Part I

Origin and Process

1

Emerging Issues in Strategy Process Research

Gregory G. Dess and G. T. Lumpkin

Strategy-making processes (SMP) are organizational-level phenomena involving key decisions made on behalf of the entire organization. Strategic processes encompass a wide range of topics including analysis, planning, decision making and many aspects of an organization's culture, vision and value system (Hart, 1992). These diverse interests have contributed to a broad array of strategy process research. Over two decades ago, Bourgeois (1980) articulated the distinction between strategy process and strategy content. He suggested that strategy processes represent a unique domain that addresses the question of "how" strategy is enacted, in contrast to strategy content that addresses the question of "what strategy."

Despite the vast body of literature that has emerged since Bourgeois' (1980) article, there is still a lack of coherence to the theoretical and empirical contributions. For example, Rajagopalan, Rasheed, and Datta (1993) note that "the absence of such integrative models has resulted in process research remaining fragmented, characterized by limited theory building and empirical testing" (p. 350). Similarly, Pettigrew laments that "Strategic process research has been narrow in focus and its undoubted contribution has been obscured by the lack of explicit discourse about its analytical foundations" (1992: 5). Such a lack of integration, however, is viewed by many as a major strength and attraction of the strategic management field because its multidisciplinary nature draws on disciplines such as economics, sociology, behavioral sciences, marketing, finance, and so on. This certainly adds to the richness of both theory construction and research methodologies.

Given the broad and diverse nature of strategy process research, our goal is not to review and integrate multiple streams of literature. Instead, after briefly reviewing several key research contributions in two important areas of strategic process research, we focus on a third stream of the strategy-making process literature. We show how prior SMP scholarship is often cumulative and leads to the creation of new knowledge about strategy making. In our examples, we demonstrate how this growth in new knowledge is the result of relating insights gained from different areas of the field of management and evaluating them in a contingency framework. We also examine how such processes may be related

to organizational performance and influence and are influenced by a broad array of internal and external organizational factors. In this way, our hope is to provide an in-depth analysis of the multidimensional nature of strategy making by illustrating how such elements combine to form a given strategic decision process.

The remainder of this chapter consists of five sections. In the next section we review three different ways in which the topic of strategic processes has been addressed in prior research. The first two of these include strategic decision making and strategic change. We briefly describe the historical roots of these views and several of the key scholarly contributions in these important areas. Then, we introduce a third area of strategic process research which is developed in depth in the succeeding sections.

In the second section, we outline the stream of strategy-making process (SMP) literature that led to our development of the entrepreneurial orientation (EO) construct. In addition to our initial paper that endeavored to integrate concepts and suggest possible hypotheses (Lumpkin and Dess, 1996), we also discuss empirical research that explored factors (e.g., environment, strategy) that moderate the EO–performance relationship. These include entrepreneurial orientation as a unidimensional construct (Dess, Lumpkin, and Covin, 1997) and as a multidimensional construct (Lumpkin and Dess, 2001) in which two subdimensions of EO – proactiveness and competitive aggressiveness – are hypothesized to vary independently rather than covary. We also include a discussion of the role of contingency and configurational models in more accurately predicting firm performance.

In the third section, we direct our attention to the conceptual development of the simplicity construct. Simplicity in strategy making refers to a single-minded focus on a narrow range of activity or a preoccupation with a single strategic goal or method. Here, we discuss how the work of scholars such as Hart (1991, 1992), Miller (1993), and Miller and Chen (1993) were salient in clarifying the simplicity construct. We also explore the role of stage of organizational development and environment in the strategy-making process by testing them as moderators of the simplicity–performance relationship (Lumpkin and Dess, 1995).

The fourth section addresses the role of strategic decision processes in improving organizational performance in the knowledge economy. We draw on the first author's work with Joseph Picken (Dess and Picken, 1999) and suggest how, among other things, strategy processes can play a key role in combining and leveraging resources, including human and social capital. As noted often in the strategic process literature, we find that it is important for organizations to look beyond their boundaries to all factors of production that may enhance supplier, customer, and alliance partner capital.

In the final section, we briefly summarize the chapter.

Strategy Making, Decision Making, and Change

Strategy making is a process that involves the range of activities that firms engage in to formulate and enact their strategic missions and goals. Strategic processes refer to the methods and practices organizations use to interpret opportunities and threats and make decisions about the effective use of skills and resources (Shrivastava, 1983). As these broad descriptions suggest, the study of strategy making includes a wide range of literature covering nearly half a century of scholarly inquiry. Numerous themes are

evident in this literature, in part because the subject draws on knowledge from several fields of study including economics, sociology, and the behavioral sciences. As applied to the field of management, a review of the strategic process literature indicates that three prominent "streams" of research are evident. In this section, we will very briefly introduce two of these streams.

The first of these streams emphasizes the role of decision making in strategic processes. A key impetus for much of this research is a discussion from studies of management that first began to appear in the 1950s about the comprehensiveness of decision-making processes versus the problem of bounded rationality. Although a rational, linear, and comprehensive approach to strategy making has been considered by some to be "ideal" (e.g., Andrews, 1971; Hofer and Schendel, 1978), it has been challenged by others who consider it to be unattainable. Simon (1957) and Cyert and March (1963) were among the early theorists to argue that there are simply too many alternatives with incalculable possible outcomes to engage in purely rational decision making; rationality is, by necessity, "bounded" by the decision makers' cognitive limitations. This view was generally supported by authors such as Bower (1970) and Allison (1971) whose study of the Cuban missile crisis found that, in practice, outcomes typically diverge from the rational ideal because of organizational constraints and bureaucratic politics. Subsequently, other theorists suggested more realistic approaches such as Quinn's (1980) logical incrementalism and Mintzberg's adaptive model (1973, 1978), both of which suggest that decisions are best made in small steps that take into consideration ever-changing events.

From this starting point, some of the decision-making literature branched into the type of strategy making described above, but another branch was concerned with group decision-making processes and how different techniques and the characteristics of group members affected outcomes. Three key techniques have been explored extensively: devil's advocacy, dialectical inquiry, and consensus (e.g., Dess, 1987; Schwenk, 1984; Schweiger, Sandberg, and Ragan, 1986). Other aspects of this research have involved the characteristics of senior managers engaged in strategic decisions (e.g., Hitt and Tyler, 1991) and the speed of decision making (e.g., Eisenhardt, 1989), but most of this literature stream examines decision making as an organizational behavior issue, that is, how the group decision process interfaces with strategic outcomes.

The second stream of research that addresses strategic process issues refers to the role of strategic decision-making in bringing about change. The emphasis here is on change processes and the focus of many studies is on change management, organizational development and, in the context of entrepreneurship, the process of emergence. One of the champions of this perspective is Van de Ven who writes that this approach to strategic processes "takes an historical developmental perspective, and focuses on the sequences of incidents, activities, and stages that unfold over the duration of a central subject's existence" (1992: 170). This approach has been investigated by authors such as Scott (1971) and Greiner (1972) whose analysis of stages of organizational growth includes processes for resolving difficulties at each crisis point in the development of a firm. Strategic change often involves recognition, search, and evaluation processes that occur in an "unstructured" fashion and lead to unanticipated decisions (Mintzberg, Raisinghani, and Theoret, 1976). In the field of entrepreneurship, the emphasis on change processes can be found in research aimed at understanding the emergence of new firms (e.g., Katz and Gartner, 1988) and also in the processes whereby internally

generated new ventures develop into new strategic initiatives in the context of corporate entrepreneurship (e.g., Burgelman, 1983).

Clearly, concepts from these two streams of literature are relevant to strategic processes and such research makes important contributions to the development of both descriptive and normative theory. An emphasis on effective decision making and ongoing change processes in strategic management may be critical for firms to succeed in today's fast-paced, global environment. Although these streams of literature are not central to our paper, many other scholars draw on this important work.

To understand the basis of the decisions and actions of managers, a third stream of research has addressed strategy making in terms of patterns of action or gestalts that can be identified and characterized across organizations. These gestalts are often described as "dimensions" or "modes" that reflect coherent approaches to strategy making at the organization level (Hart, 1992; Miller and Friesen, 1978; Mintzberg, 1973). Additionally, a central aim of these strategy-making processes is to obtain congruency or fit with key variables in order to achieve desired outcomes and strong performance. Thus, such processes are impacted by a wide array of contingencies both within and outside an organization's boundaries. In the two sections that follow, we develop these concepts in greater depth and endeavor to show that we have relied on a coherent stream of strategy-making process research in the development of both the simplicity SMP construct and the EO framework.

Developing the Entrepreneurial Orientation Concept

The purpose of strategy-making processes is to enact the organization's purposes, sustain its vision and generate wealth. It consists of the organization mindset, decision-making processes and action steps that guide firms toward their desired outcomes. To understand the basis of these decisions and actions, scholars have often addressed strategy making in terms of patterns of action or gestalts that can be observed across many organizations (e.g., Rajagopalan, Rasheed, and Datta, 1993). To investigate these gestalts, many researchers have sought to delineate the elements or components of strategy making. These elements are typically labeled the *dimensions* of strategy making. For example, in his analysis of the effect of organizational structure on strategic decision processes, Fredrickson (1986) identified strategy-making dimensions such as comprehensiveness, proactiveness, rationality, and risk taking. Miller and Friesen (1978) identified eleven different dimensions of strategy making including adaptiveness, analysis, consciousness of strategies, expertise, futurity, integration, innovation, multiplexity (of decisions), proactiveness, risk taking, and attachment to traditions. The purpose of their 1978 study was to identify the "complexes of attributes and relationships" in strategy making associated with organizational success and failure. The strategy-making components identified by Miller and Friesen included various aspects of the planning, decision-making style and organizational mindset that goes into the strategy-making process. In subsequent research, three of the strategy-making dimensions identified in their 1978 study were found to be common among entrepreneurial firms – innovativeness, proactiveness, and risk taking (Miller, 1983; Miller and Friesen, 1982). These insights contributed significantly to the development of the entrepreneurial orientation construct.

