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SIMILARITIES AND CONTRADICTIONS IN THE CORE LOGIC OF THREE STRATEGY RESEARCH STREAMS

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The logical foundations shaping three prominent streams of strategic management thought are summarized and then compared and contrasted. The intent is to determine whether these research streams are restatements of a single core logic using different terms to describe the same phenomena and relationships, or whether they provide alternate, and potentially competing, explanations for effective strategic action. Analysis reveals some concordant assertions, some similarities across pairs of frameworks, and some fundamental contradictions among the various logic sets. Since key elements in the fundamental premises of each research stream present logical contradictions with each of the other two, a strategy derived from an integration of these perspectives creates inconsistencies in a firm's enacted context, its assumptions about strategy making, and its administrative arrangements. As circumstances change, a firm may be required to undergo a 'core logic shift' to maintain consistency between its strategy and its strategic context. When a shift becomes necessary, a firm needs to overcome structural inertia, competitive inertia, organizational momentum, and its current management logic to maintain internal consistency. Additional implications of the comparison of these three logics for both theory and practice are discussed. Copyright © 1999 John Wiley & Sons, Ltd.

A persistent challenge in the field of strategic management is deciding what theoretical tool to use to describe or predict strategic circumstances, actions, and consequences. As Rumelt (1979) explained, the kinds of situations that call for strategic thinking and analysis are those that are ill structured and thereby difficult and ambiguous. Rumelt offered four tests to identify effective strategy theories. (1) The goal consistency test requires a theory to specify primary goals and to avoid inherently conflicting objectives. (2) The frame test requires a theory to distinguish important from unimportant factors and to define critical subproblems that must be resolved. (3) The competence test requires a theory to offer ways to use organizational skills, resources, and competencies to resolve critical issues. (4) The workability test requires a theory to provide a reasonable expectation that desired results can be achieved if the theory is applied appropriately.

We use the term *core logic* to describe the composite principles and premises of a strategy theory that respond directly to these four tests. Conceptually 'core logic' is a generic term like 'hypothesis.' Just as alternate hypotheses can be considered, the core logic underlying a specific strategy can be compared with the distinct core logics of alternate perspectives to identify similarities and differences in root assumptions. In other words, a core logic is a set of articulated principles that specify strategic goals, frames, competencies, and expectations for success. Premises comprising core logic describe the factors and relationships that explain the expected conse-

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quences of a firm's strategic choices and actions. A core logic articulates the logical foundation for structuring unstructured strategic problems. It is applied within an enacted context in which firms create many of the external conditions they face (Weick, 1995). Rumelt's criteria enable a systematic examination of a core logic's utility as well as its specific content elements. The conceptual architects of at least three research streams (i.e., resource-based views of the firm, hypercompetition and high-velocity strategies, and ecosystem/chaos theories) have articulated the core logic of their ideas with sufficient consistency and explicitness that these theories unmistakably meet Rumelt's tests. Seminal authors of these theories provide clear and precise assertions regarding objectives, key concerns and subproblems, and ways in which managers should orchestrate skills, resources, and capabilities to achieve desired results. Both empirical and anecdotal support suggests that each of these theory perspectives can be effective and workable under certain contingent conditions.

However, the challenge of selecting an effective theoretical lens has been heightened in recent years. When the resource-based view of the firm was introduced, a series of debates took place in academic journals comparing this new perspective with organizational economic theories of the firm (e.g., Conner and Prahalad, 1996; Foss, 1996a, 1996b; Kogut and Zander, 1996). This debate resulted in a clear demarcation of the resource-based view as an alternative theory of the firm that relies on different premises and offers different prescriptions from those provided by transaction cost economics.

Proponents of resource-based views, hypercompetitive/high-velocity studies, and ecosystem/chaos theory research have argued that a new and unique way of thinking about organizations and strategy is an explicit requirement for implementing strategic initiatives based on their particular paradigm. Thus, a similar examination is needed to compare these conceptual lenses. For example, the synopsis of an all-academy panel discussion featuring Gary Hamel and Richard D'Aveni (1997) began: 'A new environment, hyper-competition, has challenged many industries. Frequent discontinuities and aggressive competition have *changed the nature of what constitutes strategy*.' In his book D'Aveni (1994: 7) argues that 'Hypercompetition requires a *fundamental shift* in the focus of strategy.' Hamel and Prahalad (1994: 25) contend 'This book is about ... how to build and apply *a new view* of strategy.' Wheatley and Kellner-Rogers (1996: 18) stipulate that 'It's time to *change the way we think* about organizations.' Since proponents of these three paradigms have argued that a unique conceptual base sustains the theories they espouse, it is essential to determine whether these research streams are restatements of a single core logic using different terms to describe the same phenomena and relationships, or whether these theories provide alternate, and potentially competing, explanations for effective strategic action.

This question is the focus of our paper. A timely answer is important since some recent work has argued for integrating elements of these perspectives (e.g., Brown and Eisenhardt, 1997; Teece, Pisano and Shuen, 1997) while others (e.g., Stacey, 1995; Lengnick-Hall and Wolff, 1998; McDaniel, 1997) have emphasized key differences. Integrative proposals are attractive and highlight common themes across resource-based, hypercompetition, and ecosystem/chaos theories. However, if the architects of these theories were correct when they introduced their concepts, such integrative efforts can inadvertently encourage managers and their firms to create internal contradictions in their beliefs and actions. Incompatible assumptions lead to ineffective strategies (Kim and Mauborgne, 1997). The purpose of this paper is to examine the core logic of these important conceptualizations to identify common threads and/or contradictory assertions. This comparison creates a more precise foundation for theory development and enables managers to be more consistent in their strategic choices and actions.

We selected these three streams of research for several reasons. First, we believe these streams are particularly important and influential in the strategic management field. Each seems to be producing a broad and useful flood of research projects and practical applications. Second, unlike many other new models and perspectives, each of these research streams began with an explicit claim that a 'new paradigm' was required and urged departure from available theories and applications. Third, these three core logics are increasingly prominent in strategic management texts, managerial training and publications, and organizational activities. Fourth, each of these streams incorporates an array of specific applications,

approaches, emphases, and tools so that no single set of steps or right answer is implied. Finally, each of these provides a comprehensive way to structure the unstructured problem of strategy that blends context, purposes, and actions.

We begin by summarizing the core logic articulated by prominent contributors to each research stream along with their stated rationale for proposed factors and relationships. This provides an explicit foundation for comparison. We then compare these principles to identify: (1) concepts upon which there is agreement across the three streams, (2) areas in which there is a contrast between the premises driving two of the three streams and the third paradigm, and (3) issues upon which there is fundamental disagreement across the three conceptualizations. The implications of this analysis for both research and practice are then discussed and issues for a research agenda are introduced.

THREE LOGICS FOR THREE APPROACHES TO STRATEGY

The core logics are described as separate sets of premises since the initiators of each of these perspectives argued that the conceptual foundation of their approach is unique. We labeled each core logic to reflect the central language and ideas presented by the thought leaders in each area. Resource-based views of the firm capture what we term capability logic. Hypercompetitive and high-velocity perspectives embody a guerrilla logic. Ecosystem and chaos theory-based views incorporate a complexity logic. A summary of the principles embodied in each core logic is provided in Table 1.

Capability logic

Capability logic reflects the general premise that one firm will outperform another if it has a superior ability to develop, use, and protect elemental, platform competencies and resources. Barney (1991, 1995), for example, views a firm as a blend of resources that enable certain capabilities, options, and accomplishments. Prahalad and Hamel (1990) depict core competencies as the foundation for creating the future. The emphasis is on internal capabilities that enable a firm to create and exploit external opportunities and develop sustained advantages when used with insight and adroitness.

Core premises of capability logic

Barney (1991, 1995), Conner (1991), Prahalad and Hamel (1990), Hamel and Prahalad (1993, 1994) and Wernerfelt (1984) articulated six principles underpinning resource-based strategies. Contributors to a capability view of strategy provide the following rationale for these principles.

One, competitiveness is a function of the strength, expert exploitation, and leveraging of a firm's internal abilities and resources. Strategies are designed to capitalize on a firm's proficiencies and thereby add value to products and services more efficiently and effectively than competitors. Assets that are valuable and distinct provide the foundation for creating a future in which the firm has an inherent, sustainable advantage.

