SIMON ON ALTRUISM, NEAR DECOMPOSABILITY, AND DESIGN: EXTENSIONS ON A BEHAVIORAL APPROACH TO STRATEGIC MANAGEMENT[1]

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SUMMARY

This paper develops a view of strategic management that is based on the ideas of Herbert Simon in particular, and insights from the behavioral theory of the firm in general. Building on certain well-received elements of his work in strategy, we add implications from his other (rather under-studied) work, especially on altruism, near-decomposability, and design. Each of these fills an important gap at the individual, organizational, and environmental levels of analysis in mainstream strategic management theorizing today. We argue that these three extensions, when integrated, can re-shape future scholarship in strategic management in a manner consistent with key results both from the dynamic capabilities view, and the resource based view.

Keywords: Behavioral Theory of the Firm; Dynamic capabilities; Opportunism; Organizations; RBV; Strategy

Several notable scholars of strategic management have observed and utilized important connections between issues in strategy and the behavioral ideas of Herbert Simon, Richard Cyert and James G. March. For instance, Rumelt et al (1994) noticed that "much of the modern stream of thinking about [strategic] management has its origins in the Carnegie School's 'behavioral' model of the firm" (p. 2). Later, the authors mention Simon's work on Administrative Behavior (Simon, 1947) as an additional precursor for modern firm strategy (p. 15). Furthermore, Sidney Winter (2000) uses Simon's ideas on satisficing and dynamic aspiration levels (Simon, 1955; also see March & Simon, 1958, pp. 48-52) to suggest an ecological and evolutionary perspective. This approach treats learning as a dynamic capability, and employs ideas such as search and aspiration levels based on assumptions of satisficing. Moreover, transaction cost based (or governance based) view of strategy is explicitly built on such behavioral views of bounded rationality, and furthermore maintains the Carnegie spirit of seeing strategy as an inherent interdisciplinary enterprise (Williamson, 1999). Finally, the learning perspective developed by March (1991, 1992) and Levinthal and March (1993) incorporate, not surprisingly, the heart of the ideas of the behavioral theory of the firm. Scholars in the tradition of dynamic capabilities have pointed to ideas on learning as significant elements in our understanding of organizational capabilities (Teece and Pisano, 1994; Teece et al, 1997, p. 520). Recently, insights from the behavioral perspective have also been used to develop a critique of the resource based view of strategy. For instance, Bromiley and Flemming (2002)[2] argue that perspectives based on the behavioral theory of the firm offer important insights into the development of a theory of

[2] Perhaps we shouldn't be surprised by these connections, for they are personal as well as intellectual. Of the contributors mentioned here we should mention: Oliver Williamson was a student at Carnegie with March, Cyert and Simon and much of his subsequent work has aimed at working behavioral ideas into the heart of modern economics (Williamson, 1996). Philip Bromiley also was a Carnegie student. Sidney Winter, while not a student at Carnegie, had close connections with the Carnegie School and his book with Richard Nelson developed central ideas in behavioral theory into modern evolutionary thought. Finally, while the connections to Rumelt and Schendel are

strategy which can accommodate ideas such as market disequilibrium, firm behavior, and the interaction of firms in markets. So, there are plenty of reasons for examining the relations between the behavioral perspective and these modern perspectives which, implicitly or explicitly, often rely on behavioral ideas.[3] We shall return to detailing some of these connections in section 4 below. For now, it is sufficient to note that although many significant contributions (and contributors) to strategic management have a behavioral / Simonian flavor, little attention has been paid to spell out in detail Simon's ideas or integrate them into strategy, despite Simon's own contribution to this journal (1993a).

We suggest that a behavioral approach (based on key ideas from Simon, Cyert and March) to strategy is promising not only as an aid to our understanding of fundamental issues in the management of organizations but also in terms of its potential for future research in strategy. To illustrate the essential elements of our perspective and its connections to other approaches, the paper ends with a table of comparisons (Table 1) between the behavioral view and current approaches such as RBV and dynamic capabilities.

We begin, however, with the overall behavioral view that the task of managers in firms, private and public, consists largely in making decisions and solving problems given many imperfections such as bounded rationality, imperfect environmental matching and uncertainty. Using the rather bold but broad brushstroke of cognitive science, we can divide strategic decision making tasks of managers into two main areas, that of problem finding and problem solving. The first consists of choosing issues of strategic significance such as anticipating and setting agendas,

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less obvious, David Teece is a 'grandchild' of Carnegie, following many of Williamson's ideas, but also developing them into a less mainstream, and more behavioral, framework (Teece, 1998; Dosi, 2002; Teece et al, 2002).

[3] An example emphasized by Bromiley and Flemming (2002) is that the argument from the resource based view that 'routines matter', an important aspect of behavioral theory is adopted – bounded rationality – while they ignore that bounded rationality is a theoretical necessity for the idea of routines (March and Simon, 1958; Cyert & March, 1963).

creating and setting goals, and finding and designing alternative courses of action. This area is usually understudied and often ignored in current theories of strategic management. The second involves evaluating and choosing among alternative actions. This is often cited as the *only* problem of decision making and is not a trivial task since, first, the consequences of each action are fundamentally unknown and uncertain; and, second, comparisons between alternatives are complicated by the absence of consistent utility functions (for managers and organizations). Because problem solving is fundamentally a subset of decision making, we shall refer to them interchangeably in the following.