The concept of strategy-making dimensions provides a useful framework for discussing an organization's various ongoing efforts to scan, analyze, plan and act in ways that will keep the organization aimed at its goals and correctly positioned in the marketplace. Some researchers have chosen to break down the dimensions of SMP even further by investigating subdimensions (c.f. Ibarra, 1993). But earlier efforts by writers of SMP scholarship tended to combine the dimensions into strategy-making *modes*. The notion of modes perhaps more clearly distinguishes the concept of SMP as an organization gestalt that consists of several elements working together. Mintzberg (1973), who was one of the earliest management scholars to address strategy making in terms of "modes," suggested an *entrepreneurial* strategy-making mode, consisting of decisiveness, opportunity seeking and risk taking, that was especially useful in developing the EO construct. He also suggested three other modes: an *adaptive* mode, in which strategic decisions are driven by stakeholder concerns; a *planning* mode characterized by formal analysis; and a *bargaining* mode for which the aim is to resolve the conflicting goals of key decision makers (Mintzberg, 1973, 1978; Mintzberg, Raisinghani, and Theoret, 1976).

Several other authors have developed typologies of strategy making by relying on multidimensional modes. Hart (1992: 327) proposed an "integrative framework for strategy-making processes composed of five modes: command, symbolic, rational, transactive and generative." Hart's framework is integrative because it highlights the many elements that go into SMP including the role of a firm's top managers, the involvement of organizational members and the interaction of these elements with the firm's vision and existing systems and strategies. Briefly, the *command* mode involves strategy making that is driven by strong leadership and enacted by organizational members who are good followers. The *symbolic* mode also tends to be directed primarily from the top, but the directing force for strategy making is the firm's vision; management's role is to coach and inspire organizational members to attain shared goals. The *rational* mode involves planning and analysis; the role of organizational members is to implement the plan – the role of top management is to maintain control and monitor results. With the *transactive* mode, strategy making is based on learning from an ongoing interactive dialogue with internal and external stakeholders; organizational members are part of the learning process – top management empowers the process. Finally, in the *generative* mode, strategy making occurs because of initiative, experimentation and "intrapreneuring" by organizational members at all levels.

Although none of the modes proposed by Hart is purely entrepreneurial, Hart suggests that his modes are not mutually exclusive and can be combined into distinct SMPs. Consistent with this insight, our prior research has suggested that both the command mode and the generative mode include aspects of entrepreneurial strategy making (Dess, Lumpkin, and Covin, 1997). The command mode represents the opportunity seeking and assertiveness suggested by Mintzberg's (1973) entrepreneurial strategy-making mode. The generative mode emphasizes the kind of autonomy, risk taking and experimentation often associated with internal corporate venturing (Burgelman, 1983). Thus, Hart's (1992) multidimensional approach to strategy-making processes provides a useful model that was especially valuable in developing the EO framework.

Venkatraman's (1989) concept of strategic orientation draws together the idea of strategic modes with the notion of strategy-making dimensions. His study explores the dimensionality of strategic processes and takes "a more holistic or interconnected per-

spective" consistent with the idea of multidimensional modes of strategy making. Although the primary purpose of his 1989 study was to investigate the operationalization and measurement of strategic orientations, he also identified *a priori* six different strategic orientations that represent the "means" and "patterns" that are evident in the strategic orientation of most firms. These include *aggressiveness*, a combative posture aimed at growing market share; *analysis*, a problem-solving orientation directed at finding the best solution among alternatives; *defensiveness*, a self-protective stance designed to preserve core domain; *futurity*, a long-term perspective emphasizing research and trend forecasting; *proactiveness*, an opportunity-seeking outlook focused on acting ahead of the competition; and *riskiness*, a tendency to make bold resource allocations in the face of uncertainty.

Venkatraman's emphasis on the gestalt of an "orientation" was useful in our development of the entrepreneurial orientation framework. Additionally, Venkatraman's research empirically supported an important difference between the dimensions of proactiveness and aggressiveness that was vital in our theoretical development of the relationship between these dimensions of EO. Unlike most prior research, we suggested that the dimensions of EO would vary independently under certain conditions rather than covary (Lumpkin and Dess, 1996 – see below). In a study comparing proactiveness and competitive aggressiveness, we found that (1) the two dimensions were negatively related to each other, and (2) proactiveness was positively related to performance, whereas, competitive aggressiveness had no significant relationship to performance (Lumpkin and Dess, 2001). Both of these findings corroborated Venkatraman's 1989 results.

Drawing on these sources of prior SMP research, in Lumpkin and Dess (1996) we developed the entrepreneurial orientation framework, including definitions of the dimensions of EO, and made several theoretical propositions regarding: (1) the relationship between these dimensions, and (2) the relationship of EO to performance. An entrepreneurial orientation refers to the processes, practices and decision-making activities that lead to new entry. It involves the intentions and actions of key players in the generative process of new venture creation. Such new entry may be undertaken by start-ups or established firms and is accomplished by entering new or established markets with new or existing goods or services. An EO consists of five dimensions defined as follows: *innovativeness* refers to a willingness to support creativity and experimentation in introducing new products/services, and novelty, technological leadership and RandD in developing new processes; *risk taking* involves a tendency to take bold actions by venturing into the unknown, borrowing heavily, and/or committing a large portion of resources to ventures with uncertain outcomes; *proactiveness* occurs when a firm has an opportunity-seeking, forward-looking perspective characterized by introducing new products or services ahead of the competition and acting in anticipation of future demand; *competitive aggressiveness* is the intensity of a firm's effort to outperform industry rivals, characterized by a strong offensive posture or aggressive responses to competitor actions; *autonomy* refers to independent action taken by entrepreneurial founders or teams aimed at bringing forth a new venture and carrying it through to completion.

Our analysis also suggested that the dimensions of EO are likely to vary independently rather than covary under certain conditions. This perspective is different from prior scholars such as Covin and Slevin (1989) who referred to EO (which they labeled "entrepreneurial strategic posture") as a "basic unidimensional strategic orientation" (1989: 79). By contrast, we argued that the dimensions of EO might occur in different

combinations. For example, a high degree of innovativeness might benefit the first movers in an industry group by enhancing their efforts to introduce novel new products or make technological advances. But later entrants may achieve competitive advantages by taking high risks such as investing heavily in plant and equipment to make large-scale quantities of a product that is primarily imitative (i.e., low in innovativeness). A recent study of 865 healthcare executives that used structural equation modeling to test the proposition that the dimensions of EO tend to vary independently rather than covary found that, as a predictor of firm growth, "the entrepreneurial orientation construct was more robust" than the unidimensional entrepreneurial posture construct (Stetz, et al., 2000). Thus, unique combinations of the subdimensions of EO may provide more precise explanations of the EO–performance relationship. Understanding how the dimensions of EO are related to each other, however, provides only a partial explanation. To more fully specify the EO–performance relationship we now turn to the role of contingency and configuration models that combine the dimensions of EO with other key variables such as environmental and organizational conditions.

Entrepreneurial orientation: contingencies and configurations

A central purpose for studying strategy-making processes is to understand how they contribute to or detract from firm performance. Such processes are rarely predictive of performance in isolation – they occur in the context of both organizational (internal) and environmental (external) forces. Thus, to gain a valid understanding of the SMP–performance relationship, it is important to address these issues in a contingency framework. Rosenberg (1968) suggests that the introduction of a third variable into the analysis of a two-variable relationship (e.g., SMP–performance) helps reduce the potential for misleading inferences and permits a "more *precise* and *specific* understanding" (1968: 100, emphasis in original) of the original two-variable relationship. Numerous studies have investigated the role of strategy making in terms of contingent factors such as organizational structure (e.g., Miller, 1987), environment (e.g., Fredrickson and Mitchell, 1984), decision-making approach (e.g., Schweiger, Sandberg, and Ragan, 1986) and political behavior (e.g., Eisenhardt and Bourgeois, 1988). In fact, evaluating strategy making in terms of the organizational and environmental factors that influence various SMPs and/or the performance outcomes of SMPs is a central issue in several articles that either propose comprehensive models of strategy making (e.g., Hart, 1992) and/or conduct extensive reviews of the SMP literature (e.g., Rajagopalan, Rasheed, and Datta, 1993).

To address such conditions, we proposed a multivariate contingency framework to investigate the EO–performance relationship. In Lumpkin and Dess (1996) we developed a contingency model of the EO–performance relationship that included sets of environmental and organizational conditions that might impact performance. We also provided examples of four different methods for investigating the effects of situational variables on the EO–performance relationship – moderating effects, mediating effects, independent effects, and interaction effects – based on Boal and Bryson (1987). In a later article that analyzed the role of EO in corporate entrepreneurship, we argued that valuable insights can be gleaned by exploring how three separate conceptual domains – strategy, structure, and process – may be combined or uniquely configured with elements of corporate

entrepreneurship to affect firm performance (Dess, Lumpkin, and McGee, 1999). Thus, contingency modeling is a vital technique for understanding how an EO functions and contributes to performance.