Two, resource complementarity builds strategic strength. This means that nucleus capabilities overshadow any particular products or services in which they are used. Competency development drives the selection of businesses, markets, and organization structure. Complementary interdependence makes a firm's capabilities difficult to copy, relatively immobile, and more easily blended in new ways that multiply the competitive value of specialized resources.

Three, resource and capability development is selective and path-dependent. The need for focus requires an organization's structure and its culture to judiciously concentrate organizational attention on a few, primary success factors. Historical sequences and cumulative effects are key elements influencing the selection of asset targets.

Four, competencies and resources are evaluated in terms of their leverage potential. Capabilities are viewed as building blocks that can be layered in mutually reinforcing ways to enable a firm to create a future that capitalizes on its own unique capacity. A fundamental assumption is that different competencies lead to different desirable futures.

Five, key resources and competencies must be protected from imitation, adoption, or substitution by competitors to create a sustainable competitive position. Intellectual capital, firm-specific practices, relationships with customers, and a variety of other intangibles work together to protect core capabilities. Protection may derive from historical

Table 1. Summary of principles shaping three core logics in the strategy field

Capability logic	Guerrilla logic	Complexity logic
Superior resources and accomplishments lead to sustained competitive advantage	All competitive advantages are transitory	A healthy community ecosystem is a prerequisite for survival
Complementary interdependence promotes superior accomplishment	Disequilibrium should be initiated deliberately, frequently, and unpredictably to create a series of temporary advantages	Social systems are nonlinear and dynamic so that natural consequences determine sustained patterns of strategic outcomes
Selectivity fosters internal interdependence and facilitates adequate nurturing of core assets and competencies	Loosely coupled links enable the fast, aggressive, and intelligent actions that initiate disequilibrium	Influence is achieved by understanding and manipulating the underlying forces and attractors that create order in the ecosystem
Creative application of existing strengths to new situations initiates desirable future positions	Since the lifespan for any solution is short, benefits must be realized quickly	Transformation is relentless
Protection from imitation or appropriation is essential to sustain a desirable competitive position	Agility relies on the anticipation and augmentation of unexpected, emergent patterns	Self-organization triggers transformation
Evolutionary equilibrium is a feasible and desirable state		Values and culture determine the boundaries of social systems

path-dependent processes, causal ambiguity or other intricate, organizationally embedded characteristics.

Six, a punctuated equilibrium model tends to dominate a firm's competitive perspective. The prevailing situation with capability logic is continuous, evolutionary change only occasionally interrupted by a discontinuous blast that establishes a new equilibrium. A sustainable advantage requires an evolutionary equilibrium context. At times, organizations choose to fundamentally disrupt the status quo in order to capitalize on resources and capabilities they have developed. The intent, however, is not to create a fluid competitive arena, but to establish a new, durable context that facilitates the firm's efforts to secure a sustainable competitive advantage. At its best, 'strategic foresight' fundamentally changes the existing status quo and creates a new and different, but enduring, field of action. As Hamel and Prahalad (1994: 74) explain, for example, Apple wanted to create a strategic environment in which computer users never typed a C> again. Similarly, Oracle's stated intention is to become the essential choice for network computing solutions. For this to provide a compelling advantage, Oracle must establish a new and long-lasting industry paradigm of managing intricate links and technical sophistication through the server rather than on the desktop. Oracle intends to punctuate the current equilibrium and replace it with a different, but equally durable, alternative.

In summary, capability logic rests on the selection, development, enhancement, and exploitation of a deliberately chosen set of elemental, building-block competencies and assets that are isolated from imitation and appropriation by competitors. Structures and systems are designed to nurture, protect, and exploit these key capabilities and resources in ways that enable a firm to create a deliberate, path-dependent future to achieve a sustained competitive advantage.

Guerrilla logic

A second core logic shaping strategic management thinking is captured in research on hypercompetition and high-velocity firms. Guerrilla logic contends that one firm will outperform another if it is more adept at rapidly and repeatedly disrupting the current situation to create an unprecedented and unconventional basis for competing. Hypercompetition requires an unending stream of discontinuously redefined competi-

tive advantages (e.g., shifting from checkers to basketball to poker) and radical changes in market relationships (e.g., from competitors to allies to targets). Unlike resource-based views, high-velocity thinking is not built upon existing strengths, but instead repeatedly disrupts current conditions, including a firm's own established position, to reshape relationships and realities. This enables a firm to repeatedly form new, albeit temporary, competitive advantages based on different rules and different asset combinations than the existing pattern. As Collis (1994) argues, since the value of organizational capabilities is context-dependent, and since firms possess many ways to change the context, the strategy field will never be able to identify a truly sustainable competitive advantage. Guerrilla logic goes a step further to argue that if radical change can create a temporary advantage once, success can be based on a series of radical surprises. Hypercompetitive strategies intentionally undermine current advantages and drastically alter market contexts to give added punch to diverse routes to competitiveness. These strategies hopscotch conventional boundaries and perspectives to repeatedly redefine the competitive arena. The more avenues there are for competitive advantage taking, the more unpredictable a firm's strategic actions become.

Core premises of guerrilla logic

D'Aveni (1994), Collis (1994), Chakravarthy (1997), Eisenhardt (1989) and their colleagues identified four principles of hypercompetition and high-velocity strategies that we term a guerrilla logic. Guerrilla logic combines a series of tactical actions to form a strategy that keeps competitors off balance. Contributors to a guerrilla view of strategy provide the following rationale underlying this core logic.

One, disequilibrium and perpetual, discontinuous, radical change ensure that competitive advantages are temporary. An effective strategy destroys a firm's own current advantages along with those of competitors. The purpose is not to do familiar things more expertly or to leverage existing assets as a capability logic recommends. Instead, strategies repeatedly ignite unconventional revolutionary changes in the resource base and the product market to redefine what ought to be done.

Two, organization units and actions are loosely coupled. This both supports innovation and reduces constraints. Inventive activity that capitalizes on disequilibrium is highly correlated with individual entrepreneurial behaviors, broad knowledge, accurate anticipation and projection, and speedy response. Since guerrilla strategists are unconcerned with imitability, they do not rely primarily on path-dependent, causally ambiguous capabilities. The guerrilla strategist is more concerned with potential asset fungibility and the flexibility to rapidly assemble and disassemble capability bundles. Modular structures enable guerrilla strategists to leverage their assets in extremely flexible and responsive ways (Iansiti, 1995; Tapscott, 1996). Moreover, effective competitive maneuvering requires aggressive actions that are unconstrained by loyalty or compassion. Laws that protect 'fair play' are not the models for the future of competition (D'Aveni, 1995). New models are battle cries of 'annihilate, destroy and crush!'

Three, any advantage is fleeting. New questions and answers are offered, and then just as quickly replaced by solutions requiring entirely different combinations of assets, competencies, assumptions, and information. If technology or know-how can restructure an industry, redefine a product line, or revitalize a firm once, the discontinuous pattern can and should be repeated again and again. Market equilibrium is incompatible with a rapid series of disjoint shifts in strategy and context. Guerrilla logic counts on a disconnected series of unconventional moves to create fundamental instability. Investing in both cumulative development activities and unrelated alternatives adds surprise, flexibility, and unpredictability to a firm's strategic arsenal.

Four, continuous disruption is not a linear process; it is a disconnected one. Therefore, trend analysis is not a useful forecasting approach. Risk is seen as a factor to capitalize upon, rather than reduce or compensate for. Effective strategies rely upon surveillance, interpretation, initiative, opportunism, and shaping situations as they develop. Success requires improvisation, reconnaissance and the ability to act quickly and decisively.

In summary, guerrilla logic concentrates on destabilizing the current reality so that a series of temporary, and often incompatible, advantages lead to high performance. Guerrilla logic relies upon inventive, uncommon, and often unconven-

tional means. Strategies based on guerrilla logic deliberately create disequilibrium and foster radical, unprecedented and unpredictable changes in tactics and direction over and over again. Individual initiative is coupled with organizational mechanisms that repeatedly disintegrate and reintegrate activities over time and across projects.