DECISION MAKING AS A FOUNDATION FOR STRATEGY

A behavioral theory of strategic management has to begin with the central idea that decision making consists in finding a satisfactory solution (satisficing), rather than in searching for the best possible alternative (optimization). For, behaviorally speaking, strategic management is the art if dealing effectively with the challenges of bounded rationality in a changing and uncertain environment.[4] The decision problem as it confronts managers in strategic decision making situations is one of finding (sometimes, even, creating) a course of action which will fulfill the aspiration of the organization. Sometimes, this involves the creation of new alternatives among which managers can choose. And sometimes, managers must search not only for the solutions to the problems, but for the problems themselves (Simon, 1955b). This requires the ability to set up new aspirations and to use imagination in creating new strategic possibilities (March, 1995). Looking at strategic decision making from an information processing

perspective, we follow Simon in accepting the inadequacy of perfect rationality. "The capacity of the human mind for formulating and solving complex problems", Simon wrote, "is very small compared with the size of the problems whose solution is required for objectively rational behavior in the world – or even for a reasonable approximation to such objective rationality" (Simon, 1957, p. 206).

It is widely recognized that effective strategic decision making is important for the evolution of organizations, and for the creation and capture of value. The abilities and skills that determine the quality of the manager's strategic decisions and the creation and solution of problems, however, are stored in individual minds and organizational memory and routines (Nelson & Winter, 1982; Teece and Pisano, 1994). Understanding how human minds, with and without the help of the organization, solve problems and make decisions effectively, is a step towards improving the firm's strategic problem-solving and decision-making capabilities. This calls for a truly interdisciplinary conception of strategy which ought to draw on advances in understanding problem solving and decision making within the domains of psychology, economics, organization theory, and cognitive science (Simon, 1993a). And while the need for an interdisciplinary perspective on strategic management has been recognized (Rumelt et al, 1994; Teece et al, 1994; Williamson, 1999), notions such as satisficing, heuristics, and aspiration levels that are central to Simon are largely absent from contemporary approaches to strategy and have not yet been developed into a behavioral (or Simonian) theory of strategy. As David Teece et al noted: "While the influence of [behavioral ideas] on subsequent work in economics .. is well established, one significant aspect of this work that is frequently overlooked is the role it has played in the development of theories of firm strategy" (Teece et al, 2002, p. 81). Our suggestion

[4] The link between bounded rationality and satisficing was first made explicit in Simon (1955a) although the idea of limited rationality dates back to at least Simon (1947). Winter (2000) discusses a satisficing approach to strategic

in the following for a behavioral/Simonian theory of strategy, therefore, is based on the view that the behavioral contributions offer a rich set of ideas valuable to firm strategy.

The Content: Strategy as Decision Making

According to Simon (1993a), strategy is part of the study of decision making about external, internal and historical issues. It involves external decisions because it is about the 'big decisions' facing organizations. However, because of the imperfect match between a firm and its environment, we also need to pay attention to the decision processes within the organization. Thus, according to Simon, "correct decisions about a firm's product and markets must necessarily take into account the characteristics of the firm – in terms of its human, organizational, physical, and financial resources – that constitute its comparative advantage" (p. 131). Finally, it has historical elements because firm strategy is necessarily built on the history of the firm. The argument that firms evolve through a history of experiences is embedded in the idea of firms and environments adapting to each other (March, 1994).

As a result of these characteristics, Simon finds, we must think of strategic management as evolving within an evolutionary setting. This means that we can understand the evolution of firms and firm strategy as combinations of processes of environmental selection and rational adaptation. Such processes may be path-dependent and they often represent imperfect adaptation (in essence, because firms have 'inefficient histories', cf. March, 1994). As a result, even with intended rationality, while processes of improvement and learning can lead to progress, they cannot guarantee optimal outcomes. This is because we cannot predict with certainty, given the initial conditions, where the firm is going. The subtlety of this argument lies in the insight that *ceteris paribus* tomorrow's decisions about strategy depend not only on today's decisions about

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management.

strategy, but also on *how we have arrived* at today's decisions. A more detailed investigation of how such decisions are made, therefore, has the potential to enhance and deepen our understanding of strategic management.

Managers in charge of strategic decision making are capable of providing only satisfactory solutions to problems. Thus, strategy must deal with the notion of choosing the first option that appears to satisfy a basic set of criteria. "Most human decision making", March and Simon observed, "whether individual or organizational, is concerned with the discovery and selection of satisfactory alternatives; only in exceptional cases is it concerned with the discovery and selection of optimal alternatives" (March & Simon 1958, p. 141). This view is rooted in a very simple evolutionary strategy: if an organism (such as a firm) wastes its time making optimal decisions, it will die. Just as a biological organism sets goals that are purely local in character – find food to keep alive for one day, find a place to rest long enough to prepare for next day's search for food – and does not evaluate all of its decisions against optimal criteria, so too a firm consisting almost entirely of such evolved organisms is unlikely to be cognitively capable of unbounded optimality. And so it employs a decision making heuristic that is qualitatively completely different from the assumption of rational choice, conventionally understood.

In keeping with this view, Simon sees decision making as the central idea in strategy; "strategic decisions is a chapter in the topic of decision making under uncertainty – in fact, massive and unending uncertainty" (Simon, 1993a, p. 134). According to Simon, survival and success in such a setting requires the development of three skills, all of which become crucial for strategy. First, the organization must develop skills in anticipating the shape of the uncertain future. This is no easy task since unending uncertainty involves not only uncertainty about the probabilities of the alternatives available, but also uncertainty about the probability distribution

itself.[5] Second, the organization must develop skills in generating new alternatives for strategic decisions, for example, through the role of imagination in decision making.[6] Third, the organization must have skills in implementing new decisions to make adaptation more effective. Adaptation applies not only at the level of the organization adapting to its environment; but also at the individual level, because of what March and Simon (1958, p. 151) referred to as, "a complex interweaving of affective and cognitive processes": *What a person wants and likes influences what he sees; what he sees influences what he wants and likes"* (Ibid.).