In some instances, understanding the SMP–performance relationship may involve more elaborate modeling. Beyond the three-variable examples suggested in Lumpkin and Dess (1996) (e.g., EO–environment–performance), prior research suggests that configurational approaches may be needed to understand complex relationships between multiple variables and performance (e.g., Doty, Glick, and Huber, 1993). Organizational configurations or gestalts represent an elaboration of contingency approaches into multivariate combinations that represent complex interrelations that may have more predictive power than bivariate contingencies (Dess, Newport, and Rasheed, 1993). For example, Miller (1988) investigated configurations by examining multiple interactions among key strategy variables and found the highest performance among organizations whose alignment of strategy, structure, and environment were consistent with the normative contingency literature. High performance among firms exhibiting simple bivariate relationships were not supported in Miller's study, but configurations of multiple variables were positively related to performance. In a study of the relationship between entrepreneurial strategy making and performance, we conducted tests of contingency and configuration models involving key strategy and environmental variables (Dess, Lumpkin, and Covin, 1997). Consistent with Miller (1988), we found that high performance among firms exhibiting simple bivariate relationships was not supported. However, multivariate configurations using *both* strategic and environmental variables with entrepreneurial strategy making were stronger predictors of firm performance. Thus, configurations of the dimensions of EO with environmental conditions and organizational factors may provide the strongest indicators of how key variables combine to contribute to or detract from firm performance.

A third area addressed by our previous research considered how configurations of entrepreneurial orientation might relate to the operationalization and measurement of the EO construct (Lyon, Lumpkin, and Dess, 2000). To determine such issues as how the dimensions of EO relate to each other and the conditions under which various dimensions will contribute to strong performance, it is critical to consider the role of effective and accurate measurement. Drawing on prior research into EO and related constructs, we identified three approaches to measurement that seemed most common and useful in the literature. These included *managerial perceptions*, which are gathered via survey and interview data; *firm behavior* which relies on headlines and abstracts to obtain observations; and *resource allocations* which involve archival records such as financial reports and other firm statistics. By considering the specific research question, and depending on issues of practicality such as cost and access, the optimal methods for operationalizing and measuring elements of an entrepreneurial orientation can be determined and implemented. Additionally, by using these techniques in combination, an empirical study can triangulate on key issues to achieve more robust research results.

Table 1.1 summarizes key issues, important findings, and conclusions from several research analyses and empirical studies conducted by the authors.

TABLE 1.1 Entrepreneurial orientation research

Title/authors	*Type*	*Key topics*	*Key conclusions/findings*
"Clarifying the entrepreneurial orientation construct and linking it to performance" Lumpkin and Dess (1996)	Conceptual	– Definitions – EO dimensions – Contingency framework	The EO construct consists of five dimensions; the dimensions of EO may vary independently rather than co-vary to understand the EO-performance relationship it is necessary to investigate it in a contingency framework.
"Entrepreneurial strategy making and firm performance: Tests of contingency and configurational models" Dess, Lumpkin, and Covin (1997)	Empirical: 96 executives from 32 firms	– Measurement of the entrepreneurial strategy-making mode – Moderator hypotheses – Bivariate vs. multivariate approaches	Multivariate configurations of entrepreneurial strategy-making, strategy content and environment were needed to explain the relationship of EO to performance.
"Linking coprporate entrepreneurship to strategy, structure and process: Suggested research directions" Dess, Lumpkin, and McGee (1999)	Conceptual	– Contingency framework for CE – Key contingencies – Applying EO to new and traditional strategic patterns	Applying the dimensions of EO to the study of corporate entrepreneurship may reveal patterns of strategy, structure and process that are most likely to contribute to strong performance.
"Linking two dimensions of entrepreneurial orientation to firm performace: The moderating role of environment and industry life cycle" Lumpkin and Dess (2001)	Empirical: 124 executives from 94 firms	– Uniqueness of EO dimensions – Relationship of independent dimensions of EO to performance – Role of contingencies in understanding EO–performance relationship	The EO dimensions of proactiveness and competitive aggressiveness (a) are conceptually distinct, (b) do not co-vary and, (c) are differentially related to performance.
"Enhancing research into a key strategic decision process: Three approaches to measuring entrepreneurial orientation" Lyon, Lumpkin, and Dess (2000)	Conceptual	– Operationalization and measurement of the EO construct – Measurement issues – Contingency modeling – Triangulation	Three different approaches to measuring EO – managerial perceptions, firm behaviors, and resource allocations – may provide different insights depending on the context and/or may be used together to triangulate in research.

Future research directions

Future research into the entrepreneurial orientation construct may involve several areas of exploration and empirical testing. First, the role of additional contingencies on the EO–performance relationship is an important area that promises to contribute to a more complete understanding of how EO functions in various settings. In addition to the areas proposed in our original framework such as industry conditions, technological trends, the role of top management and stage of organizational development, later sections of this chapter address "new economy" and knowledge management issues that are affecting the wealth creation process. These conditions provide new contingencies to be evaluated in an EO framework. Such research may also lead to additional construct development, that is, the refinement of the EO construct as a result of new insights from business and contemporary scholarship.

Second, some authors have identified subdimensions of EO that may be investigated to analyze the EO–performance relationship with more precision. For example, Ibarra (1993) distinguished between two types of innovativeness – administrative and technological. Furthermore, in the context of Porter's (1985) value-chain framework, innovation may occur within any of the primary or support activities. When viewing a focal firm as part of an expanded value chain, innovation can also take place in the inter-firm or supply chain activities between the firm and its customers, suppliers or alliance partners. Thus, the degree and type of innovativeness needs to be carefully specified depending on the research context.

Similarly, there can be a variety of perspectives on the dimension of risk taking. These could include, for example, managerial perceptions (Miller and Friesen, 1982; Miller, 1993); financial leverage, that is, the firm's debt-to-equity ratio (Hall and Weiss, 1967; Gale, 1972); income stream variability (Miller and Bromily, 1990); and the level of diversification (Jensen, 1989). The indicators that researchers select to operationalize risk-taking subdimensions can affect both the strength and the directionality of relationships with performance measures. Thus, in research designs that include EO and other strategy-making process dimensions, care must be taken in both developing theory to determine what concepts are to be included and also in the choice of indicator(s) used to measure the concepts in question.

This last point involves another issue that may affect the use of EO subdimensions as well as entrepreneurial orientation research generally. According to Weick, it is not possible for a research framework "to be simultaneously general, accurate, and simple" (1979: 35). The tradeoffs involved in conducting a study generally require that one of these three elements – generalizability, accuracy or simplicity – be sacrificed in the interest of obtaining more conclusive and non-trivial results. The study of EO will inevitably involve such tradeoffs. These issues lead to key questions that may affect EO–performance research in the future: Can specific conclusions about the role of risk taking (or any EO dimension) be made without this level of specificity? Does the additional accuracy that might be achieved by incorporating such subdimensions more than offset the loss of parsimony?

Although such issues may prove problematic, they may, on a positive note, suggest more specific research questions. For example, our study of proactiveness versus competitive aggressiveness (Lumpkin and Dess, 2001) was such a study in that it focused on the

role of just two dimensions of EO and addressed the question of whether the dimensions tended to covary or vary independently. These and other questions provide a broad array of topics to be considered when investigating the EO framework in the future.

Simplicity as a Strategy-Making Process

Many theorists who study strategy-making processes have argued that SMPs can be identified across organizations (e.g., Mintzberg, 1973, 1978). Thus, for example, an SMP such as "analysis," which refers to an emphasis on research and systematic thought in strategy formulation, can be seen across most of the models discussed above with only slight differences in emphasis – strategy making that Venkatraman (1989) and Miller and Friesen (1978) label "analysis" is referred to as "rational" by Hart (1992) and Fredrickson (1986) and as "planning" by Mintzberg (1973). Some researchers have suggested that the set of organizational processes from which most strategic decisions emerge may be limited (Rajagopalan, Rasheed, and Datta, 1993). Hart (1992) suggests that his framework represents a comprehensive set of "pure" modes of strategy making, but also states that: (1) "organizations may combine two or more modes into distinctive combinations of strategy-making processes" (p. 335), and (2) "firms usually develop competence in several modes" (p. 328). Although not all scholars agree about the nature of strategy-making processes and it is an empirical question whether or not there is a finite set of processes that determine an organization's strategy making, it is clear that unique strategy-making modes continue to emerge under certain organizational and environmental conditions.

Such seemed to be the case when Danny Miller introduced the idea of "simplicity" in a book entitled *The Icarus Paradox* (1990) and an *Academy of Management Review* (*AMR*) article entitled "The architecture of simplicity" (1993). Miller's concept of simplicity can be thought of as a frame of mind or perspective that can negatively affect organizations that become highly successful and overconfident by virtue of pursuing a single strategic objective. In fact, the title *The Icarus Paradox* refers to this problem: when the fabled Icarus of Greek mythology overextends himself by flying too close to the sun, his artificial wax wings melt and he plunges to his death in the Aegean Sea. The paradox is that strong ambition based on a single-minded pursuit can lead to a precipitous fall. According to Miller, this is common among successful organizations as well: an excessive emphasis on the factors that have provided a competitive edge and led to a firm's initial success, such as a specific product-market offering or a highly focused skill set, prompts a firm to use increasingly simplified processes and a narrower repertoire of competitive actions (Miller and Chen, 1993). Such an orientation may affect an organization's strategy-making processes. Thus, the organization develops an "overwhelming preoccupation with a single goal, strategic activity, department or worldview" (Miller, 1993: 117) leading to decisions, values and strategy-making processes that are simplistic. Miller argues that this trend toward simplicity in strategy making can eventually lead to declining performance because of incomplete decision making, failure to evaluate alternatives, and an inability to adapt to changing circumstance or new opportunities. Even though the "problem" of simplicity is the primary thrust of Miller's argument, he also explains that simplicity can be a strong unifying force as well by focusing an organization in a way that consolidates its efforts and can contribute to initial success. Simplicity in strategy making, then,

suggests a perspective that may restrict a firm's progress by diminishing its capabilities, or contribute to a firm's success by keeping it focused on specific niches, technologies or product-market relationships.

After carefully reading Miller (1993), we noted that there were many parallels between Miller's concept of simplicity and some of the strategy-making process issues addressed by Hart (1991, 1992). We observed that many aspects of simplicity were suggestive of a particular strategy-making style and surmised that Hart's (1991) strategy-making process scale might capture the major elements of a simplistic approach. Further, we noted that simplicity seemed to be a combination of two of the modes described by Hart (see above). Thus, consistent with Hart and other theorists who have argued that SMPs may be combined (e.g., Shrivastava and Grant, 1985), we began to analyze simplicity as a strategy-making process.