Complexity logic

An emerging focus in strategic thinking is derived from research on business ecosystems and chaos theory. These perspectives argue that strategic success is a function of a firm's talent for thriving in dynamic nonlinear systems that rely on network feedback and emergent relationships. Effective strategies therefore require a blend of competition and cooperation. Paradoxical relationships, positive and negative feedback, and dynamic tension embedded between various actors and processes, as well as between a firm and its context, are fundamental elements of complexity logic. Strategy is reconceptualized to mean the design of processes that create attractors, facilitate desirable flows, foster synergy, integrate subsystems, capitalize on community, and simultaneously eliminate errors and reduce entropy. Traditional notions of competitive advantage do not carry much weight in complexity logic.

The business applications of complexity logic such as learning organizations (Senge, 1990b) and ecology (Boeker, 1991) are more familiar to many managers than the underlying conceptual roots of complexity theory. Recent work by Stacey (1995, 1996), Levy (1994), McDaniel (1997), and McDaniel and Walls (1998) is making the conceptual link more visible in the strategy field. It explains that complex systems are inherently unpredictable and fundamentally unknowable and it highlights the implications of nonlinear relationships and coexisting paradoxical forces. These researchers recognize that complexity logic means replacing formal, hierarchical structures with self-organization, magnifying rather than obscuring individual differences, and focusing on relationships, community, patterns, and relativism.

Core premises of complexity logic

The work of Senge (1990a, 1990b), Stacey (1995, 1996), Boeker (1991), Levy (1994), Moore (1993, 1996), Kauffman (1992), McDaniel (1997), McDaniel and Walls (1998), Waldrop (1992) and Wheatley (1994) articulate the rationale underpinning a third core logic which we term complexity logic.

One, individual, unit or organizational success requires a healthy ecosystem. Ecosystems are defined as nonequilibrium structures and processes, open to material and energy flows. Reflecting roots in systems concepts and chaos theory, the emphasis is on activities within and between nested subsystems. Task-based, fragmented thinking is discarded in favor of workflows and process-based loops of activity. Feedback and feed-forward loops, autocatalytic network structures, and similar circular influence patterns are key to understanding and maneuvering within complex organizational systems. A community orientation is essential since cause and effect are neither consistently replicated nor closely related in time and space. Consequently, effectiveness often requires looking for leverage far away from the symptoms of a problem.

Two, the importance of unpredictable, nonlinear, natural consequences is underscored. Unlike the prior two core logics, the idea that there are always clear, if convoluted, links between specific causes and specific effects is rejected. While some strategic consequences are the result of deliberate intent, most are emergent results (i.e., behavior that spontaneously and unexpectedly follows a different set of rules and patterns) or phase transformations (i.e., change in the fundamental properties of elements such as when certain metals shift from being conductors of electricity to insulators). Firms are seen as dynamic, nonlinear systems. Both equifinality (different paths leading to the same results) and emergence (similar conditions leading to different results) characterize complex, adaptive systems.

Three, influence is achieved by managing initial conditions and the underlying forces, or attractors, which organize the system. Since behavior patterns can emerge without being intended, influence comes from shaping the basic elements that impose regularity in a system. Attractors, such as values and vision, create constraints on a firm's activities. As a result, while many events are unique, they follow observable patterns. Firms must contend with the simultaneous influence of both positive feedback (leading to emergent results) and negative feedback (leading toward

regularity). Strategists that learn how to manipulate the concurrent and paradoxical influences that shape system behavior increase the probability of creating a healthy system.

Four, systemic change is a continuous, relentless process. Complex systems constantly coalesce, decay, change, and grow. System parts (e.g., people, units, firms, industries, processes) are constantly bumping into each other and causing chain reactions of one sort or another. There is an ongoing battle between growth, fueled by positive feedback, and regulation, fueled by negative feedback. A particular predictive equation will only be a valid description of events and relationships as long as a specific system structure is maintained. Just because a given tactic worked once, it cannot be counted on to work again (McDaniel and Walls, 1998). The constant interplay of positive and negative forces can't help but produce new patterns and outcomes in a never-ending cycle. Co-evolution results from interdependent webs or networks experiencing 'cascades of change.'

Five, self-organization triggers transformation. Self-organization is defined as incessant attempts for matter to organize itself into ever more complex structures, at the same time that it faces forces of dissolution as described by the second law of thermodynamics. Self-organizing properties are the result of catalysts that can serve as either 'matchmakers' or 'executioners.' Catalytic reactions produce a coherent, self-reinforcing chain that transforms simple systems into complex systems. Therefore, as an organization becomes more complex, emergent strategies will overtake intended strategies. Complexity also means that firms and units can generate intelligent, effective responses to the need for change without externally imposed plans or directions. Coupled with self-organization is the belief that complexity is infinite. Infinite complexity implies that: (1) everything is interconnected and (2) more information does not necessarily result in more accurate prediction.

Six, cultural integrity is a basis for establishing relevant boundaries. Therefore, segmented analysis is ineffective unless the segment is a fractal representing larger system patterns. Given the emphasis on community and the recognition of attractors, complexity-based strategies rely on shared values and common purposes, rather than procedures, to guide behavior. Feedback loops prevent outcomes from reaching either zero or infinity. Continuing iterations lead to evolving patterns of behavior over time and space. Whereas physical systems are shaped by unchanging natural laws, social systems are the result of interventions by individuals and groups. Cultural norms determine the limits on these interventions.

In summary, complexity logic concentrates on designing and maintaining integrated, but nonlinear, system-wide processes with the expectation that they will yield a variety of useful results. Complexity logic contrasts sharply with Newtonian views of organization and strategy. The complexity perspective is community-based, emergent, non-linear, unpredictable, culture-bound, and requires substantial investment in human capital and process management techniques.

COMPARING THE STRATEGIC LOGICS

Rumelt describes strategy as problem solving of the most unstructured sort (Rumelt, 1979: 196). He argues that strategy, as a concept, is strongly contextual in that the focus of strategy is on the relationship between a whole organization and its external environment. Each of these three core logics offers a different way to structure the ambiguous problem of strategy by creating a reasonable set of purposes, and defining an effective relationship between a firm and its context. The premises constructing these three core logics provide a useful starting place for assessing whether these research streams are restatements of a single conceptual framework, or whether they provide incompatible alternative lenses for strategic thinking. Comparing and contrasting these three logical frameworks is like examining the structure of an artichoke. At the heart are common threads that run through all three logics. The common elements will be discussed first. Stepping away from the overlapping concepts are characteristics that are common to pairs of core logics but which distinguish the conceptual pair from the third perspective. These paired similarities will be discussed next. Finally, at the outer rim are leaves that reflect the unique and distinct elements of each logical frame. The unique elements of each logic set contradict fundamental principles defining the other two logics.

These contradictory characteristics will receive the most attention.

Common principles

A comparison of the core logics reveals at least five common ideas that cut across all three sets of premises: creativity, exchange, anticipation, dynamic settings, and an emphasis on performance. First, all three logics emphasize creative, inventive action as a primary way to capitalize on current opportunities and to create a desirable future (e.g., Hamel and Prahalad, 1994; D'Aveni, 1994; Stacey, 1995). Similarly, none of the three logics argues that simply extrapolation from the past, or efforts to maintain the present, hold much promise for long-term strategic success.

Second, all three core logics emphasize the importance of developing effective exchange relationships with units and individuals beyond a firm's traditional boundaries (e.g., Porter, 1985; Bourgeois and Eisenhardt, 1988; Boeker, 1991). All three recognize that success requires permeable boundaries and a variety of at least temporary alliances or exchanges.

Third, all three logics focus on the future and try to envision the long-term consequences of actions and events (Hamel and Prahalad, 1989; D'Aveni, 1994; Stacey, 1995). In this way capability logic, guerrilla logic, and complexity logic are all anticipatory and encourage at least improvisational planning.

Fourth, all three acknowledge that strategic effectiveness is dependent on context. All three logics presume that both strategy and context are dynamic (e.g., Barney, 1991; Collis, 1994; Levy, 1994). The rate, durability, direction, and predictability of change varies widely from one logic to another, but the underlying fact of change is common across all three core logics.

