like analogy and case-based reasoning can guide effectively strategic leaders’ efforts to derive 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 choice is premised on analytical frameworks that are widely available and therefore diffused among strategists, including external advisors like consultants. Over time, the convergence in representations and strategic frameworks ensures that most opportunities that can be spotted and understood through them will be identified. To break out of this equilibrium, it is necessary to employ novel representations. Analogies to prior strategic contexts are a potentially vast and cognitively plausible source 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 represented through the lenses that are typical of that
type of situation. Whether or not a given 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 they are presented with.

The fact that discovery and persuasion have the same cognitive root should not be surprising. Both reduce
the distance between cognitive entities. The identification of cognitively distant opportunity means that a
conception that was not initially 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 corresponding to the new opportunity, and the agent’s representation of the
business. When the agent revises her representation of the business and identifies an opportunity that was
formerly invisible to her, she reduces the distance between the two entities in her mind. Similarly, when a
strategic leader persuades a skeptical stakeholder that a new opportunity should be supported, she has made
more proximate a representation that was resisted because of its cognitive distance from the stakeholder’s
initial representation of what is an appropriate strategy in the present context. 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 re-categorizations for the strategic
problem at hand. In this case, there are two main classes of difficulties. First, because individuals tend to focus
mainly on opportunities that lie close to their firm’s current activities, it is likely that 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. It is not uncommon for analogizers to 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. Similarly, emotional factors (i.e., an
emotional attachment to industry X) may make the strategist look for instances of industry X even in
profoundly dissimilar contexts. These tendencies will make her look selectively for evidence that supports the analogy, instead of looking for cues that both support and undermine it. In order to draw useful distant inferences, it is necessary to recognize and counter these tendencies.

As for persuasion, the challenge is to 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., 2001), images (Kosslyn et al., 2006), rhetorical devices (Eccles and Nohria, 1992, 1998), or frames for communicating the desired direction, where “proper” takes on a very precise meaning: the activation of cognitive 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 quite difficult, and highlight the severe bounds to persuadability. Furthermore, large portions of these structures operate 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 by reference to a few parameters (Rosch et al., 1976). The science of persuasion is, however, taking only its first steps in this direction.

The prior section ended with the claim that 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 delineate the trait of a model of mind that captures the essence of such bounds and what countering them might entail. In propositional form, its main implications can be expressed as follows:

**Proposition 5a.** The realization of cognitively distant opportunities requires the management of mental processes that are fundamentally associative. Regarding distant foresight, the critical associative process is the appropriate re-categorization or re-representation of the current strategic problem in terms of previously experienced ones. Regarding persuasion, the critical associative process is the communication of a new strategic representation that primes mental categories which accommodate the desired course of action.

**Proposition 5b.** A superior ability to manage these associative processes is a critical component of strategic leadership and crucial source of superior performance.
§ 4. Final Remarks

This article has proposed an analytical structure to assess systematically the behavioral drivers of superior performance. It has focused on behavioral failures that pose especially stringent bounds on 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, for such opportunities to be strategically relevant, they must be attainable. Therefore, it must be possible to develop a behavioral conception of strategic agency that addresses the focal challenges involved in pursuing the cognitively distant. In this spirit, evidence about the human mind has been discussed that can micro-found such a notion of strategic agency. What is especially promising is the realization that the various challenges involved in managing the cognitive distant have a common cognitive root, which lies in the management of mental associations. Accordingly, a unified model of mind that addresses associative processes in their various manifestations represents a solid and parsimonious microfoundational basis to the BTS and the conception of agency advocated.

It can therefore be concluded 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’s “You can also try and change the given circumstances.” This article 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 the one hand, the model of mind discussed in § 3 has been introduced in coarse terms. Its central processes need to be characterized more fully. Some efforts in this direction are underway (e.g. Gavetti and Warglien, 2009). Further, the discussion above does not consider the emotional component of associative
thinking. Emotions can affect both the intelligence of distant foresight and the challenges of persuasion, and should be considered more fully in future research. Further, as indicated above, there are still not answers to several of the 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 footnote 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 micro-level 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 socio-structural 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, 2009; 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 strategic leaders’ role, 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 that major opportunities for developing the model of strategic agency that this paper proposes lie ahead.