Table 1.2 describes the set of arguments that were developed, first by interpreting simplistic strategy making as a combination of two modes described by Hart, then by linking the simplicity arguments from Miller (1990, 1993) to Hart's 1991 scale. Finally, to test Miller's claim that simplistic strategy making might affect performance differently depending on the circumstances, we developed hypotheses based on a model in which stage of development and environment were moderators (refer to table 1.3). In addition to Miller's *AMR* study, we used an empirical test of the effect of simplicity on competitiveness in the airline industry (Miller and Chen, 1993) to develop our hypotheses.

As phase 1 in table 1.2 indicates, we reasoned that simplicity as a strategy-making process combines features of Hart's command and symbolic modes. A command mode often features single-minded focus in the form of steady and clear directives that are articulated by a dominant figure or management group, but that can "mire managers in a single way of seeing and doing things" (Miller, 1993: 122). A symbolic mode relies on a consistent vision to foster "an implicit control system, based on shared values" (Hart, 1991: 109). This vision helps align the efforts of organizational members, but may also create a sort of "one best way" approach that "can bring about oppressive conformity" (Miller, 1993: 122). In combination, these strategy-making modes may create a simplistic SMP.

At the time, we were working with a slightly modified version of Hart's (1991) 25-item instrument. The items that appeared to be related to simplicity in strategy making included the following:

V1. There is a clear blueprint for this organization's strategy that was set some time ago and has changed very little.
V2. There is a clear and consistent set of values in this organization that governs the way we do business.
V3. This organization has a characteristic "management style" and a common set of management practices.
V4. The way we do things in this organization is well suited to the business we are in.

As reported in phase 2 of table 1.2, in the next step of our research, we compared Miller's (1993) descriptions of simplicity with Hart's scale items. Our primary focus was on the process issues related to simplicity but, as is often the case with any organizational gestalt, other variables seemed to support our interpretation. For example, the culture of

TABLE 1.2 Theoretical development of simplicity as a strategy-making process – part 1: construct development

Phase 1 – Interpretation of simplistic SMP as a combination of command and symbolic modes

Page	*Hart (1992) cites/quotes*	*Interpretation*
335	"The five modes are not seen as mutually exclusive. In practice, organizations may combine two or more modes into distinctive combinations . . ."	Hart consistently suggests that an organization's strategy-making process may result from the combining of his "pure" modes. This is the case with simplicity as an SMP. It can be argued that the simplistic mode is a combination of the symbolic mode and the command mode.
	"firms usually develop competence in several modes"	
335–6	In the command mode a central leader or small management group succeeds in imposing their view on the whole organization. "In such a mode, strategies are deliberate, fully formed, and ready to be implemented"	The command mode suggests a highly focused approach in which stratregic decisions are handed down with little debate. As such the pet policies or dominant methods supported by strong leadership become the primary focus of the organization and thus it tends toward simplicity.
340	"With both the command and generative modes, particular organizational skills and capabilities go underutilized."	Just as the command mode is a less-than-optimal, underutilizing approach, a simplistic SMP is so narrow and focused that organizational resources and talents may be underutilized.
341	stated again: in the command mode, "skills go underutilized"	
342	"The command mode should, therefore, function well only in relatively simple situations – a task environment low in complexity."	In terms of key contingencies related to simplicity, a simplistic SMP appears to be more closely aligned with the low complexity, simple situation approach of the command mode rather than the flexible, dynamic approach suggested by the symbolic mode. This suggests further that the simplistic approach, while it may use the symbolic technique of persuading organizational members to closely adhere to the organization's mission, typically applies better in the low variety context suggested by the command mode.
343	"In a dynamic, high velocity environment, the symbolic mode may hold the key to the speed and flexibility necessary for competitive success."	

Phase 1 – continued.

Page	*Hart (1992) cites/quotes*	*Interpretation*
334	With the symbolic mode of strategy making, "leaders attend primarily to articulating a mission and creating a vision and common perspective that helps guide the actions of organizational members toward a common goal."	The symbolic mode relates to simplicity in that a prevailing culture and established set of values causes organizational members to develop an emotional commitment to an organization. It becomes simplistic, however, when "the culture of the organization comes to focus more narrowly and passionately on one or two pervasive and dominant goals" (Miller, 1993: 122).
337	"In this way the symbolic mode creates an implicit control system, which is based on shared values. It hinges on the nurturing of a shared perspective for all organizational members, that is, a clear mission, shared values, and an emotionally appealing corporate vision or dream."	There is an emphasis on motivating organizational members to adopt the vision and make the organization's mission a model for their own individual behavior. This creates a sort of "one best way" approach that "can bring about oppressive conformity" (Miller, 1993: 122).
345–6	"configurations of similar modes should be associated with lower performance. More specifically, proximal modes (those with more similar roles for top managers and organizational members such as the transactive and generative modes) should tend to occur together in lower performing firms."	In Hart's framework, the command and symbolic modes are proximal modes that may lead to lower performance when, in combination, they manifest as simplistic.

Phase 2 – Interpretation/analysis of Hart's (1991) scale

Page	*Miller (1993) cites/quotes*	*Interpretation*
121	Success gives executives "too much confidence in a single way of conducting business or in one dominant element of strategy."	Supports V3 – common set of management practices and V1 – strategy set some time ago and changed very little.
119	"experienced managers form quite definite opinions of what works and why."	Also supports V4 – the way we do things is well suited to the business we are in.

122	"the culture of the organization comes to focus more narrowly and passionately on one or two pervasive and dominant goals. Such strong cultures can make work meaningful, can galvanize employees to take action, and can generate tremendous enthusiasm. But they also mire managers in a single way of seeing and doing things. They can bring about oppressive conformity, blindness and intolerance."	Support for V2 – consistent set of values in this organization that governs the way we do business. Also supports V1 – blueprint set some time ago and changed very little and V4 – the way we do things is well suited to the business we are in.
123–4	Proposition 4: In successful organizations, *values will become more homogeneous*, reducing sub-unit differentiation; *a single department or elite will become more dominant*; and the skill set of the organization will narrow. These changes will contribute to the formation of monolithic cultures and strategies (emphasis added).	Support for V1, V2 and V4 as described above. Also support for V3 – characteristic management style and common set of practices.
124	Section on Structural Factors suggests that routines and established programs make strategies narrower and resistant to change.	Support for V1 – there is a clear blueprint for this organization's strategy that was set some time ago and has changed very little.
127	Section on Process Factors suggests that when decision-making is preprogrammed, "most activities do not take place in response to problems, but rather because policies, strategies, and programs *automatically* generate particular actions" (emphasis in original).	Also suppoort for V3 – a common set of management practices.
129–30	"Organizational configurations are highly thematic. Eventually all aspects of an organization reflect the core set of values, goals and interests . . . They can be likened to dynamic systems whose initial themes establish a characteristic momentum."	Support for V2 – clear and consistent set of values that govern and V3 – characteristic management style and practices.

an organization experiencing simplicity affects many aspects of its strategy-making processes. Overall, we determined that there were strong parallels between Miller's concept of simplicity and simplicity in strategy making as represented by Hart's scale.

Our next task was to relate simplicity to performance. Along with the information described in table 1.2, we interpreted other passages from Miller (1993) as well as an empirical study by Miller and Chen (1993) that suggested how a simplistic SMP might relate to performance and what conditions might impact that relationship. These interpretations are reported in table 1.3. Two key contingencies seemed to be most likely to affect performance. The first was the stage of organizational development. A key point in Miller's research was that simplicity might benefit firms in their early stages of development. The argument was that the kind of single-mindedness and targeted effort characteristic of simplicity might actually benefit either a young firm that needed to focus its efforts or a company with a simple structure (Mintzberg, 1979) that had to leverage a narrow resource base. But as the firm grew and faced more complex situations, it would need to evolve more complex systems as well, consistent with Ashby's (1956) "law of requisite variety." Thus, we hypothesized that firms in their early stages of development would benefit from a simplistic SMP whereas firms in later stages would suffer if they were overly simplistic.

A similar set of arguments and, in particular, the findings of Miller and Chen (1993), led us to two hypotheses about the role of simplicity in dynamic and heterogeneous environments. Miller and Chen had hypothesized that the complexity of heterogeneous environments was a poor match for firms with simple strategies. They found that firms with simple competitive repertoires were poorer performers in environments that were more heterogeneous. In Miller (1993), turbulent environments were also predicted to be problematic for simple firms. In the end, we hypothesized that both heterogenous and dynamic environments would be associated with lower performance in firms with a simple SMP.

Briefly, we conducted our study of simplistic strategy making in two phases (Lumpkin and Dess, 1995). In phase 1, we found that the four items we had identified above from Hart's 25-item scale did load on a single factor based on a factor analysis of the responses of 96 executives from firms competing in 13 different industries. (Three other factors also emerged in the study including participative SMP, innovative SMP, and adaptive SMP). The 96 executives represented 32 firms and, in phase 2, we conducted firm-level analysis using moderated hierarchical regression analysis. The findings supported our hypotheses about the effect of a simplistic SMP on performance in early stages of development: firms in early stages of organizational development benefited from simplicity in strategy making whereas the more established firms that had high levels of simplicity in strategy making had relatively poorer performance. With regard to the environment hypotheses, firms in heterogeneous environments that had relatively higher levels of simplicity in strategy making were found to have lower performance as predicted. The dynamism hypothesis was not statistically significant.