The organization in which the decision maker operates is part of the process that determines both the decision maker's goals and the alternatives considered to achieve those goals. Therefore, the organization plays a large role in defining, if not the world the organism (decision maker) sees, then at least "a model of reality that is sufficiently simple to be handled by problem solving processes." And vice versa. In evaluating possible courses of actions, decision makers will tend to opt for familiar patterns, for solution sets that are already proven useful; the domain of what the decision maker "wants and likes." Although satisficing can evolve adaptive behavior, generally only a limited portion of the organization will change at any given time (some parts of the organization are required to remain stable in their structure and function if the organization is not to fall into complete chaos). The organization thus retains adaptive

[5] Most probably think of this kind of uncertainty as 'Knightian uncertainty' but, in fact, a more appropriate term might be 'shacklian uncertaintly'. While Frank Knight made a famous distinction between 'risk' and 'uncertaintly' (with risk referring to events that can be grouped into classes of events so the probability can be determined as the relative frequency of occurrence; and uncertainty referring to unique events that can't be identified as part of a larger group; cf. Knight, 1921); 'Shacklian' uncertainty refers to uncertainty as true creation of new opportunities and events (Shackle, 1961). In our opinion, it is this latter creative uncertainty which holds most promise for strategy because it emphasizes the element of creation and imagination.

[6] With uncertainty and bounded rationality, new alternatives for strategic decision making can be created through the role of imagination in decision making. As Shackle wrote: "Decision is choice, but choice amongst what? Not amongst actual experiences depending upon stimuli from without or our own motor responses, for when you are actually experiencing or physically doing something, it is too late to reject it in favor of something else. Choice is amongst imagined experiences" (Shackle, 1964, p. 12).

characteristics while eschewing counterproductive or wasteful behaviors, while at the same time maintaining a sense of individual identity.[7]

The Context: The Behavioral Theory of the Firm

Simon's vision for strategy as articulated in Simon (1993a) is embedded in a larger set of behavioral ideas about decision making and behavior in organizations. A first step in providing a foundation for a Simonian theory of strategy is to identify the fundamental assumptions for the development of the skills he finds so important to strategy. They can all be elaborated within the framework of the behavioral theory of the firm; and doing that, will help us clarify their importance to strategic management.

The Behavioral Theory of the Firm is at heart a theory that is built around a political conception of organizational goals, a bounded rationality conception of expectations, an adaptive conception of rules and aspirations, and a set of ideas about how the interactions among these factors affect decisions in a firm (Cyert & March, 1992 chapter 9; March, 1992).

A political conception of organizational goals:

Whereas goals in rational theory are pictured as given alternatives each with a set of consequences attached, and the problem of choice consisting in the selection of the best alternative, goals within the behavioral theory of the firm are pictured as reflecting the demands of a political coalition, changing as the composition of that coalition changes. Goals reflect several dimensions (such as the goals of the organization, and the presence of particular problems) and aspirations with respect to each dimension of the goals are pictured as changing

[7] "Action is goal-oriented and adaptive. But because of its approximate and fragemented character, only a few elements of the system are adaptive at any one time; the remainder are, at least in the short run, 'givens'. So, for

in response to the experiences of the organization and its components as well as the experiences of others to whom they compare themselves. Thus, it is the dynamic nature of aspirations which enables the generation of new decision alternatives. "Alternatives are not given but must be searched for", Simon (1955b, p. 33 wrote). The firm, therefore, must engage in active search and imagination to create sustainable strategic opportunities (Winter, 2000).

A bounded rationality conception of expectations

In the behavioral view, agents have only limited rationality, meaning that behavior in organizations is *intendedly* rational; neither emotive nor aimless. "Organizations are formed with the intention and design of accomplishing goals; and the people who work in organizations believe, at least part of the time, that they are striving towards these same goals" (Simon 1955b, p. 30). Since firms are seen as heterogeneous, boundedly rational entities that have to search for relevant information, expectations in the behavioral theory of the firm are the result of making inferences from available information; involving both the processes by which information is made available and to the processes of drawing inferences. Much information is gathered by search activity. The intensity of search depends on the performance of the organization relative to aspirations and the amount of organizational slack (March and Simon, 1958, p. 47-52). The direction of search is affected by the location (in the organization) of search activity and the definition of the problem stimulating the activity. Thus, the search activity of the organization furthers both the generation of new alternative strategies, and facilitates the anticipation of uncertain futures.

An adaptive conception of rules and aspirations

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example, an individual or organization may attend to improving a particular program, or to selecting an appropriate program from the existing repertory to meet a particular situation" (March & Simon, p. 169).

"Decision making" in the behavioral theory is assumed to take place in response to a problem, through the use of standard operating procedures and other routines, as also through search for an alternative that is acceptable from the point of view of current aspiration levels for evoked goals. Decision making is affected, therefore, by the definition of the problem, by existing rules (which reflect past learning by the organization), by the order in which alternatives are considered (which reflects the location of decision making in the organization and past experience), and by anything that affects aspirations and attention (Cyert and March, 1992, chapter 9).

Within this framework, four concepts were developed (Cyert and March, 1963). The first is the *quasi-resolution of conflict*, the idea that firms function with considerable latent conflict of interests but do not necessarily resolve that conflict explicitly. The second concept is *uncertainty avoidance*. Although firms try to anticipate an unpredictable future insofar as they can, they also try to restructure their worlds in order to minimize their dependence on anticipation of the highly uncertain future. The third concept is *problemistic search*, the idea that search within a firm is stimulated primarily by problems and directed to solving those problems. The fourth concept is *organizational learning*. The theory assumes that firms learn from their own experiences and the experiences of others (Levinthal & March, 1993).

Taken together, these ideas emphasized the uniqueness in firms; organizations and organizational actors differ in terms of their aspirations, their knowledge, and their decisions. In terms of relevance to strategy, "[p]erpahs the most basic contribution of [the behavioral theory of the firm]", David Teece et al writes, "is their recognition of the fundamental importance of firm heterogeneity" (2002, p. 85). With firm heterogeneity leading to performance heterogeneity not understandable through effects on the industry level (empirically showed in Hansen and

Wernerfelt, 1989 and Rumelt, 1991), the ideas from the behavioral theory about the characteristics of firm "have been verified. The idea that firms are fundamentally heterogeneous, in terms of their internal knowledge, skills, and resources, is at the heart of the field of strategic management" (p. 85). Thus, they conclude that "[m]ost subsequent economic theories of firm strategy are consequently intellectual descendants of Cyert and March's early efforts".