Fifth, all three logics emphasize the performance numerator rather than the cost denominator (e.g., Barney, 1995; Eisenhardt and Tabrizi, 1995; Stacey, 1995). While the sustainability and realistic expectations of control over competitive performance varies across the three perspectives, all three are focused on improving a firm's position in the marketplace, its effectiveness at acquiring and using resources, and its influence over its own destiny.

These common factors offer a comforting sense of consistency across the three paradigms. Since all three assume that strategies should be creative, future-oriented, visionary, contextually dependent, and performance-directed, it is easy to anticipate benefits that might come from blending different prescriptions for success. However, as we will argue at the end of this section, we propose that the importance of these commonalties is outweighed by the strength of the contradictions across the three logics.

Shared characteristics

Some important premises are shared by two, but not all three of the logical frameworks. These shared characteristics also appear to invite blending theory development and strategy recommendations across logic sets.

Shared features between capability and guerrilla logics

Capability logic and guerrilla logic have at least three principles in common. One, both capability logic and guerrilla logic argue for the importance of following a deliberate, controllable strategic intent (e.g., Hamel and Prahalad, 1994; D'Aveni, 1994). Both logics agree that effective strategy is the result of envisioning a specific desirable future and then taking deliberate steps to ensure that the intended future becomes reality. While the pace and sustainability of desirable outcomes are quite different, the belief that strategists can and should define and actively shape the future dominates these two logics. Complexity logic, in contrast, implies that effective organizations often 'go with the flow,' keeping solutions local and abdicating hierarchical control, rather than relying on a formal strategic intent (Wheatley and Kellner-Rogers, 1996).

Two, both capability logic and guerrilla logic emphasize competitiveness (e.g., Hamel, 1998; Eisenhardt, 1989). The primary aim of these strategy frames is to create conditions that enable a firm to perform better than its rivals and thereby accrue extraordinary profits. While the degree of aggressiveness and the sustainability of a superior competitive position vary across these two logics, both assert that the purpose of strategy making is to be faster, better, cheaper, or more special than the competition. Complexity logic in contrast, champions natural consequences and balance over competitive advantage (Levy, 1994).

Three, both capability logic and guerrilla logic rely on hierarchical initiative and careful selection of specific strategic directions, targets, and investments (Barney, 1995; D'Aveni, 1994). Orchestration and resource leveraging require the attention and involvement of top management. Top management decides whether to preserve the fortress or to unleash an aggressive series of contradictory thrusts and counterthrusts. Complexity logic, in contrast, relies on spontaneous self-organization and intentionally abandons hierarchical systems (McDaniel, 1997). Decentralization makes it difficult to focus on core competencies (Prahalad and Hamel, 1990).

Shared features between capability and complexity logics

Capability logic and complexity logic share two common premises. One, both capability logic and complexity logic argue for path-dependent relationships, or lock-in (e.g., Dierickx and Cool, 1989; Waldrop, 1992). In economics this is known as increasing returns, or 'them that has, gets' (Arthur, 1990). Both of these core logics recognize important benefits of dominant position and incumbency. The intent of guerrilla logic, in contrast, is to deliberately disrupt established processes, positions, and regulators (D'Aveni, 1994).

Two, both capability and complexity logic recognize the value of long-term, self-sustaining partnerships and alliances (e.g., Barney, 1991; Moore, 1996). Reciprocity, continuity, and commitment are seen as important assets from both perspectives. Both capability logic and complexity logic create opportunities out of interdependencies. Guerrilla logic, on the other hand, emphasizes the liabilities of intimate and intricate connections (Chakravarthy, 1997).

Shared features between guerrilla and complexity logics

Guerrilla logic and complexity logic also demonstrate an important commonality. Both assume that outcomes are often unpredictable (e.g., D'Aveni, 1995; Levy, 1994). In guerrilla logic, unpredictability follows from the speed, surprise moves, and efforts toward disequilibrium initiated by multiple market participants. Under complexity logic, complex network interactions in dynamic, nonlinear systems produce inherently unknowable results. Both these logics contend that it is impossible to predict many important strategic events. This contrasts with capability logic which, due to its equilibrium orientation and its focus on deliberately creating an intended future, works to increase predictability for both paths and outcomes (e.g., Hamel, 1998).

CRUCIAL CONTRADICTIONS

When the essential conceptual premises underlying the three logics are compared, a number of fundamental contradictions emerge. Each core logic embodies premises that are conceptually unique and create irreconcilable differences across the three core logics. Nine issues are particularly important to consider since they relate directly to Rumelt's (1979) four tests.

Contextual contradictions

We consider the strategic context or environment to be what Pondy and Mitroff (1979: 17) define as an *enacted* phenomenon. That is, strategists often play a major role in producing the market environment they face. The marketplace is neither a purely detached, objective external setting that determines organizational options, nor is it purely a reflection of the beholder's perspective. As Weick (1995) explains, strategists act, and in doing so they create the constraints and opportunities they encounter.

Contradiction #1: Market conditions

Market conditions describe the prevailing assumptions about the predictability and magnitude of change in strategy context. Rumelt (1979) suggests that assumptions about market conditions are an essential part of a strategy frame. Capability logic enacts an economic setting that is equilibrium-oriented (Levy, 1994). This does not mean a static marketplace, but it does mean that changes are intentionally engineered and often designed to reinforce incumbents who have attained desirable competitive positions (e.g., Hamel and Prahalad, 1994). Planned and predictable market conditions reflect linear, dynamic relationships.

Guerrilla logic enacts a marketplace that is a

consequence of clashing and continuously shifting choices made by participating firms. The more dramatically and relentlessly a firm shapes and reshapes the rules for competing, the better it becomes at creating consequences that provide it with a temporary advantage (D'Aveni, 1995; Collis, 1994). Reflecting the disjoint, dynamic relationships under guerrilla logic, market conditions are unpatterned and unpredictable.

Complexity logic enacts a marketplace that results from cumulative and collective chains of activity and reactions. While small initial differences often result in significant marketplace variety, no individual or firm is expected to be able to determine or fully manage market conditions (Stacey, 1995). Given the dynamic, nonlinear, deterministic relationships of complex systems, market conditions reflect recurrent patterns in unpredictable sequences (Levy, 1994).

Contradictory assumptions about strategy making

Strategy making is the bridge between a strategist's beliefs about the way things work and the specific accomplishments and outcomes he or she intends to realize, so strategy making considers all of Rumelt's (1979) criteria. Strategic purpose includes assumptions about goals, organizational requirements, and workability. Competitive advantage is a foundation for setting strategic objectives, and provides a frame for strategic activities. Imitability deals directly with objectives and competence. The strategic time horizon is part of developing a strategy frame and influences workability. Source of influence responds most directly to the competence test.

Contradiction #2: Strategic purpose

Strategic purpose refers to the means by which a firm achieves success and the indicators used to evaluate a firm's strategy. A capability logic contends that success is achieved when a firm is able to leverage its resources and competencies to achieve a sustainable competitive advantage and, thereby, establish an incontestable position in the marketplace (e.g., Barney, 1991; Hamel and Prahalad, 1994).

For guerrilla logic, success means keeping competitors off balance and surprised by repeatedly disrupting current conditions and shifting the rules of the game (e.g., D'Aveni, 1994; Brown and Eisenhardt, 1997). Success is a series of incongruous advantages.

Resilience resulting from a nurturing web of relationships is the primary strategic purpose of complexity logic (e.g., Wheatley, 1994; Stacey, 1996). Success is a network of reciprocal, mutually beneficial relationships and does not require having an edge over other firms or extracting disproportionate rents.

Contradiction #3: Competitive advantage

Competitive advantage reflects the underlying rationale for attempting to achieve an edge over rivals. A capability logic asserts that competitive advantage is the root of value creation, is sustainable, and can be achieved by exceptional scarce, valuable, inimitable, and nonsubstitutable assets (e.g., Barney, 1991). Capability logic argues for building multiple sources of competitive advantage in mutually desirable layers. Sustaining the benefits from a particular set of internally based competitive advantages is a primary goal for capability-based strategies since it is the means for achieving sustained above-average profitability.