From this review, it is apparent that any given strategy-making process involves an earnest effort to make informed strategic decisions that coalesce the best strategic thinking around a well-researched action plan. It involves a keen awareness of the environment and knowledge of the status of numerous organization factors such as stage of development. From a practitioner's standpoint, it is also apparent that companies have choices in

TABLE 1.3 Theoretical development of simplicity as a strategy-making process – part 2: hypothesis development

Phase 1 – Stage of development hypothesis

Page	*Miller (1993) cites/quotes*	*Interpretation*
118	"Simplicity can initially bring great rewards when it marshals the strengths of an organization to accomplish what it does best."	Miller makes numerous references to the role of simplicity in the "initial" success of an organization.
131	"Proposition 8: *At first*, increases in all varieties of simplicity will lead to an increase in organizational performance" (emphasis added).	
119	"this article will present three classes of reasons for this encroaching and dangerous simplicity. First, . . . Third, a troublesome paradox exists: The sources of simplicity may underlie initial success and, thus, be doubly difficult to combat. Indeed, it is very hard to distinguish between the concentration and passionate dedication so necessary for success and competitive advantage and the simplistic fixations and extremes that lead to failure."	The first two classes of simplicity identified by Miller are encroaching simplicity – the simplicity that *results from* success. Our paper, however, primarily addresses the third type – dangerous simplicity – in which simplicity *leads to* success. Although most of Miller's discussion revolves around the simplicity that may encroach on a successful organization, he also addresses the paradox of simplicity whereby simplicity that leads to success may be a danger.
130	The Icarus paradox for outstanding companies – "the focus and simplicity that ultimately get them into trouble may once have been responsible for their initial successes."	Thus, simplicity may lead to the kind of "concentration and dedication" that makes for success in the early stages of organization development, but later leads to poor performance.
117	"simplicity implies little variety at a point in time."	Our study suggests that in the early stages of development, variety is low and therefore correctly matched with a simplistic SMP. This is consistent with Ashby's (1956) "law of requisite variety."

Phase 1 – continued

Page	*Miller and Chen (1993) cites/quotes*	*Interpretation*
32	"Sometimes simplicity will be a cause as well as a product of success."	Whereas Miller and Chen focused on investigating whether "competitive simplicity would develop *from* success" (p. 36 – emphasis added), our study investigated whether simplicity would *lead to* success, that is, be associated with success when used in the initial stages of organizational development.
35	Referring to Hypothesis 6, the authors investigated the proposition that "as simplicity increases, performance first rises and then declines."	We investigated how simplicity related to performance as a function of stage of organizational development. Our hypothesis was that simplicity would lead initially (in the initial stages) to success but be associated with declining performance in later stages.

Phase 2 – Environment hypotheses

Page	*Miller (1993) cites/quotes*	*Interpretation*
118	"if an organization were too simple to manage the complexity of its environment, its very survival might be threatened."	Simplicity is portrayed as the "opposite" of complexity. Miller suggests that simplicity in the face of a complex (or heterogeneous) environment not only inhibits performance but may affect a firm's survival.
117	The "objective" form of simplicity may include "dominance of a single goal or subunit" or the diminishment of a skill set. "But simplicity may also be reflected subjectively, by the narrowing, increasingly homogeneous managerial 'lenses' or world views that often underlie the more objective forms of simplicity."	Drawing on Ashby's (1956) "law of requisite variety," one of Miller's key arguments is that an organization's internal systems must have the same level of variety or heterogeneity as the external environment it faces. If managers become too homogeneous in their outlook, they may be unable to compete in a complex world, leading to poor firm performance.

132	Proposition 10: Simplicity will be less prevalent, even under conditions of success, where . . . the environment is turbulent."	If it were to occur at all, a simplistic SMP would not likely be associated with successful outcomes under conditions of environmental dynamism and turbulence. Strategy making that is characterized by norms and routines is poorly suited for environments that require flexibility and quick response.
134	"Simplicity might be quite viable in stable environments, but it could lead to serious mismatches when external turbulence occasions the need for organizational reorientation."	

Phase 2 – continued

Page	*Miller and Chen (1993) cites/quotes*	*Interpretation*
32	"In short, simplicity, which serves initially as a powerful competitive tool, may hurt performance in heterogeneous settings or when taken to extremes."	Miller and Chen (1993) found an inverse-U relationship between simplicity and performance: "as simplicity increases, performance first rises and then declines." However, when the interaction of simplicity and heteropgeneity was tested for its relationship to performance, it was found that simplicity was nearly always associated with poor performance.
33	"simplicity is especially harmful to performance in heterogeneous markets."	
35	"Diverse markets elicit a broad array of competitive tactics and discourage concentration on a few types of activities."	Even though Miller and Chen's study focused on the simplicity of competitive repertoires rather than simplicity in strategy making, their study provides several insights that may apply to a simplistic SMP. This includes the role of market diversity in contributing to environmental dynamism. Their findings suggest that a simplistic approach would be a poor match for a dynamic environment.

how they engage in strategic processes. Although cultures, like personalities, are not easily changed, practices can be modified and new processes can be employed to achieve better outcomes as organizational and environmental conditions evolve. Rapid change, the emergence of new markets, intensified levels of innovation, and new applications of information technologies are among the factors that are affecting strategy-making processes in the emerging knowledge economy. It is this important topic that we turn to next.

The Role of Processes in Combining and Leveraging Resources

For most of the twentieth century, the primary resources of concern to management were tangible resources such as land, natural resources, and money as well as intangibles including brands, image, reputation, and customer loyalty. (This discussion draws on Dess and Picken, 1999.) The major focus of managerial efforts was directed toward the more efficient allocation of labor and capital – the two key factors of production. However, today more than 50 percent of the Gross Domestic Product in developed economies is knowledge-based, that is, based on intellectual assets and intangible people skills. These include high-profile industries such as telecommunications, computers, software, pharmaceuticals, healthcare, education, and so on (*The Economist*, 1996; Hamel, 1997). As recently noted by Hamel and Prahalad:

> The machine age was a physical world. It consisted of things. Companies made and distributed things (physical products). Management allocated things (capital budgets); management measured things (the balance sheet); management invested in things (plant and equipment). In the machine age, people were ancillary, things were central. In the information age, things are ancillary, knowledge is central. A company's value derives not from things, but from knowledge, know-how, intellectual assets, competencies – all of it embodied in people (1996: 241).

In today's knowledge economy, wealth is increasingly generated through the management of knowledge workers instead of by the efficient control of physical and financial assets. Nowhere is this more evident that in the widening gap between the market capitalizations and book values of today's corporations whose keys to success lie in the effective leveraging of human capital. Consider, for example, the difference in the market value to book value ratios (as of November, 2000) for knowledge-intensive firms such as America Online (20.8), Amazon.com (47.4), Yahoo, Inc. (36.6), and Oracle (52.8) compared to traditional industrial firms with huge investments in physical assets such as General Motors (1.7), Alcoa (3.7) and Boeing (4.7).

As a result, leading-edge firms are recognizing the need to develop cultures, processes, structures, and effective organizational settings in order to combine and leverage individual competencies and talents. To be successful, it is not only the stock of resources that a firm possesses, but the extent to which they are profitably leveraged. Strategy-making processes are also evolving that reflect the heightened need to leverage knowledge assets. This evolution involves several elements including the more effective management and deployment of knowledge capital and networking techniques that enhance the creation of new knowledge. For example, in a 1992 interview, Paul Allaire, Xerox's newly appointed CEO, was asked how he intended to revitalize his firm. He articulated his intent to lead

"a company that combined the best of both worlds – speed, flexibility, accountability and creativity that comes from being a part of a small, highly focused organization; and the economies of scale, access to resources, and strategic vision a large company can provide" (Howard, 1992: 109). He claimed his primary objective was to redesign and combine the three essential components of organizational architecture: *the hardware* – organizational structure and formal processes; *the people* – skills, personality and character; and *the software* – "the informal networks and practices linking people together, the value system, the culture" (Howard, 1992: 112). The notion that "informal networks and practices" are the "links" that bring organizations together is an idea that has also been articulated by Hamel and Prahalad. They argue that "the real sources of competitive advantage are to be found in management's ability to consolidate corporate-wide technologies and production skills into competencies that empower individual businesses to adapt quickly to changing opportunities" (Prahalad and Hamel, 1990: 82). Strategic processes, in this context, must enhance a firm's ability to capitalize on its collective strengths and constantly build new ones.

The potential sustainability of advantages created by combining and leveraging resources is also central to the resource-based view of the firm. Barney (1991) and Wernerfelt (1984) have argued that such advantages stem from *unique bundles* of resources that competitors cannot imitate. Typically, such imitation is difficult due to the scarcity, specialization, and tacit knowledge implicit in human assets (Lippman and Rumelt, 1982). By contrast, "physical technology, whether it takes the form of machine tools or robotics or complex information management systems, is by itself typically imitable" (Barney, 1991: 110). As noted by Bogner, Thomas, and McGee (1999), several authors have clarified the link between competitive resources and competitive advantage. For example, Amit and Schoemaker (1993) have distinguished between "resources" as assets that managers deploy and "capabilities," which include skills and competencies within the firm. These authors assert that a key role for managers is to develop (or leverage) the inherent value in these resources. To do so successfully, a fresh approach to strategy making that makes greater use of new knowledge technologies and simultaneously empowers managers to make vital strategic decisions is emerging. This view is reflected in new perspectives on the strategic processes by which competencies and capabilities are managed.

For example, Teece, Pisano, and Shuen (1997) have clarified the difference between "core competence" and "dynamic capabilities" by stressing the ongoing managerial processes involved in continually combining resources for advantage. In their view, dynamic capabilities refer to "firm specific capabilities that can be sources of advantages and . . . [that] combinations of competencies and resources can be developed, deployed and protected" (1997: 510). Spender has also argued that: "So long as we assume markets are reasonably efficient it follows that competitive advantage is more likely to arise from the intangible firm-specific knowledge which enables it to add value to the incoming factors of production in a relatively unique manner" (1996: 46). This emphasis on competencies, capabilities, and the dynamic aspects of strategic processes is central to successfully combining and leveraging the resources of a knowledge-based economy.