With these foundational elements in place, the behavioral perspective on strategy can now be elaborated. See Figure 1 for a graphical representation. In the next section, we will illustrate our integration of Simon's ideas into a unified theory of strategy through a specific example from existing empirical research. In the section following that, we will highlight and elaborate upon three key elements in Figure 1 that have been relatively understudied in the current literature in strategic management.

A BEHAVIORAL THEORY OF STRATEGY

In a nutshell, a Simonian theory of strategy would build upon behavioral theories and put decision making at the heart of strategic management and insist that the vocabulary of strategic theory must be derived from the logic and psychology of human decision making. In this it will be a theory of *know-how* rather than *know-what* (Hayek, 1952: 39). While current theories of strategic management try to directly relate the "what" (resources and capabilities) with outcome measures, a Simonian theory would focus on "how" firms can, do and ought to *design* strategies -- both with regard to the acquisition and utilization of changing resources and capabilities within the firm, as well as adapting to and negotiating with the external environment. To illustrate how a behavioral theory works with and enhances other more traditional approaches in recent strategic management research, we will present one relatively successful empirical attempt to

move from resource-based explanations to learning based ones for the exact same phenomenon of firm performance.

In two well-received studies of the major US film studios from 1936 to 1965, Miller and Shamsie (1996 and 2001) sought to understand the financial performance of firms in terms of different theories of strategic management. In the first, they attempted to explain the performance of the studios in terms of the Resource-Based View (RBV) of the firm, and discovered that RBV did not quite capture important and useful explanations of variations in their performance. Particularly, they found that values of particular resources were context-dependent and could not be determined in isolation from the environment in which the firm found itself. In their own words (1996: 539):

> "… both property- and knowledge-based resources that are hard to buy or imitate contributed to performance: to returns on sales, operating profits, and market share. However, the environmental context was all-important in conditioning these relationships. Periods of stability and predictability favored firms with property-based resources but did not reward those with knowledge-based resources. Precisely the opposite was true for periods of uncertainty, even though the sample of firms was identical. It follows, then, that whether or not an asset can be considered a resource will depend as much on the context enveloping an organization as on the properties of the asset itself."

Furthermore, they also found that property-based resources such as those that enjoy some form of legal protection, were more vulnerable to changes in the environment than knowledge-based resources. The study thus emphasized the need for a dynamic and contextual understanding of strategy in general and knowledge-based resources in particular.

But is knowledge a resource in the sense that a firm's physical plant and other assets may be deemed resources? Unlike physical assets that can be easily traded in factor markets, knowledge has been shown to be a beast of a different nature (Arrow, 1962). Also, the acquisition of knowledge involves learning, which is a phenomenon all its own. How a firm

acquires, absorbs, and utilizes knowledge involves not only complex cognitive capacities such as absorptive capacity (Cohen and Levinthal), but also necessitates organizational routines and processes that change and evolve over time. And as Simon (1991a) would suggest, such organizational learning puts decision makers center stage and involves the concept of "design" as much as those of evolution and adaptive learning.

Miller and Shamsie (2001) move closer to the Simonian view in their second "take" on the same data-set of major Hollywood studios from 1936 to 1965. This time around, they focus on the heads of the studios and develop a three-stage "executive life cycle" model that highlights how the behavior of the CEOs impacted the organizational learning and performance of the subject firms. They found an inverse U-shaped relationship between executive tenure and the firms' financial performance. In the early stages of an executive's tenure, performance was impacted by large amount of product-line experimentation while the executive learns what works and does not work. This then leads to a harvest stage when the studio begins to focus on and specialize in particular types of films, and as the authors point out, this specialization rests on the confidence the executives have garnered in particular ways of thinking and doing things. Finally, after 15 years or so, as the executives begin relaxing and resting on their laurels, performance begins to decline.

Besides providing evidence for the obvious role of processes of exploration and exploitation (March, 1991) in organizational learning, we could argue that at least two other very important aspects of a behavioral theory of strategy were evidenced in the results of this second study. First, executive tenure mattered, and *how* executives used the resources available to them impacted performance. To quote the authors themselves (2001: 738):

> "… It appears that as our top executives learned about their jobs, firms, and environments, they became more effective at using the resources available to them to make successful film

choices. These benefits of learning and experience lasted a very long time as performance only began to decline very late in th tenures of our executives."

Second, the study brought out the fact that selection at the aggregate level did not depend entirely on environmental factors such as changes in market demand or expiry of intellectual property rights. Again, to quote the original (2001: 738):

> "Conventional wisdom suggests that it is mainly industry fad and fashion that drive the mix of pictures that each studio makes each year. But this study suggests that the tenure of the production head also plays a significant role in this selection process"

In other words, decision makers and environments are interactive rather than independent of each other.

The two Miller and Shamsie stories about the same empirical phenomenon suggest a hierarchy of the three strategy theories laid out in Table 1: from the theoretically simple, but empirically less accurate and pragmatically less useful, to higher levels of complexity, better empirical grounding, and deeper pragmatic potential. RBV, like most static economic theories is theoretically simple – firm resources, to the extent they are VRIN, *matte*r (Barney, 1991). But, as argued by others such as Priem and Butler (1991), without specifying (other than tautologically) what would count as a resource, when, under what circumstances, and how its value would change over time, the theory is not very useful or even empirically verifiable. Moving to a more dynamic view might complicate the picture, but might more usefully highlight the nature and role of knowledge and human capital (Teece et al, 2002; Eisenhardt and Martin, 2000). But it is only when we get into the skin of the firm and observe human level processes driven by the behavior of individuals and groups that we begin to get a near-complete and useful picture of strategic management.