Guerrilla logic maintains that any particular competitive advantage, whether internally or externally derived, is a temporary stepping stone that will be abandoned to capitalize on a new opportunity or new internal capacity (D'Aveni, 1994). Neither a particular set of internal advantages, regardless of their value and uniqueness, nor a particular market position, regardless of its current attractiveness, is sufficient to sustain superior performance. In many ways guerrilla strategists view competitive advantage as a temporal assessment of recent strategic choices, which are generally contrary to previous strategic choices (eg., Hamel and Prahalad, 1994). Competitive advantage reflects time and space with guerrilla logic, rather than a durable position as in capability logic. A sustained competitive advantage is considered logically impossible (Collis, 1994).

Complexity logic sees competitive advantage as defining a firm's potential relative to the overall processes and resources of the network (e.g., Levy, 1994; Senge, 1990b). As with other paradoxical influences, competitive advantage must be balanced against collaboration. Therefore a

sustained competitive advantage is a misplaced objective in a dynamic, nonlinear system. From a complexity perspective, a firm's competitive advantage is both its contributions to the systemic enterprise and a potential attractor shaping large systemic patterns of behavior.

Contradiction #4: Imitability

Imitability outlines assumed benefits and realistic expectations regarding insulating and protecting proprietary assets and know-how. Preventing the imitation or appropriation of rare, valuable, and useful assets is a cornerstone of creating a sustained competitive advantage under capability logic (Barney, 1991, 1995). Ambiguous social relationships, path dependency, and similar barriers are used to reduce mobility and restrict imitation (Reed and DeFillippi, 1990). It is considered both feasible and highly desirable to protect key competitive assets and abilities under capability logic.

Guerrilla logic sees protection of unique assets and abilities as a fleeting opportunity at best (Collis, 1994). Protection is typically viewed as having limited usefulness since resources and abilities that are important today will be deliberately replaced by a different set of capabilities tomorrow (D'Aveni, 1995). Imitation and substitution are seen as inevitable under guerrilla logic.

Complexity logic argues that efforts to protect proprietary resources and knowledge are counterproductive and work to the detriment of system-wide accomplishments (Stacey, 1995; Arthur, 1990). Learning organizations, for example, require shared mental models, deep knowledge of important technologies, and a language for sharing tacit knowledge (Senge, 1990b).

Contradiction #5: Time horizon

Time horizon is a temporal yardstick for evaluating success and failure that reflects the dynamics of a firm and its context. For the most part, capability logic uses a calendar that reflects market and product life cycles (Hamel and Prahalad, 1994). A long-term planning horizon is both desirable and feasible.

Guerrilla logic relies on a stopwatch orientation (Eisenhardt and Tabrizi, 1995). Product and market life cycles are deliberately precluded from running their normal evolutionary course. Strategic control must supplement strategic planning, and short-term planning cycles are the norm.

Complexity logic concentrates on the cumulative effects of multiple life cycles across a network of products and industries and technologies (Arthur, 1990; Gleick, 1987). Complexity logic thinks in terms of strategic eras. While cycles and patterns are repeated at multiple levels of analysis (e.g., individual group dynamics may be repeated in the behavior of strategic groups), the time for a cycle to run its course is generally unknown (Levy, 1994).

Contradiction #6: Source of influence

Source of influence describes the basis for controlling one's destiny. With capability logic, influence is derived from controlling superior resources, or superior resource combinations, that result in superior capabilities. Superior capabilities result in a sustainable competitive advantage (Grant, 1991; Reed and DeFillippi, 1990). A sustainable competitive advantage confers significant power to shape internal and external conditions and consequences.

In guerrilla logic, influence is based on defining and redefining the nature of the game and exchange relationships to achieve a series of short-term advantages (D'Aveni, 1995; Eisenhardt, 1989). Positions, rules, and opportunities that enable a firm to manage transactions and market flows are key to influence under guerrilla logic.

Influence under complexity logic relies on shaping the system architecture (Levy, 1994). This is done by triggering relationships and interactions that serve as catalysts to increase or reduce system regularity (Waldrop, 1992). Self-organization demonstrates the application of influence. Power comes from understanding patterns, and then intervening to change fundamental systemic attractors and processes.

Contradictory administrative arrangements

Administrative arrangements focus on the mechanisms for implementing a core logic. The development and maintenance of crucial relationships is a key aspect of the strategy frame (Rumelt, 1979). Stakeholder issues reflect goal consistency

requirements. The boundary-spanning role is a key organizational skill and resource related to competence requirements.

Contradiction #7: Nature of relationships

Relationships are ties created inside a firm and beyond a firm's boundaries. Capability logic argues that relationships are built around power derived from the control, protection and appropriability of resources and assets (e.g., Barney, 1991; Wernerfelt, 1984). The value and influence associated with a resource are situation-specific (Pfeffer, 1992). As French and Raven (1960) recognized, if know-how is crucial, of limited availability, and if the expert is willing to share it, such expertise can be a potent source of individual power. Individuals possess many resources such as thought faculties, education, physical ability, attitude, personality, and character. To the extent that individuals combine their resources to form value-creating capabilities, they will accrue power in an organizational setting and the value that is created through collaboration is typically reflected in their compensation (Grant, 1991). In similar fashion, a firm combines individual resources to form value-creating capabilities, accrues power in an interorganizational setting, and appropriates the value created in the form of profits. Effective boundary management creates a home court advantage for industry incumbents. Key relationships are often built around specific ways to leverage resources. Porter (1980) explained how the control of raw materials, distribution channels, component parts, or any other critical element of the value chain can enhance a firm's influence in the industry.

Guerrilla logic, in contrast, enters and exits relationships based on transactional exchanges, immediate benefits, and transitory interests (e.g., D'Aveni, 1994; Kim and Mauborgne, 1997). Relationships under guerrilla logic are disjointed, pragmatic, and dynamic. A firm's ability to engage and to disengage from connections with other actors is a key factor influencing access to information, quickness, agility, and the aggressiveness with which a firm is able to pursue disequilibrium tactics. Sticky relationships, those based on enduring, multidimensional ties, are liabilities for firms adopting guerrilla logic (Eisenhardt, 1989). Cooperation tends to escalate competition by raising the ante, thus leading to more intense rivalry. As D'Aveni (1994: 337) explains, alliances should not be confused with long-term commitments. Alliances are formed when they are mutually beneficial and dissolved at will. The dissolution typically creates confusion and disruption and leaves one of the partners disadvantaged.

Complexity logic rests on building long-term, collaborative relationships out of interdependence (Wheatley, 1994). Influence comes from developing relationships noted for reciprocity, stable patterns, and common interests. Relationships under complexity logic are deterministic, but nonlinear, and dynamic (e.g., Levy, 1994; Stacey, 1995). McDaniel (1997) argues that under complexity logic it is the connections between things that count, not the things themselves. Resources, actors, units, and events derive their meaning from the relationships they have with other entities rather than from the fundamental local properties they exhibit. Key relationships are anchored in alliances formed by nested subsystems and circular processes. This perspective blurs traditional boundaries inside a firm and looks beyond an organization to define a variety of interacting communities of interest. Intrafirm alliances rely on long-term, paradoxical relationships across traditionally competing interests.

Contradiction #8: Stakeholder focus

Stakeholder focus indicates the primary target audience for organizational activities. Stakeholder focus deals most directly with organizational goals and objectives. Capability logic concentrates on creating value for investors by enhancing the firm's stock of assets and capabilities (Barney, 1991). Capability logic attempts to get a larger piece of the pie for investors than they could obtain from other contenders.

Guerrilla logic concentrates on creating value for customers by meeting specific needs or solving particular market dilemmas (D'Aveni, 1994). Strategies based on guerrilla logic emphasize extrinsic rewards, product attributes, and relative positions.

The dominant stakeholder for complexity logic is the business ecosystem community. The primary emphasis is to ensure a healthy and well-nourished ecosystem (Boeker, 1991; Moore, 1996). Complexity logic tries to

increase the size of the pie for all units within the ecosystem.