Leading companies are also realizing that hiring top-flight talent and creating work environments that support meaningful interactions is a critical step in attaining com-

petitive advantages in an intensely competitive global economy. Beyond simply obtaining strong talent, however, successful strategy making requires that complementary skills and knowledge assets be effectively combined. Peteraf (1993) provides an interesting hypothetical example (embellished by the present authors) of the value inherent in such resource combinations. She discusses two contrasting scenarios in which a firm has hired a brilliant Nobel-prize winning scientist. In one case, the firm provides excellent facilities, financial resources, and so on, and then requires the scientist to essentially work alone. In the other case, the scientist is not only provided with such physical and financial resources, but also is expected to collaborate with other talented scientists. There is little question as to which scenario will lead to more favorable outcomes – clearly, it is in collaboration. Additionally, the collaborative approach would create an environment where the prize scientist would more likely develop firm-specific ties and be less likely to terminate his employment with the organization. Such ties are critical since, as noted by Miller and Shamsie (1996), knowledge-based resources are tacit in nature and cannot easily be protected against unauthorized transfer (as opposed to property-based resources). Capelli (2000) and others have argued that professionals tend to have more loyalty to their immediate workgroup than to their employing organization.

In addition to combining resources within the firm, the use of interorganizational network relationships with suppliers, customers, and alliance partners is also an increasingly common mechanism through which organizations combine and leverage resources (Dyer and Singh, 1998). A wide variety of industries are increasing their reliance on forms of network governance, a means of coordination characterized by informal social systems instead of bureaucratic structures within firms and formal contractual relationships (Powell, 1990; Ring and Van de Ven, 1994; Snow, Miles, and Coleman, 1992). Such governance structures not only serve to lower transaction costs but also are often essential to achieve a high level of coordination of products, services, and technologies in highly uncertain and competitive markets. These efforts take strategy making beyond the traditional corporate boundaries and into interorganizational fields where new rules are shaping the wealth creation process (Jones, Hesterly, and Borgatti, 1997).

A suggested framework

As noted earlier, there has been a widening gap between the market value and book value of corporations of all sizes in industrialized economies of the world. This gap is more widely pronounced in firms and industries where the relative importance of human capital is high compared to physical and financial assets. Many authors (Stewart, 1997; Edvinsson and Malone, 1997) have used the term *intellectual capital* to characterize the sum of all of the intangible factors that contribute to the gap between market value and book value. This admittedly broad definition includes everything other than tangible assets that contribute to a firm's market value. This would include assets such as employee loyalty and commitment, company values, brand names, trademarks, customer loyalty, and the experience and skills of the employees. *Human capital*, on the other hand, is typically viewed as consisting of the individual skills, knowledge, and capabilities that are relevant to the task at hand, as well as the capacity to add to this base of knowledge. *Organizational knowledge* consists of the firm's legally protected information (e.g., patents

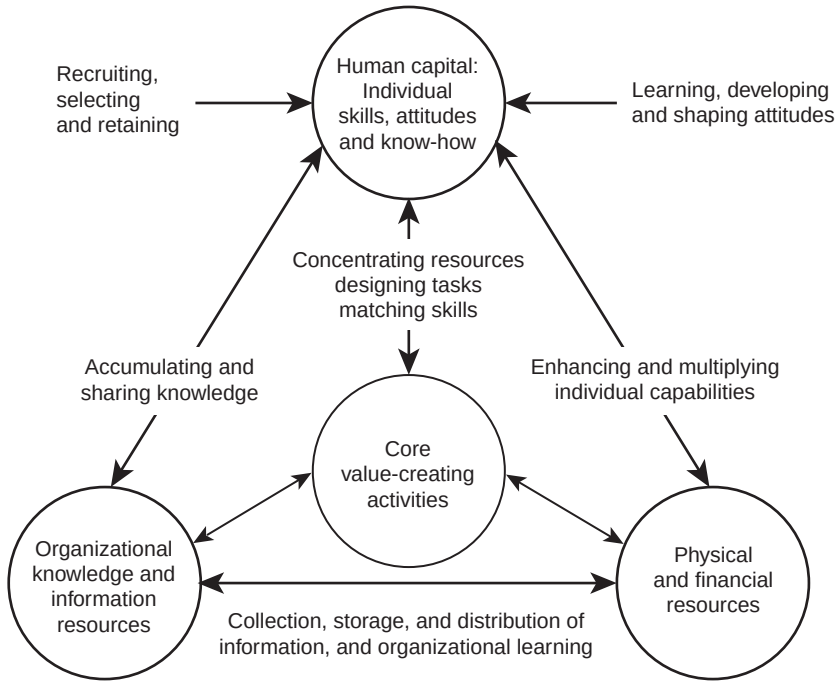

FIGURE 1.1 Opportunities for leveraging human capital
Source: Dess and Picken (1999: 19).

and copyrights), explicit knowledge and information (e.g., engineering drawings, sales collateral), and management processes, as well as industry know-how. Physical and financial resources consist of both physical assets (e.g., land, machinery, equipment) as well as financial assets (e.g., cash, accounts receivable). *Structural capital* may be described as "the embodiment, empowerment and supportive infrastructure of human capital – in a word, everything left at the office when the employees go home" (Edvinsson and Malone, 1997: 35). It includes core value-creating activities such as organization structure, systems, processes, and culture. The information and definitions in table 1.4 expand on these four key concepts.

Figure 1.1 illustrates the primary relationships among an organization's resources (human, information, physical, and financial), its core value-creating activities, and its organizational structure, systems, processes, and culture. The key role of structural capital is to link an organization's resources with the processes that create value for elements in a firm's expanded value chain (Porter, 1985) – customers, suppliers, and alliance partners – and advantages for the firm. The organization's core business activities – for example, order fulfillment, inbound logistics, sales and marketing – are essential elements of structural capital. However, equally important are a firm's information and communications structures, internal support functions, incentives and performance measurement systems, culture, leadership, and so forth. These elements are at the

TABLE 1.4 Leveraging human capital: key concepts

Human capital

Individual capabilities, knowledge, skill, and experience of the company's employees and managers, as they are relevant to the task at hand, as well as the capacity to add to this reservoir of knowledge, skills, and experience through individual learning.

Organizational knowledge and information resources

1) The organization's documented and legally protected information, including patents, trademarks and propriety processes.
2) Technical and financial data, engineering drawings and libraries, sales catalogs, customer lists, sales collateral, advertising copy, and so forth stored in files, databases, and other forms
3) Management, process, and industry know-how.

Physical and financial resources

All of the organization's physical assets (land, buildings, equipment, inventories, leaseholds, etc.) and its financial resources (cash, accounts receivable, etc.)

Structural capital

Everything else – the organization's core value-creating activities, organizational knowledge, and information resources, and the organization's structure, systems processes, and culture. Following are the key components of structural capital:

Core value-creating activities

- Core busines processes
- External relationships with customers, suppliers, and alliance partners
- Reputation, brand loyalty, image, and legitimacy

Organizational structure, systems, processes, and culture

- Organizational and reporting structures
- Operating systems, processes, procedures, and task designs
- Information and communications infrastructures
- Resource acquisition, development, and allocation systems
- Decision processes and information flows
- Incentives, controls, and performance measurement systems
- Mechanisms to promote sharing, collaboration, and organizational learning
- Organizational culture, values, and leadership

Source: Adapted from Dess and Picken (1999).

heart of most strategy-making processes.

No one element or factor of structural capital by itself is likely to create a sustainable competitive advantage. Instead, sustainability typically requires complex interdependencies and interactions among multiple processes and resources as suggested above. Management's challenge is to structure, link, and combine human capital and other forms of capital into unique capabilities that not only maximize individual productivity but also the outcomes of collective efforts as well. The goal is to create sustainable advantages in the marketplace, that is, to be resistant to imitation (Barney, 1991). While a firm's physical and financial capital certainly cannot be ignored, effort must be directed at the continual development and leveraging of knowledge, skills and know-how from the organization's human capital. As noted by Hitt, et al. (2001: 9), "learning complex forms of knowledge requires face-to-face interactions (which) . . . can produce a combination of individual skills and knowledge that leads to novel and valuable outcomes." Successful implementation, in turn, will largely depend on how effectively the organization designs and implements the elements of its structural capital.

Suggested research directions

We believe that the proposed framework for leveraging human capital (figure 1.1) has many implications for the conduct of future research into the role of strategy-making processes in the knowledge economy. The following examples form a large set of questions from which a strategy-making process research agenda could be derived.

First, Nahapiet and Ghoshal (1998) have eloquently argued that social capital facilitates the development and creation of intellectual capital. They refer to intellectual capital as "the knowledge and knowing capability of a social collectivity, such as an organization, intellectual community, or professional practice" (p. 245). Social capital is referred to as "the sum of actual and potential resources embedded within, available through, and developed from the network of relationships possessed by an individual or social unit" (p. 243). Thus, our framework could provide a means for assessing the role of social relations at many points of leverage such as in aiding in the accumulating and sharing of knowledge throughout the organization, enabling organizational learning, and concentrating resources through employees' identification with an organizational mission. In effect, it would provide insights into both "how" social capital facilitates the formation of intellectual capital, as well as "why" individuals are motivated to contribute to firm-specific knowledge which may have limited application beyond the organizational boundaries (Becker, 1964). The latter, of course, strengthens employees' firm-specific ties and decreases the mobility of human assets (Coff, 1997). Thus, future research might link personal motivation with issues of strategy-making processes and social capital, or investigate how social capital impacts the effectiveness of different strategy-making modes.