In the next section, we will return to Figure 1 and explicate the more integrative picture we have painted of strategic management and show that while it differs in key aspects from the other two views, it can be consistent with empirical findings that have been inspired by them.

ALTRUISM, NEAR DECOMPOSABILITY, AND DESIGN: UNDERSTUDIED BUT NECESSARY ELEMENTS OF A SIMONIAN THEORY OF STRATEGY

In the picture of a typical behavioral theory of strategy portrayed in Figure 1, the boundedly rational decision maker lives inside a political coalition (firm) and interacts both with firm and environment on an ongoing basis. In such a behavioral firm, individual aspirations matter and are both products and drivers of historical and environmental surprises, and underlie goal formation in the organization. While goal conflicts exist in the organization, they are not always resolved. Instead, they are continually being partially resolves through other boundedly rational mechanisms such as satisficing and problemistic search. Both the formation and achievement of goals are driven by organizational learning and uncertainty avoidance through both predictive and non-predictive strategies such as planning and feedback respectively.

Existing theories in strategy, particularly in the dynamic capabilities view, incorporate large pieces of this integrated picture. For example, dynamic capabilities and RBV rest on the idea of firm heterogeneity and internal firm resources (Teece et al, 2002). RBV emphasizes that firms are collections of resources and competencies which are difficult to imitate and firm specific; such as operating routines and specific technological knowledge (Wernerfelt, 1984). The idea of routines traveled from Cyert and March to the work of Nelson and Winter and, from there, into strategic management, in particular RBV (Teece et al, 2002).[8] Moreover, building on the idea of standard operating procedures, Teece has developed the idea of dividing a firms

competence into allocative, administrative and transactional elements. The dynamic capability view of strategy emphasizes that the "key role of strategic management in appropriately adapting, integrating, and re-configuring internal and external organizational skills, resources and functional competencies toward a changing environment" (Teece and Pisano, 1994, p. 57), thereby building on behavioral ideas of adaptation and the dynamic character of expectations and goals. They also follow the behavioral view in seeing learning as an organizational process; "[w]hile individual skills and knowledge can contribute critically to the organization, learning processes are intrinsically social and collective" (Teece et al, 2002, p. 90). Moreover, "[a] more specific application of [behavioral ideas] in the dynamic capabilities literature is the importance of routines in identifying and exploring opportunities" (p. 91). Through mechanisms such as uncertainty avoidance and problemestic search influencing the standard operating procedures of the firm, a firm's organization and performance is uniquely influenced by the nature of decision making; as is the firm's strategic behavior. As emphasized by Cyert and March (1963) and Simon (1955a, 1993a), firm decision making and strategy depends on the firm's ability to identify decision opportunities, create them and to act on them facing bounded rationality and uncertainty; (cf. Simon, 1993a: "strategic decisions is a chapter in the topic of decision making under uncertainty"). In keeping with this perspective, the dynamic capability view emphasizes that dynamic capabilities of a firm depends on both its ability to identify strategic opportunities and its ability to change the structure of the firm to better exploit those opportunities (Teece et al, 2002, p. 92). Thus, there are plenty behavioral ideas in present day theories of strategy and, as Teece concludes, the behavioral view has "provided important later contributions to the theory of the firm, and more specifically to the field of strategy" (p. 93). Finally, the governance

[8] See, however, Bromiley and Fleming (2002) for a critique of RBV from a behavioral perspective.

perspective on strategy relies on ideas such as bounded rationality and conflict of interest in the organization, coming directly from the behavioral perspective (Williamson, 1999).

But there are at least three key additional elements worked out by Simon that have not been looked at as carefully as might be warranted by the empirical phenomena. These are:

1. The role of docility and altruism in human behavior as opposed to assumptions of opportunism.
2. The role of near-decomposability in the structure of organizations and their evolution over time.
3. The role of design in both the creation of organizational environments and strategies to cope with them.

Docility, altruism, and organizational identification

In two important papers, Simon (1991b, 1993b), Simon pointed out that the many scientists (in particular economists) have ignored the altruistic role of organizational identification that bestow an evolutionary advantage on firms that encourage such identification. His argument goes as follows:

- In a world of bounded rationality, "docility" contributes to the fitness of human beings. In his own words, "Because of bounded rationality, docility contributes to the fitness of human beings in evolutionary competition. By "docility" I mean *the tendency to depend on suggestions, recommendation, persuasion, and information obtained through social channels as a major basis of choice."* (1993b: 156) Furthermore, "Behaving in this fashion contributes heavily to our fitness because (a) social influences will generally give us advice that is "for our own good" and (b) the information on which this advice is based is far better than the information we could gather independently. As a result, *people exhibit a very large measure of docility."* (1993b: 157)
- While wealth is not linked to fitness, docility is. And therefore assumptions of pure greed or pursuit of economic gain alone is not only unwarranted but is empty of any possible evolutionary meaning. Further, Simon states, "That economic actors desire only economic

gain is a far stronger assumption than that they maximize utility. It is also empirically false." He goes on to further argue that, "What motivates human choice is an empirical question, and neoclassical conclusions that derive from the dubious assumption that economic motives dominate must be reexamined."

- One of the most predominant forms of altruism resulting from docility is group loyalty. As he explains, "At the social level, the gradual change and selection of culture traits are producing patterns of information, advice, and resulting behavior that enhance the average fitness of members of the society; and because of docility, social evolution often induces altruistic behavior in individuals that has net advantage for average fitness in the society. Altruism includes influencing others to behave altruistically."
- Finally, organizational identification is a form of group loyalty, "a powerful altruistic force" that conditions "both participants' goals and the cognitive models they form of their situations." (1993b: 160).

Ergo, organizational identity matters and should be an important part of our explanations of firm performance.