Contradiction #9: Boundary roles

Boundary roles reflect the purpose and orientation of individual positions on the borders between units and between a firm and its environment. Each of the three logics adopts a different perspective regarding a firm's boundary spanners. Since capability logic is based on protecting a firm's assets and competencies from imitation and preventing resource mobility, boundary spanners operate as police, shielding resources and guarding the firm's borders from inappropriate activity (Schuler and Jackson, 1987). Those on a firm's external boundaries are expected to borrow ideas and capabilities from those with whom the firm develops relationships without revealing the source of the firm's own core competencies (Hamel, 1991; Hamel and Prahalad, 1993).

With guerrilla logic, boundary spanners act as scouts to identify potential opportunities for disruption and toll collectors who are responsible for managing transactions between the firm and external parties. D'Aveni's (1994, 1995) vision for disruption activities and use of signaling to seize the initiative highlight this responsibility.

Complexity logic sees boundary spanners as ambassadors and bridge builders (Senge, 1990b). Under complexity logic, every individual in the firm has important boundary-spanning responsibilities both inside a firm and beyond its borders (Wheatley, 1994).

Evaluation of the three logics using Rumelt's lens

Assessing context

From the perspective of Rumelt's criteria, all three core logics have equally clear and well-developed context expectations. The enacted environment amenable to each core logic suggests specific requirements and enabling conditions that support the articulated strategy purpose and identify crucial subproblems that must be overcome. Since requirements and conditions are fundamentally incompatible among the three core logics, strategists must deliberately ensure consistency between the enacted environment and other elements of their core logic.

Assessing assumptions about strategy making

In terms of strategy making, all three logics describe goals that are ambitious, and very complicated to measure. Measurement difficulties are the result of time dependencies and the challenge of selecting a useful perspective for analysis. The connection between observations and observers is most intricately meshed in complexity logic, but judgments about discontinuity (guerrilla logic) and relative value of resources (capability logic), for example, are often relational as well.

Competence and workability are much more fully developed for capability logic than for the other two. Concrete cause-and-effect relationships and a variety of specific prescriptions for analysis and action have been proposed to apply capability logic. The causal links between action and performance are at an earlier stage of development for guerrilla logic. Consequently, the links are less precisely defined and are directed more toward identifying packages of options (e.g., surprise, speed, simultaneous and sequential thrusts) and desirable outcomes (e.g., a series of new advantages that disrupt the status quo) that are conceptually clear but not yet operationalized. The very nature of complexity logic precludes a traditional action–result orientation. Since organizations are seen as non-linear, dynamic systems, competencies center on system forces such as developing attractors and sense-making requirements. Likewise, outcomes are relational and systemic such as business ecosystem vitality. It becomes clear that if we are to advance our understanding and use of complexity logic in the management arena, we need to develop valid and measurable constructs for phenomena such as self-organization, phase transformations, and organizational resilience in social science arenas. It is interesting to note, however, that despite the more advanced conceptualizations available for capability logic, few of the hypothesized relationships between action and outcome have been empirically tested for any of these core logics.

Assessing administrative arrangements

What may at first glance appear to be different levels of development in the three logics in terms of goal consistency and framing also reflects fundamental differences in the nature of the respective administrative solutions and their conse-

quences. Administrative solutions under capability logic are deliberate, planful responses that can be engineered to resolve anticipated contingencies. Administrative solutions under guerrilla logic are, by necessity, more improvisational since the issues they must resolve are the result of inventive moves by the focal firm and surpriseful actions by others. Administrative solutions under complexity logic are centered on activities such as sensemaking, creating attractors, and leveraging processes in response to emerging events. These are very fluid, idiosyncratic, and developmental activities.

Fortunately, a varied base of research is available to all three logics in terms of framing key relationships. Capability logic can draw from research on strategic alliances and joint ventures; guerrilla logic can draw from the exchange literature, and complexity logic can draw from studies of population ecology and business ecosystems. Similarly the development of goal hierarchies captured by stakeholder issues is fairly extensive. The boundary-spanning activities are perhaps the least concretely articulated, but this vagueness extends across all three logics.

As explained at the beginning of this section, these three core logics provide alternative ways to structure the very unstructured problem of strategy making. In Table 2 we use Rumelt's framework to summarize important similarities and differences among the three approaches. The similarities across these core logics are inviting. However, as Table 2 illustrates, if a firm's strategy at a single point in time is derived from more than one of these core logics simultaneously, it will invariably fail Rumelt's goal consistency test.

IMPLICATIONS OF THESE TEN CONTRADICTIONS

In response to the general question prompting this analysis, it appears that the researchers who argued that resource-based views, hypercompetitive/high-velocity paradigms, and ecosystem/chaos perspectives of the firm each required a unique and uncompromising model of firms and strategy are correct. When the originators of these research streams contended that a paradigm shift was required, they were establishing a necessary ground rule for effective application of their ideas. Efforts to combine and blend these conceptual perspectives within a single strategy create serious problems for managers who are concerned about achieving consistency of purpose (Lengnick-Hall and Wolff, 1998). Similarly, blending these perspectives into a single comprehensive theoretical model creates problems for researchers who are concerned about construct validity and establishing effective boundaries for theory development, application, and generalizability (Whetten, 1989).

Key elements in the foundation of each of the three core logics present direct contradictions for each of the other two perspectives. For example, the unrestrained competition driving guerrilla logic is incompatible with either the effort to preserve incumbent advantages driving capability logic, or the community interdependencies of complexity logic. Resource protection, which dominates capability logic, requires boundaries. Such borders place artificial limits on the flexibility required for guerrilla logic and discount the flow interdependencies of complexity logic. The enduring, empowered, relationship-building focus of complexity logic contrasts with the political relationships that dominate capability logic and the transactional relationships found in guerrilla logic. Imitation is seen as a factor to guard against in capability logic. Imitation is seen as negative but inevitable under guerrilla logic. Imitation is viewed as a foundation for building shared values and common interests with complexity logic.

The enacted environments that are appropriate for each core logic are likewise quite incompatible. Capability logic enacts a setting that is predictable and focused on evolutionary equilibrium, only occasionally punctuated by revolutionary change (Gersick, 1991). Thus, capability logic is effective in a context that is dynamic and linear. In contrast, the environments of guerrilla logic and complexity logic are more persistently and dramatically unpredictable. However, complexity logic depends both on patterns supporting regularity as well as those leading to emergent shifts, while guerrilla logic concentrates exclusively on disequilibrium and frequent revolutionary bursts. Guerrilla logic enacts a context that is dynamic and discontinuous. Complexity logic enacts a context that is dynamic and nonlinear.

A firm's enacted environment is expected to change over time triggered both by shifts in

Table 2. Illustrative answers to Rumelt's four criteria for assessing strategy theory from three core logics

	Goal consistency *What are the primary strategic aims of each core logic and are these internally consistent?*
Capability logic	• Nurture, protect and exploit key capabilities and resources in ways that enable the creation of a deliberate, path-dependent future • Emphasize performance over costs • Achieve a sustained competitive advantage • Prevent imitation • Create exceptional value from leveraging resources and competencies • Achieve strategic fit
Guerrilla logic	• Deliberately create disequilibrium through inventive and unconventional means to encourage radical, unprecedented, unpredictable, and relentless change • Disintegrate and reintegrate activities over time and across projects • Emphasize performance over costs • Achieve a series of incongruous competitive advantages • Prevent anticipation of strategic moves • Satisfy specific market needs quickly and unconventionally and then create a new arena for action
Complexity logic	• Enable self-organization, self-discipline, individual initiative and emergent actions • Emphasize performance over costs • Thrive amid opposing forces of competition and collaboration, global and local interests, positive and negative feedback • Promote imitation to achieve shared understanding • Ensure a healthy and vital community of interests • Augment variation and individual differences • Achieve requisite variety
	Frame *What are the crucial subproblems and critical issues to be addressed within the domain of each core logic?*
Capability logic	• How to develop effective exchange relationship beyond the firm's boundaries • How to deal effectively with change • How to achieve a deliberately controlled strategic intent • How to achieve competitive advantage • How to nurture long-term, self-sustaining partnerships and alliances • How to increase predictability • How to capitalize on dynamic linear relationships • How to develop plans that capitalize on life cycles
Guerrilla logic	• How to develop effective exchange relationship beyond the firm's boundaries • How to deal effectively with change • How to achieve a deliberately controlled strategic intent • How to achieve competitive advantage • How to avoid intimate and intricate connections • How to respond to unpredictable events • How to capitalize on dynamic, discontinuous relationships • How to foster real-time actions and interventions