Second, drawing on our discussion earlier in this chapter, the framework could also provide insights as to how dimensions of a firm's entrepreneurial orientation (EO) can enhance a firm's efforts to achieve and sustain competitive advantages. For example, a strong culture and information system could enhance the diffusion of innovative activities throughout an organization's value-creating activities. This, in turn, might increase the likelihood that tacit knowledge would become codified (Polanyi, 1967) and applied to

innovative initiatives by more organizational members. As noted by Nonaka and Takeuchi, "Knowledge is created and expanded through social interaction between tacit knowledge and explicit knowledge" (1995: 61). Quinn, Anderson, and Finkelstein (1996) have articulated how knowledge accumulates through information sharing. That is, as an individual shares knowledge with others, those individuals obtain the benefits from the information, that is, linear growth. However, when additional people share it with others and feed back questions, amplifications, and modifications that add further value for the original sender, such accumulation of knowledge creates exponential growth. Thus, the study of a firm's elements of structural capital could provide insights into the processes and social interaction's through which a firm's human capital (i.e., individual level) could be leveraged and combined more effectively – through reward systems, culture, leadership, and so on. The result might be a shift in strategy-making processes aimed at internal corporate development.

Third, researchers should implicitly recognize the need for alternate perspectives on the concept of risk taking in the knowledge economy. What may initially appear to be a risky endeavor may prove to be less risky when one considers the increasing salience of social, human, and intellectual capital as well as the implications of options theory. Many intangible resources lend themselves readily to new resource combinations (McGrath, 1999). For example, through entrepreneurial efforts, firms that develop dynamic capabilities, that is, knowledge and skills that can be readily redeployed, can more effectively compete in new markets or with new products and technologies (Teece, Pisano, and Shuen, 1997). Similarly, consistent with the real options literature, the "platform" from which organization learning may occur may also create new options (Grenadier and Weiss, 1997). Such learning adds to their resource stocks of "combinative capability" (Kogut and Zander, 1992). Thus, from the perspective of performance outcomes, efforts directed at strategy-making processes may result in longer-term economic payoffs than traditional efficiency and effectiveness measures would capture. In addition to the need to incorporate lag effects, therefore, researchers must strive to incorporate the increasing criticality of resource combinations and the creation of learning platforms as desirable – but more longer-term – outcomes in strategy-making processes.

Fourth, research could explore the extent to which each of the primary types of capital – that is, human capital, organizational knowledge, physical and financial – contribute to sustainability of advantages. Several research questions might be pursued. For example, are strategy-making processes, and cultural and structural conditions necessary to effectively overcome the limited physical and financial resource base inherent in many entrepreneurial ventures? Are all such conditions necessary, or is some subset of resources sufficient? Another issue to consider is: How can elements of structural capital (e.g., reputation) act as substitutes for other types of capital (e.g., financial) and enhance a firm's competitive advantages and sustainability?

Fifth, research may address the question of what factors in an organization inhibit the leveraging of human capital. Can an otherwise strong culture and structure lead to core rigidities (Hamel and Prahalad, 1996) that detract from innovation and creative activities? For example, should accepted behaviors and belief systems become institutionalized, innovation will become stifled because tacit social pressures may inhibit individuals from diverging from established procedures and practices (DiMaggio and Powell, 1983). If such a condition occurs, what structural and systems components can encourage the free

flow of information throughout the organization and enhance a firm's knowledge base? Similar to the point above, how can other elements of structural capital "offset" a culture that has potentially dysfunctional outcomes? With regard to all of these issues, what are the implications in terms of implementing strategic processes that can overcome limitations and build on existing capabilities?

Sixth, work should also be directed toward exploring the "best practices" of leading-edge firms to explore how they are combining and leveraging resources. Such development of normative theory could inductively lead to more interesting research questions worthy of further inquiry. Additionally, a central question becomes the extent to which "best practices" may be generalized to other settings. Here, it may be useful to refer to Rosenberg's (1968) distinction between two types of generalization: descriptive and theoretical. Whereas descriptive generalizations involve generalizing "a finding based on a smaller number of cases to a broader population" (p. 222), theoretical generalizations occur when "variables are seen as *indicators* or *indices* of broader concepts" (p. 223, emphasis in original). Therefore, in the former case, one would need to exercise caution as to what conditions among cases in a study are sufficiently similar to generalize a "best practice," (e.g., in terms of size, industry, technology), at least in a normative sense. Further, one would have to carefully select industry settings at, for example, the four-digit SIC level given the high levels of intraindustry variation (Porter, 1980). This may be particularly true in rapidly changing, technologically intensive industries. The benefits first-movers would enjoy may vary significantly due to such factors as the level of technological intensity, entry and mobility barriers, stage of product life cycle, etc. Thus, the relationships between innovative and proactive decision processes may vary significantly within an industry.

With regard to theoretical generalizations, one must also exercise caution. As noted in table 1.4, the concept of structural capital has many subdimensions. Thus, one may be unwise to rely on just one or a small set of the subdimensions as indicators of the broader concept of structural capital. As an example, an innovative culture and dynamic leadership may be undercut by outdated information systems and a dysfunctional reward system. Thus, some positive elements of a firm's structural capital may be offset by relatively weaker elements.

Conclusion

In this chapter we have addressed many theoretical and empirical issues associated with two strategy making process (SMP) constructs – entrepreneurial orientation (EO) and simplicity. We have summarized the research that helped to further clarify these constructs and have linked them to organizational performance. We investigated the role of several moderating variables in these relationships. In addition to advancing descriptive theory of strategy processes, we feel that these two constructs have important implications for normative theory as well. Given today's knowledge economy with its emphasis on innovation and creativity, we feel that it is important to identify factors that serve to augment (or suppress) such activities. Also, given that both the traditional factors of production and the managerial and knowledge resources that are so critical to success in today's

economy are characterized by inherent scarcity, assessing the conditions under which a "simplicity" SMP is viable is also an important topic for future research. For example, when should a firm focus its efforts on a narrow range of strategic activities? And if a narrower strategy is pursued, does this also require simplicity in deploying knowledge resources, or would such a situation require more complexity in leveraging intellectual capital?

We have also addressed many research avenues concerning the relevance of strategy-making processes in successfully combining and leveraging resources. This is an especially salient topic in today's knowledge economy given the importance of "unique combinations of resources" as the basis for sustainable competitive advantages. The integrative model presented in figure 1.1 (Dess and Picken, 1999) provides a multidimensional framework that, we believe, can increase the rigor and relevance of both theory building and empirical research.

Research is a continual process of rediscovery. Our aim has been to provide a basis for some "interesting" (Davis, 1971) research endeavors. Also, given that there are numerous other perspectives and insights – some competing or conflicting – it is our hope that our efforts also spur additional dialogue and debate.

Acknowledgments

The authors wish to thank Tammy Ross, Bruce Skaggs, Wally Ferrier, and Doug Lyon for their helpful comments on an earlier draft of this manuscript.

References

Allison, G. T. (1971). *Essence of Decision*. Boston, MA: Little, Brown.

Amit, R., and Schoemaker, P. J. H. (1993). Strategic assets and organizational rent. *Strategic Management Journal*, 14: 33–46.

Andrews, K. R. (1971). *The Concept of Corporate Strategy*. Homewood, IL: Dow Jones-Irwin.

Ashby, W. R. (1956). *An Introduction to Cybernetics*. Englewood Cliffs, NJ: Prentice-Hall.

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

Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education.* Chicago: University of Chicago Press.

Boal, K., and Bryson, J. (1987). Representation, testing and policy implications of planning processes. *Strategic Management Journal*, 8: 211–31.

Bogner, W. C., Thomas, H., and McGee, J. (1999). Competence and competitive advantage: Towards a dynamic model. *British Journal of Management*, 10: 275–90.

Bourgeois, L. J. (1980). Strategy and environment: A conceptual integration. *Academy of Management Review*, 5: 25–39.

Bower, J. L. (1970). *Managing the Resource Allocation Process.* Cambridge, MA: Harvard University Press.

Burgelman, R. A. (1983). A process model of internal corporate venturing in the diversified major firm. *Administrative Science Quarterly*, 28: 223–44.

Capelli, P. (2000). A market-driven approach to retaining talent. *Harvard Business Review*, 78(1): 103–13.

Coff, R. W. (1997). Human assets and management dilemmas: Coping with hazards on the road to resource-based theory. *Academy of Management Review*, 22: 374–402.

Covin, J. G., and Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, 10: 75–87.

Cyert, R. M., and March, J. G. (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.

Davis, M. (1971). That's interesting! *Philosophy of Social Science*, 1: 309–44.

Dess, G. G. (1987). Consensus on strategy formulation and organizational performance: Competitors in a fragmented industry. *Strategic Management Journal*, 8: 259–77.

Dess, G. G., Lumpkin, G. T., and Covin, J. G. (1997). Entrepreneurial strategy making and firm performance: Tests of contingency and configuration models. *Strategic Management Journal*, 18(9): 677–95.

Dess, G. G., Lumpkin, G. T., and McGee, J. E. (1999). Linking corporate entrepreneurship to strategy, structure, and process: Suggested research directions. *Entrepreneurship Theory and Practice*, 23(3): 85–102.

Dess, G. G., Newport, S., and Rasheed, A. (1993). Configuration research in strategic management: Key issues and suggestions. *Journal of Management*, 19(4): 775–95.

Dess, G. G., and Picken, J. C. (1999). *Beyond Productivity: How Leading Companies Achieve Superior Performance by Leveraging their Human Capital*. New York: AMACOM.

DiMaggio, P. J., and Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48: 147–60.

Doty, D. H., Glick, W., and Huber, G. (1993). Fit, equifinality, and organizational effectiveness: A test of two configurational theories. *Academy of Management Journal*, 36(6): 1196–250.

Dyer, J. H., and Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, 23: 660–79.

Edvinsson, L., and Malone, M. S. (1997). *Intellectual capital: Realizing your Company's True Value by Finding its Hidden Brainpower*. New York: HarperBusiness.