In contrast to Simon's emphasis on the role of docility and altruism in organizational behavior, most of our current theories of strategic management tend to rest on Transaction Cost Economics (TCE), which depends on fundamental assumptions of unvarnished opportunism at the level of the individual (Williamson, 1999). While Williamson (1973, 1975) have also evoked ideas on organizational atmosphere which are closer to issues of organizational identification, most follow up work on transaction cost economics neglects this aspect of Williamson's work. Work on the complementary roles of opportunism/conflict of interest and issues of altruism, organizational identification and organizational atmosphere is important for future studies in strategy; and particularly important for developing Simonian extensions on a behavioral theory of strategy.

Plural and changing motives and near-decomposability

Economic theories, as Simon and others have repeatedly argued, ignore multiple and conflicting motives by assuming that they can be collapsed into some ordered measure of economic gain. But as Simon (1993b: 160) pointed out, "Human motives change over time, responding to experience and the surprises of history." If so, what human beings count as important and meaningful and how their changing values and aspirations map onto particular individual and organizational goals, as also how the mapping processes interact, are all important areas for strategic management research.

Perhaps the most insightful and useful work in this area comes from March. For March, because the dynamics and the structure of the decision making environment is changing, the goals, preferences and motives of the decision makers are continuously being formed and updated.[9] Facing uncertainty and bounded rationality, decision makers face surprises and use imagination; "[i]magination of the future, like imagination of the past, are devices for living in the present", March writes (1995, p. 427). While the emergent nature of preferences and motives is desirable and, indeed, necessary, for firm survival and strategy, it needs to be balanced with elements of rigidity (such as the existence of routines). This is elaborated in March's discussion of a balance between exploration and exploitation (March, 1991, also see Levinthal and March, 1993). The challenges of obtaining such a balance – for instance, the 'traps' of learning, success and failure (Levinthal and March, 1993, p. 105-106) – become challenges of strategic management because they are basic problems of dealing with human decision making (March, 1994).

[9] See for example March (1971, p. 562): "Theories of individual organization and social choice assume actors with pre-existing values. … [however], it is obvious that goals change over time an that the character of those changes affects both the richness of personal and social development and the outcomes of choice behavior".

In a world of plural and changing human motives on the one hand, and the necessity for organizational identification on the other, organizational structures that tend to survive over time contain an important structural feature called near-decomposability. We will elaborate on that next in concurrence with the notion of designed strategies and environments.

Near decomposability and design in organizational strategies and their environments

Miller and Shamsie (2001 – discussed in detail above) empirically showed that the environment that "selects" fitter individuals is not always independent of the decision makers, at least in the case of strategic organizational environments. Sarasvathy & Simon (2000) argued the same in the case of entrepreneurial environments and suggested that it is possible not only to "adapt" to an environment, but also to enact it (Weick, 1979) and to even design and negotiate parts of it – especially when the environment consists largely of other individuals and organizations. In other words, in pragmatically and theoretically important ways, firms and markets are more like artifacts (i.e. products of intentional design, however flawed) rather than like natural "forces."

In particular, as Simon showed (1969), it is possible to design a better artifact[10] by building into its structure the property of near-decomposability. In nearly decomposable systems, (1) the short-term (high-frequency) behavior of each subsystem is approximately independent of the other subsystems at its level, and (2) in the long run, the (low-frequency) behavior of a subsystem depends on that of the other components only in an (approximately) aggregate way. Near-decomposability confers evolutionary advantages to the organization because, in nearly decomposable systems, each component can evolve toward greater fitness with little dependence upon the changes taking place in the details of other components.

Business history is strewn with examples of long-run and hi-growth firms whose structures exhibit near-decomposability. More general histories of the spread of "divisional" architectures through American industry can be found in Drucker (1947) and Chandler (1962). Also, we can see numerous new examples of companies today that grow through franchising, joint ventures, and more recently, through "affiliate" programs pioneered by internet companies such as Amazon.com. Furthermore, as Sarasvathy (2002) has shown, cognitive models developed by expert entrepreneurs in the creation of successful firms also exhibit patterns of near-decomposability.

It is important to note here that near-decomposability is not modularity. Modularity suggests complete decomposability and tends to provide a role for the "whole" merely as an aggregation of the parts. In contrast, near-decomposability preserves the vital role of overall identity for the organism while allowing it to reap many of the benefits of modularity. In other words, near-decomposability emphasizes sustained organizational identity through continual changes both in the inner and outer environments of the artifact. The human body is a classic example of near-decomposability. While several parts of the body may be independently changed and even replaced, the human anatomy is not completely modular. It is nearly decomposable, and in that lies the subtlety of its structure and the strength of its identity.

In sum, the three oft-neglected but arguably highly potent elements of Simon's work -- viz. (1) Docility and altruism in organizational identification; (2) plural and changing human motives leading to near-decomposability in organizational structures; and, (3) artificiality and design both in organizational strategies and environments -- together suggest a fresh new integrative approach to strategic management theorizing.

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[10] "Artifact" can include an organization and its environment. See Simon (1969, chapter 6).