Continued

Table 2. Continued

Complexity logic	• How to develop effective exchange relationship beyond the firm's boundaries • How to deal effectively with change • How to develop local solutions • How to capitalize on natural consequences • How to nurture long-term, self-sustaining partnerships and alliances • How to respond to unpredictable events • How to capitalize on dynamic, nonlinear relationships
	Competence *What are the feasible solutions and solvable subproblems suggested by the core logic?*
Capability logic	• Foster creative, inventive, intrapreneurial actions • Rely on hierarchical decision and control mechanisms to allocate resources and manage change • Highlight path-dependent processes • Increase information and invest in analytic skills to enhance predictability • Control superior resources to develop superior capabilities • Decrease imitability by investing in resources that are path-dependent and causally ambiguous
Guerrilla logic	• Foster creative, inventive, intrapreneurial actions • Rely on hierarchical decision and control mechanisms to allocate resources and manage change • Deliberately disrupt processes, positions, and expectations • Increase speed and surprise to enhance disruption • Develop agility and advantages that have an immediate pay-off • Disregard imitability • Avoid cooperation since it leads to perpetual disadvantage
Complexity logic	• Foster creative, inventive, intrapreneurial actions • Rely on self-organization to allocate resources and manage change • Increase sense-making skills to recognize patterns • Trigger catalytic reactions that influence fundamental systemic processes • Promote imitability to develop shared mental models and community • Increase variety through invention, imitation, experimentation, and natural mutations • Create cellular structures and modular activities
	Workability *How are actions linked with results, and are there examples of success?*
Capability logic	• Is the firm effectively leveraging its specialized resources? • Has the firm established an incontestable position? • Are market conditions planned, predictable and equilibrium-oriented? • Are resources rare, valuable, inimitable, and usable? • Is strategic intent leading to a sustained competitive advantage? Examples of success include: Cargill, Oracle, Nucor, Boeing, Procter & Gamble, Disney, Chaparral Steel
Guerrilla logic	• Are competitors continuously surprised and off-balance? • Are market conditions unpredictable because the rules are constantly changing and crucial resources relentlessly shift? • Has the firm developed a vision for disruption? • Has the firm developed tactics for disruption? • Has the firm developed capabilities for disruption?

Continued

Table 2. Continued

	Examples of success include: Komatsu, Columbia HCA, Intel, US Army Special Forces Units
Complexity logic	• Is the firm resilient? • Has the firm established global integrity? • Do market conditions reflect recurrent patterns in unpredictable sequences? • Do leaders facilitate self-organization and self-discipline? • Are individual differences valued and used? Examples of success include: Gore & Associates Inc., Southwest Airlines, Cicso Systems, Marshall Industries, disaster relief organizations, Technical and Computer Graphics (TCG), Toyota

external conditions and by deliberate organizational choices. Generally, a significant context change, which may arise either from a change in strategic initiatives, a change in marketplace conditions, or both, can trigger a mismatch between a firm's current strategic thrust and its external environment. Such a mismatch is often reflected by declining performance (Miles and Snow, 1984) and signals the need for a firm to reconsider its competitive assumptions. Significant change may require a firm to undergo a 'core-logic shift.' Thus, *as time passes* a firm may need to devise strategies that reflect a different core logic at different points in time if the strategy that is implemented is to reflect the firm's contextual reality. Hence, a recognition of context change and the subsequent effects of this change on a firm's performance sends a mandate to managers to alter the strategic logic of the firm.

At minimum, there are two contingencies for practicing managers if they intend to maintain a match between core logic and strategic context across time. First, they must correctly recognize the significance of a context change. Second, managers must correctly select a core logic that matches enacted environmental conditions. Each of these presents a substantial challenge.

The first challenge is outlined in recent publications by Levy (1994), Stacey (1995), Allen (1994), Teece *et al.* (1997), Brown and Eisenhardt (1998), Waldrop (1992), Gleick (1987) and others who highlight the underlying structural dynamics of systems and strategies. Not all systems are chaotic, and those that are may not be chaotic all the time. Environmental jolts have a variety of different effects. Some disrupt the current equilibrium and establish a new balance. One example of an 'equilibrium-to-new-equilibrium' shift is Dell's implementation of a mail order strategy in the personal computer industry. Dell's maneuver shifted the influence of manufacturing cost structures and service channels and established a new balance in the industry (Levy, 1994). At other times, a series of jolts creates the groundwork for persistent disruption leading firms and industries to become hypercompetitive (e.g., Teece *et al.*, 1997). The moves and countermoves of Kodak, Polaroid, and Sony reshaping the imaging industry from a chemical base, to a service base, to a digital base illustrate this phenomenon. In still other situations, established equilibrium can also be so dramatically destabilized that industries and firms are plunged into dynamic, nonlinear, self-organizing systems as diverse as organizational responses to disaster, the World Wide Web, and a DuPont chemical plant (Wheatley and Kellner-Rogers, 1996). Therefore, a crucial issue for both managers and researchers is how to identify the signals that indicate a shift in core logic is necessary to maintain compatibility between context and strategy. A corollary issue is the extent to which managers can initiate advantageous context changes, or prevent disruptive jolts from occurring.

The second important issue is determining which core logic is appropriate. The nine contradictions discussed previously provide a useful starting point both for monitoring the need to reassess a core logic choice and for selecting a new logic if necessary. If a firm's assessment of market conditions, strategic purpose, competitive advantage, imitability, time, influence, relationships, stakeholders, and boundaries undergo fun-

damental shifts, it may be time to reexamine the core logic choice.

If a firm chooses, or is forced to change from one core logic to another as circumstances change, it must forcefully jettison many elements embedded in its original core logic choice to avoid fundamental inconsistencies. Consequently a firm must unlearn the crucial relationships and assumptions that comprise its current core logic. Unlearning takes time, significant organizational resources and, when coincident with learning new patterns and relationships, can result in incomplete unlearning (Hedberg, 1981). 'Incomplete unlearning cycles are problematic in that they frequently add to dysfunctional organizational inertia' (Hedberg, 1981: 19).[1] van Witteloostuijn (1998) argued that managers might have a disincentive to change the strategic direction of firms exhibiting declining performance because of organizational inertia. Even in the face of overwhelming evidence for change (e.g., declining performance), managers may fall into competence traps (Levitt and March, 1988). Tushman and Romanelli summarize the thinking:

> Convergent social and structural processes impede a firm's ability to 1) reassess environmental opportunities and constraints, and thus to initiate strategic reorientation and 2) even given such a reassessment to substantially disrupt the networks of interdependent resource relationships and value commitments toward implementation of a new strategic orientation. (Tushman and Romanelli, 1985: 177)

Firms attempting a core logic shift face impediments that arise from four sources: structural inertia (Hannan and Freeman, 1984); competitive inertia (Miller and Chen, 1994); organizational momentum (Kelly and Amburgey, 1991); and dominant general management logic (Prahalad and Bettis, 1986).

As organizations grow, structural linkages are forged internally and externally to facilitate communication, action, and decision making in a given context. These webs of interdependence within and across organizational boundaries become 'institutionalized patterns of culture, norms and ideologies' that contribute to inertia (Tushman and Romanelli, 1985: 177). When environmental change is so great that a core logic shift is prescribed, these structural impediments to change must be overcome. Moving from an enacted environment conducive to capability logic to one suited to complexity logic, for example, requires a firm to undo internal relationships and boundary-spanning activities that served to protect and isolate core competencies and capabilities in favor of internal and interorganizational relationships directed at sharing and cooperation. Similarly, structures and processes that enable autonomous, surpriseful actions leading to success with guerrilla logic must be discarded and replaced by structures that concentrate, conserve, and leverage core resources if a firm shifts to a strategy based on capability logic.