In sum, the role of strategic leaders as agents that influence and manage their own and others’ mental processes in pursuing opportunities can be properly defined. Doing so requires the micro-nature of these mental processes and the nature of the socio-structural context in which they occur to be understood jointly. This joint consideration promises to improve our understanding of the origins of behavioral failures and what strategic leaders can do to counter them. As stated above, the opportunity this article 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 micro-level insights with macro-level ones will reinforce this process.

The twin conceptions of superior performance and strategic agency proposed here can be seen as largely complementary to current mainstream approaches to strategy. They highlight drivers of superior performance that have generally been neglected. For instance, they complement work on resource allocation that has focused more extensively on the political dimension of the resource allocation process than the cognitive/behavioral one (Bower, 1970; Burgelman, 1983). Ironically, in an unpublished manuscript, Bower (1967) articulated what is probably the first behavioral approach to strategy. Influenced by Cyert and March’s (1963) behavioral theory of the firm, this work offered an account of a problem-solving approach to business planning. Perhaps closer to the BTS are two vast regions of intellectual inquiry that have traditionally been separate (for exceptions, see Gavetti and Rivkin, 2007; Gavetti et al., 2005; Ghemawat and Levinthal, 2006; Siggelkow, 2001) and that the BTS reconnects to some degree. As mentioned at the outset, 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 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, the roots of the “capability paradigm” lie in a model of human behavior that prioritizes the power of local feedback and adaptation rather than the intelligence of an anticipatory logic. Work in this tradition explains variation in performance largely by reference to “different degrees and qualities of organizational knowledge and competence” (Zollo and Winter, 2002: 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”

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10 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: 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.”
(Zollo and Winter, 2002: 340). Firms compete in the same competitive neighborhood (around the same peak and within the same basin of attraction), 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 given 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 above, however, there are reasons to expect these bounds or failures to be less pronounced than are those that characterize more distant opportunities, and that mainstream behavioral approaches to strategy might have neglected important classes of behavioral drivers of superior performance, namely the ones this article pursues.

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 an increased 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. It continues to operate within this tradition's foundational assumptions about of human behavior, which may not be the most accommodating basis to support a research program that aims to address the challenges posed by the distant. In a somewhat related vein, recent work by O’Reilly and Tushman (2008) pushes the dynamic capabilities framework in ways that emphasize the importance of non-local action. Key to this 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 accounts for important behavioral elements in its interpretation of leaders’ role, especially in regard to organizational identity, but it
does not have a systematical behavioral agenda. It focuses more on how leaders manage contexts, structures, and processes than it does on how they manage peoples’ minds. Nevertheless, in the dimensions of organizational action it considers, this work can be seen as complementary to the BTS proposed here.

Moving to the positioning school, this paper’s emphasis on non-incremental 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: 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 deep 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: 58). With its emphasis on non-incremental 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 that 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 so 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, “Imagination 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, 2004: 81].
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 \( \{x_1, x_2, \ldots, x_N\} \). Each element \( x_i \) is set to either 0 or 1. The fitness landscape can thus be expressed as the mapping "\( \rightarrow \)" between \( \mathbf{X} \), where \( \mathbf{X} \) is the set of all possible \( 2^N \) configurations \( \mathbf{x} \) and \( \Pi \), where \( \Pi \) is the set of all possible payoffs: \( \mathbf{X} \rightarrow \Pi \). 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 \( N \): \( \pi = \frac{\sum p_i}{N} \). 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 it is set to \( K=5 \), the payoff contribution of the focal element \( x_i \) is affected by the specific resolution of the focal element and the other 4 elements. This formal specification generates fitness landscapes with peaks or local optima of different height 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 configurations \( \mathbf{x} \) 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.
References