CONCLUSION

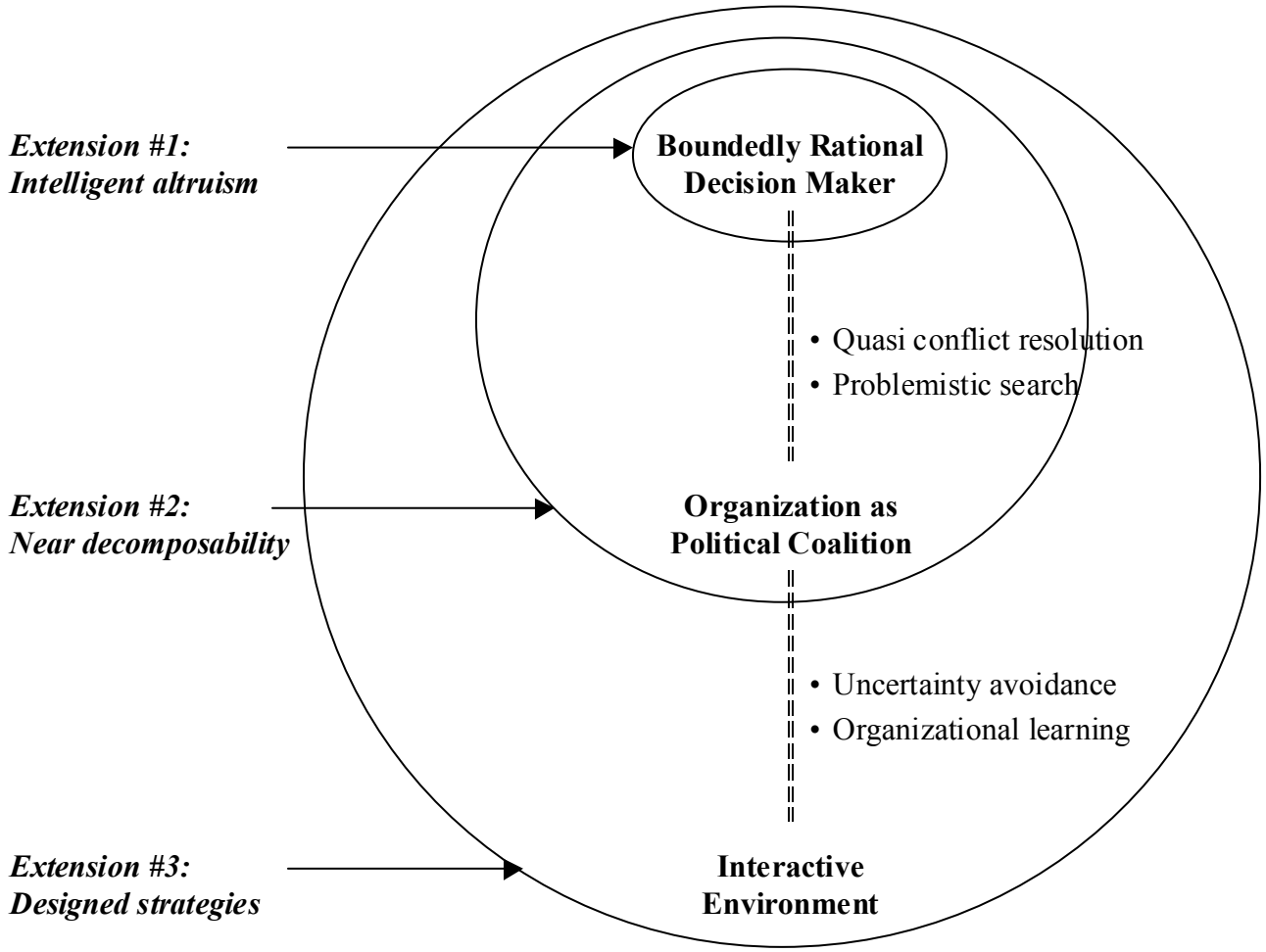
In this paper, we set out to show that a behavioral view of management informs many of our current theories of strategy even when they are ostensibly built upon transaction cost or evolutionary economics. Furthermore, we illustrated how particular empirical phenomena in strategic management that have partially eluded traditional theorizing have successfully been explained through direct appeals to behavioral theories. Finally, we have outlined three understudied but key elements of Herbert Simon's work that open up promising possibilities for future scholarship.

These three elements enter into the picture at three levels of analysis: (1) Intelligent altruism is a characteristic of individual behavior; (2) Near-decomposability is a feature of organizational structure; and, (3) Design permeates both organization and environment. Together these three elements can provide a hierarchical integration of our current explanations into new insights for future theorizing in strategic management.

Table 1

	Transaction cost theory *(underlies Resource-Based View)*	**Evolutionary Theory** *(underlies Dynamic Capabilities View)*	**Behavioral Theory** *(elements underlie both RBV and DCV)*	**Simonian Extensions**
Rationality Assumptions	Bounded Rationality (Williamson, 1999)	Bounded and/or procedural rationality (Nelson & Winter, 1982)	Procedural (and bounded) rationality (Simon, 1987; March 1994)	
Assumptions of behavior	Opportunism	Rule-following	Opportunism	Intelligent altruism
Existence of Firms/ purpose of organization	Minimize high transaction costs (Williamson, 1991, 1999)	Firms exists because of coordination and communication problems	Firms as coalitions; adaptive rational systems (Cyert & March, 1963)	
Organizational structures determined by	Structure of transaction costs	Environmental selection	Identity, loyalty, and conflict resolution mechanisms	Near-decomposability
Knowledge and organization	No theory of knowledge accumulation; organization 'incentives schemes'	Firm pool of skills and routines (knowledge assets) (Nelson & Winter, 1982; Penrose, 1959); organization often spontaneous and coordination of shared knowledge	Internal conflicts of goals; knowledge embedded in routines and heuristics	
Goals	Exogenous	Exogenous or through chance and path dependence	Can be endogenous and intentional	
Responses driven by	Drive to optimize	Inertia and environmental shocks	Changing aspirations	
Competitive Landscape	Entirely competitive	Partly competitive with occasional co-operation	Largely coalitional and partly competitive	
Strategy as	Economizing	Adaptation	Decision Making	Design

Figure 1:
Graphical representation of a behavioral theory of strategy with three Simonian extensions



REFERENCES

Arrow K. 1962. Economic welfare and the allocation of resources for innovation. In *The Rate and Direction of Inventive Activity*, Nelson RR (ed). Princeton University Press and NBER: 609-626.

Barney J. 1991. Firm resources and sustained competitive advantage. *Journal of Management* **17**(1): 99-120.

Bromiley P, Fleming L. 2002. The resource-based view of strategy: A behaviorist critique. In *The Economics of Choice, Change and Organization: Essays in Honor of Richard M. Cyert*, Augier M, March JG. (eds). Edward Elgar.