Eisenhardt, K. (1989). Making fast strategic decisions in high-velocity environments. *Academy of Management Journal*, 32: 543–76.

Eisenhardt, K., and Bourgeois, L. J. (1988). Politics of strategic decision making in high-velocity environments: Toward a mid-range theory. *Academy of Management Journal*, 31: 737–70.

Fredrickson, J. W. (1986). The strategic decision process and organizational structure. *Academy of Management Journal*, 11(2): 280–97.

Fredrickson, J., and Mitchell, T. (1984). Strategic decision processes: Comprehensiveness and performance in an industry with an unstable environment. *Academy of Management Journal*, 27: 399–423.

Gale, B. (1972). Market share and rate of return. *The Review of Economics and Statistics*, 54: 412–23.

Greiner, L. (1972). Evolution and revolution as organizations grow. *Harvard Business Review*, 60(4): 37–46.

Grenadier, S. R., and Weiss, A. M. (1997). Investment in technological innovations: An option pricing approach. *Journal of Financial Economics*, 44: 397–416.

Hall, M., and Weiss, L. (1967). Firm size and profitability. *The Review of Economics and Statistics*, 54: 319–31.

Hamel, G. (1997). Killer strategies that make shareholders rich. *Fortune*, June 23: 70–84.

Hamel, G., and Prahalad, C. K. (1996). Competing in the new economy: Managing out of bounds. *Strategic Management Journal*, 17: 232–42.

Hart, S. (1991). Intentionality and autonomy in strategy-making process: Modes, archetypes, and firm performance. In P. Shrivastava, A. Huff, and J. Dutton (eds.), *Advances in strategic management*, 7: 97–127. Greenwich, CT: JAI Press.

Hart, S. (1992). An integrative framework for strategy-making processes. *Academy of Management Review*, 17: 327–51.

Hitt, M. A., Bierman, L., Shimizu, K., and Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Academy of Management Journal*, 44(1): 13–28.

Hitt, M. A., and Tyler, B. B. (1991). Strategic decision models: Integrating different perspectives. *Strategic Management Journal*, 12: 327–51.

Hofer, C. W., and Schendel, D. (1978). *Strategy Formulation: Analytical Concepts*. St Paul, MN: West Publishing.

Howard, R. (1992). The CEO as organizational architect: An interview with Xerox's Paul Allaire. *Harvard Business Review*, 70(5): 107–21.

Ibarra, H. (1993). Network centrality, power, and innovation involvement: Determinants of technical and administrative roles. *Academy of Management Journal*, 36: 471–501.

Jensen, M. C. (1989). Eclipse of the public corporation. *Harvard Business Review*, 67(5): 61–74.

Jones, C., Hesterly, W. S., and Borgatti, S. P. (1997). A general theory of network governance: Exchange conditions and social mechanisms. *Academy of Management Review*, 22: 911–45.

Katz, J., and Gartner, W. B. (1988). Properties of emerging organizations. *Academy of Management Review*, 13(3): 429–41.

Kogut, B., and Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, 3: 383–97.

Lippman, S. A., and Rumelt, R. P. (1982). Uncertain imitability: An analysis of interfirm differences in efficiency under competition. *The Bell Journal of Economics*, 13: 418–38.

Lumpkin, G. T., and Dess, G. G. (1995). Simplicity as a strategy-making process: The effects of stage of organizational development and environment on performance. *Academy of Management Journal*, 38(5): 1386–407.

Lumpkin, G. T., and Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21: 135–72.

Lumpkin, G. T., and Dess, G. G. (2001). Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle. *Journal of Business Venturing*.

Lyon, D., Lumpkin, G. T., and Dess, G. G. (2000). Enhancing entrepreneurial orientation research: operationalizing and measuring a key strategic decision making process. *Journal of Management*, 26(5): 1055–85.

McGrath, R. G. (1999). Falling forward: Real options reasoning and entrepreneurial failure. *Academy of Management Review*, 24: 13–30.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 29: 770–91.

Miller, D. (1987). Strategy making and structure: Analysis and implications for performance. *Academy of Management Journal*, 30: 7–32.

Miller, D. (1988). Relating Porter's business strategies to environment and structure: Analysis and performance implications. *Academy of Management Journal*, 31: 280–308.

Miller, D. (1990). *The Icarus Paradox*. New York: HarperCollins.

Miller, D. (1993). The architecture of simplicity. *Academy of Management Review*, 18: 116–38.

Miller, D., and Chen, M. (1993). The simplicity of competitive repertoires: An empirical analysis. Paper presented at the annual meeting of the Academy of Management (*Proceedings*, pp. 32–6).

Miller, D, and Friesen, P. (1978). Archetypes of strategy formulation. *Management Science*, 24: 921–33.

Miller, D., and Friesen, P. (1982). Innovation in conservative and entrepreneurial firms: Two models of strategic momentum. *Strategic Management Journal*, 3: 1–25.

Miller, D., and Friesen, P. (1983). Strategy-making and environment: The third link. *Strategic*

Management Journal, 4: 221–35.
Miller, D., and Shamsie, J. (1996). The resource-based view of the firm in two environments: The Hollywood film studios from 1936 to 1965. *Academy of Management Journal*, 39: 519–36.
Miller, K., and Bromily, P. (1990). Strategic risk and corporate performance: An analysis of alternative risk measures. *Academy of Management Journal*, 35: 759–79.
Mintzberg, H. (1973). Strategy making in three modes. *California Management Review*, 16(2): 44–53.
Mintzberg, H. (1978). Patterns in strategy formation. *Management Science*, 24: 934–49.
Mintzberg, H. (1979). *The Structuring of Organizations*. Englewood Cliffs, NJ: Prentice-Hall.
Mintzberg, H. (1983). *Power In and Around Organizations*. Englewood Cliffs, NJ: Prentice-Hall.
Mintzberg, H., Raisinghani, D., and Theoret, A. (1976). The structure of "unstructured" decision processes. *Administrative Science Quarterly*, 21(2): 246–75.
Nahapiet, J., and Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23: 242–66.
Nonaka, I., and Takeuchi, H. (1995). *The Knowledge-creating Company*. New York: Oxford University Press.
Peteraf, M. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 14: 179–91.
Pettigrew, A. M. (ed.) (1992). Strategy process research. (Special Issue). *Strategic Management Journal*, Winter.
Polanyi, M. (1967). *The Tacit Dimension*. Garden City, NY: Anchor Publishing.
Porter, M. E. (1980). *Competitive Strategy*. New York: Free Press.
Porter, M. E. (1985). *Competitive Advantage*. New York: Free Press.
Powell, W. W. (1990). Neither market nor hierarchy: Network forms of organization. In B. M. Staw and L. L. Cummings (eds.), *Research in Organizational Behavior*, vol. 12: 295–336. Greenwich, CT: JAI Press.
Prahalad, C. K., and Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68(3): 79–91.
Quinn, J. B. (1980). *Strategies for Change: Logical Incrementalism.* Homewood, IL: Irwin.
Quinn, J. B., Anderson, P., and Finkelstein, S. (1996). Leveraging intellect. *Academy of Management Executive*, 10(3): 7–27.
Rajagopalan, N., Rasheed, A., and Datta, D. (1993). Strategic decision processes: Critical review and future directions. *Journal of Management*, 19: 349–84.
Ring, P. S., and Van de Ven, A. H. (1994). Structuring cooperative relationships between organizations. *Strategic Management Journal*, 13: 483–98.
Rosenberg, M. (1968). *The Logic of Survey Analysis*. New York: Basic Books.
Schweiger, D. M., Sandberg, W. R., and Ragan, J. W. (1986). Group approaches for improving strategic decision making: A comparative analysis of dialectical inquiry, devil's advocacy and consensus. *Academy of Management Journal*, 29: 51–71.
Schwenk, C. R. (1984). Effects of planning aids and representation media on performance and affective responses in strategic decision making. *Management Science*, 30: 263–71.
Scott, B. R. (1971). Stages of corporate development. Harvard University, Intercollegiate Case Clearing House Report No. 9-371-294 BP 998, Boston, MA.
Shrivastava, P. (1983). Variations in strategic decision-making processes. In R. Lamb (ed.), *Advances in Strategic Management*, Vol. 2: 177–89. Greenwich, CT: JAI Press.
Shrivastava, P., and Grant, J. H. (1985). Empirically derived models of strategic decision-making processes. *Strategic Management Journal*, 6: 97–113.
Simon, H. A. (1957). *Administrative Behavior*. New York: Free Press.
Snow, C. C., Miles, R. E., and Coleman, H. J., Jr. (1992). Managing 21st century network organizations. *Organizational Dynamics*, 20: 5–20.
Spender, J.-C. (1996). Making knowledge the basis of a dynamic theory of the firm. *Strategic*

Management Journal, 17: 45–62.

Stetz, P. E., Howell, R., Stewart, A., Blair, J. D., and Fottler, M. D. (2000). *Multidimensionality of Entrepreneurial Firm-level Processes: Do the Dimensions Covary?* Paper presented at the 2000 Babson-Kauffman Entrepreneurship Research Conference, Wellesley, MA.

Stewart, T. A. (1997). *Intellectual Capital: The New Wealth of Organizations*. New York: Doubleday/Currency.

Teece, D., Pisano, G., and Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18: 509–34.

The Economist (1996). An acknowledged trend: The world economy survey. September 28: 25–28.

Van de Ven, A. H. (1992). Suggestions for studying strategy process: A research note. *Strategic Management Journal*, 13: 169–88.

Venkatraman, N. (1989). Strategic orientation of business enterprises: The construct, dimensionality, and measurement. *Management Science*, 35(8): 942–62.

Weick, K. E. (1979). *The Social Psychology of Organizing*. Reading, MA: Addison-Wesley.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5: 171–80.