Chandler A. 1962. *Strategy and Structure: Chapters in the History of the Industrial Enterprise*. MIT Press: Cambridge, MA.

Cohen W, Levinthal D. 1990. Absorptive capacity: A new perspective in learning and innovation. *Administrative Science Quarterly* **35**: 569-596.

Cyert RM, March JG. 1963 [1992]. *A Behavioral Theory of the Firm.* Prentice Hall: Englewood Cliffs.

Dosi G. 2002. A very reasonable objective still beyond our reach: Economics as an empirically disciplined social science. Forthcoming in *Models of a Man: Essays in Memory of Herbert A. Simon.* Augier M, March JG. (eds). MIT Press.

Drucker PF. 1947. *Big Business: A Study of the Political Problems of American Capitalism*. W. Heinemann ltd: London, Toronto.

Eisenhardt KM, Martin JA. 2000. Dynamic capabilities: What are they? *Strategic Management Journal* **21**: 1105-1122

Hansen G, Wernerfelt B. 1989. Determinants of firm performance: The relative importance of economic and organizational factors. *Strategic Management Journal* **10**: 399-411.

Hayek FAv. 1952. *The Sensory Order*. Routledge & Kegan Paul.

Knight F. 1921. *Risk, Uncertainty and Profit*. McMuffin: Boston.

Levinthal D, March JG. 1993. The myopia of learning. *Strategic Management Journal* **14**: 95-112.

March JG. 1971. The Technology of Foolishness. *Civiløkonomen* (Copenhagen), **18** (4): 4-12.

March JG. 1991. Exploration and exploitation in organizational learning. *Organization Science* **2**: 71-87.

March JG. 1992. Learning and the theory of the firm, *Economia e Banca - Annali Scientific* (Trento), **5**: 15-35

March JG. 1994. *A Primer on Decision Making*. Free Press: New York.

March JG. 1995. The future, disposable organizations, and the rigidities of imagination. *Organization* **2**: 427-440.

March JG, Simon HA. 1958. *Organizations*. Wiley: New York.

Miller D, Shamsie J. 1996. The resource-based view of the firm in two environments: The Hollywood film studios from 1936-1965. *Academy of Management Journal* **39**(3): 519-543.

Miller D, Shamsie J. 2001. Learning across the life cycle: Experimentation and performance among the Hollywood studio heads. *Strategic Management Journal* **22**(8): 725-745.

Nelson RR, Winter SG. 1982. *An Evolutionary Theory of Economic Change*. Belknap Press: Cambridge.

Penrose E. 1959. *The Theory of the Growth of the Firm.* Blackwell: Oxford.

Priem RL, Butler JE. 2001. Is the resource-based "view" a useful perspective for strategic management research? *Academy of Management Review* **26(**1): 22-40.

Rumelt RD. 1984. How much does industry matter? *Strategic Management Journal* **12**: 167-182.

Rumelt RD, Schendel D, Teece DJ. 1994. Introduction. In *Fundamental Issues in Strategy*. Harvard Business School Press: Boston.

Sarasvathy SD. 2002. Entrepreneurship as a science of the artificial. *Journal of Economic Psychology* Forthcoming.

Sarasvathy SD, Simon HA. 2000. Near decomposability, effectuation, and the speed of growth of entrepreneurial firms. Presented at *"The First Annual Technology Entrepreneurship Research Policy Conference,"* May 19 and 20, 2000, Robert H. Smith School of Business, University of Maryland. (Available at www.effectuation.org)

Shackle GLS. 1961. *Decision, Order and Time.* Oxford University Press: Oxford.

Simon HA. 1947. *Administrative Behavior*. Free Press: New York.

Simon HA. 1955a. A behavioral model of rational choice. *Quarterly Journal of Economics* **69**: 99-118.

Simon HA. 1955b. Recent advances in organization theory. In *Research Frontiers in Politics and Government*. Brookings Institution.

Simon HA. 1991. Bounded rationality and organizational learning. *Organization Science* **2**(1): 125-134.

Simon HA. 1991b. Organizations and markets. *Journal of Economic Perspectives* **5**: 25-44.

Simon HA. 1993a. Strategy and organizational evolution. *Strategic Management Journal* **14**: 131-142.

Simon HA. 1993b. Altruism and Economics. *American Economic Review* **83**(2): 156-61.

Teece DJ, Pisano G. 1994. The dynamic capabilities of firms: An introduction. *Industrial and Corporate Change* **3**(3): 537-556.

Teece DJ, Pisano G, Shuen A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal* **18**(7): 537-533.

Teece DJ, Pisano G. Boerner C. 2002. Dynamic capabilities, competence, and the behavioral theory of the firm. In *The Economics of Choice, Change and Organization: Essays in Honor of Richard M. Cyert,* Augier M, March JG. (eds). Edward Elgar.

Weick KE. 1979. *The Social Psychology of Organizing*. Addison-Wesley: Reading, MA.

Williamson OE. 1973. Markets and hierarchies: Some elementary considerations. *American Economic Review* **63**: 316-325.

Williamson OE. 1975. *Markets and Hierarchies*. Free Press: New York.

Williamson OE. 1991. Strategizing, economizing and economic organization. *Strategic Management Journal* **12**: 75-94.

Williamson OE. 1996. Transaction cost economics and the Carnegie connection. *Journal of Economic Behavior and Organization* **31**: 149-155.

Williamson OE. 1999. Strategy research: Governance and competence perspectives. *Strategic Management Journal* **20**: 1087-1108.

Williamson OE. 2002. Empirical Microeconomics: Another Perspective. In *The Economics of Choice, Change and Organization: Essays in Honor of Richard M. Cyert*, Augier M, March JG. (eds). Edward Elgar.

Williamson OE. 2002. Herbert Simon and Organization Theory: Lessons for the Theory of the Firm.

Winter SG. 2000. The satisficing principle in capability learning. *Strategic Management Journal* **21**: 981-996.