In addition to forging new structural relationships that are consistent with a different context, firms must also deal with competitive inertia. Miller and Chen (1994: 1) defined competitive inertia as 'the level of activity that a firm exhibits when altering its competitive stance in areas such as pricing, advertising, new product or service introductions, and market scope.' The actions that a firm would be required to take *vis-à-vis* a hypercompetitive context are very different from those prescribed for an environment favorable to a capability logic. For example, capability logic focuses on preserving competitive advantage. Product-pricing decisions generally are made to maximize rent extraction. Advertising and promotion are typically directed toward preserving or enhancing brand recognition. New product introductions are often timed to enhance rent generation and not cannibalize existing product line items. Under capability logic a firm's strategic orientation (Tushman and Romanelli, 1985) is directed at preserving an established competitive position. However, a wholly different package of competitive actions is needed for a firm that is operating within a hypercompetitive context. Pricing decisions need to be framed by expected competitive response; promotion, advertising, and distribution undertaken to counter a competitor's position or to destabilize market conditions. New product introductions are often expected to cannibalize existing product lines, thereby augmenting the unexpected nature of such

[1]Reference to the concept 'organizational inertia' is pervasive in the literature of organization theory and strategic management. We use the term consistent with Hannan and Freeman (1984), Kelly and Amburgey (1991), and van Witteloostuijn (1998). Organizational inertia is the condition when the within-organization rate of change occurs more slowly than the rate of change taking place in the external environment.

a move. The strategic orientation of firms using guerrilla logic requires actions to stay 'one step ahead' or potentially to 'leapfrog' competitors.

Competitive inertia may facilitate effective action by firms when the strategic context is fairly stable (Miller and Friesen, 1984) because competitive inertia enables fine-tuning and continuous improvement based on past successes. However, inertia may severely constrain firms' competitive actions under conditions of significant environmental context change when a major shift in strategic direction is needed (Miller and Chen, 1994). Along with the need to overcome competitive inertia in the face of environment upheaval, organizations must counteract organizational momentum (Kelly and Amburgey, 1991). Managers may understand the need to change and, consequently, undertake actions that reorient their firm to better fit conditions in the external environment. However, organization members are likely to act in ways consistent with previous experience (Kelly and Amburgey, 1991). To illustrate, consider guerrilla logic. From previous discussion, hypercompetitive environments require organizations to be adaptable, malleable, and embrace change as part of the organizational repertoire. Repetition leads to familiarity and patterns of autonomous, adaptive action become embedded within the organization climate. If a firm then shifts to complexity logic as environmental changes that require a core logic shift occur, members must learn to send clear signals and to develop collaborative, sense-making, and co-evolutionary relationships inside the firm and beyond its boundaries. In other words, organization members will be expected to act in ways that contradict the overlearned responses that led to prior successes. Behavioral momentum fueled by familiarity and experience must be overcome at the very time that customary patterns appear to offer a comfortable refuge from new and alien demands. For each core logic/environment fit condition the same arguments apply.

Similar to patterns of organizational action that lead to organizational momentum, patterns of management behavior and decision making are developed over time. These schemas provide an architecture on which managers rely to respond to different situations. Prahalad and Bettis (1986: 485) termed such schemas in the top management teams of organizations 'the dominant general management logic (or dominant logic)' of the firm. Managers scan the external environment for information with which to make decisions about issues of concern. They interpret environmental information using the mental models (schemas) developed over time and within their experiences. 'Unfortunately, schemas are not infallible guides to the organization and its environments. In fact, some are relatively inaccurate representations of the world, particularly as conditions change. Furthermore, events often are not labeled accurately, and sometimes are processed through inaccurate and/or incomplete knowledge structures' (Prahalad and Bettis, 1986: 489). Hence, dominant logic forms yet another barrier for firms when they are attempting to forge a core logic shift. Consider, for example, two potential joint venture partners. One firm sees the venture as an opportunity to construct an enduring, reciprocal, and balanced collaboration that would enable both firms to coevolve in a complicated marketplace. Their dominant logic might make it very difficult for this firm's managers to recognize that their potential joint venture partner sees the alliance as a quick and transactional means to secure efficient entry into a new market.

Taken individually each of the inertial forces presents specific challenges for organizations that attempt a core logic shift. Collectively, the forces magnify the problems and challenge that firms face in bringing about a fundamental change in core logic. Paradoxically, the more intricate, robust, and embedded a firm's application of a core logic is, the more challenging it will be for that firm to shift to a different core logic and unlearn previously successful solutions. Given the difficulty of complete abandonment or unlearning the underlying premises of a given core logic, organizations may be tempted to blend elements of one core logic with another. However, we adhere to the arguments of Rumelt (1979), Huff (1982), and Mintzberg and Waters (1985) that effective strategy formulation and implementation require a coherent and logically consistent strategy frame. A look at the many contradictory premises across the three paradigms makes it clear that a strategy derived from more than one core logic *at a single point in time* violates this requirement. At best the results of such cross-fertilization might be confusion and efforts applied at cross-purposes. More likely, a strategy that relies concurrently on more than one of these core logics offers a high probability for

dysfunction within the firm and ultimate failure of the firm's activity in the marketplace. For example, while learning organizations (Senge, 1990a, 1990b) and firms relying on the new 7-S's (D'Aveni, 1995) have some basic principles in common, much of their logical structure reflects contradictory strategic premises. It seems counterproductive for a single strategy to incorporate both these approaches simultaneously. Stated differently, strategy formulation based on a blend of two different core logics means that the resulting strategy will invariably fail Rumelt's goal consistency test and neglect long-term workability.

The workability problem, in particular, is likely to mirror Chandler's (1962) observations regarding organization structure and increasing diversification. He noted that most firms continue to diversify without changing their structure, despite tacit knowledge that a functional structure is becoming increasingly ineffective, until they pay an economic price for their failure to abandon previously effective but currently dysfunctional choices. This does not imply that effective, firm-specific, customized strategies could not be developed using a range of ideas that embody the *same* core logic. A smorgasbord of theories and recommendations encompasses each of the three core logics. For example, it becomes clear from examining their paradigmatic roots that the resource-based view of the firm (e.g., Barney 1991) and managing core competencies (e.g., Hamel and Prahalad, 1994) rely on similar conceptual fundamentals. Tools, techniques, and methods suggested by approaches within the same core logic could be effectively blended to develop a customized strategy that is not only robust but also quite unique.

In addition to these managerial implications, several research issues also emerge from a comparison of these core logics. A key question that must be resolved concerns measurement. Are the premises underlying these core logics defined with sufficient precision that strategy differences can be measured reliably? Measurement of these core logics presents a significant methodological challenge, since contrary to typical archetype development we do not argue that these are entirely distinct paradigms. Consequently, these logic sets would need to be measured in terms of gestalts or in terms of profile deviations (Venkatraman, 1989). The primary test would be a measure of internal congruence among a set of variables describing each logical framework. Only after the construct validity of each core logic is established can researchers effectively examine the relationship between core logic and organizational performance.

A related measurement issue concerns the importance of initial differences in conditions and longitudinal analysis. The consequences of small initial differences at a point in time are quite different over time across the three logics. Since capability logic is dynamic and linear, initial differences will generally be maintained or grow linearly over time. Sony's exceptional ability to design miniature components is expected to be maintained and thereby provide a sustained advantage (Hamel and Prahalad, 1994). Guerrilla logic, on the other hand, is dynamic but disjointed. Therefore, initial differences at T_1 have little or no influence on events in T_2 since the underlying conditions for the two time periods are discontinuous. Kodak's chemical superiority in film had little influence on its competitive position when Polaroid changed the basis for competition to instant development. Complexity logic is dynamic, nonlinear, and iterative. Consequently small initial differences become magnified over time to create very large but unpredictable subsequent differences. A comparison of the current fate of regional airlines such as Southwest Airlines, America West Airlines and US Air illustrates this phenomenon. The diverse trajectories raise important questions for cross-sectional as well as longitudinal research designs.

A third research issue raised by these ideas concerns the appropriate level of analysis for strategy research. There is ample evidence to argue that if a firm has highly interdependent units and activities, a consistent and coherent strategy across business units and throughout the hierarchy is necessary for success (Mintzberg and Waters, 1985; Hitt and Ireland, 1985). An extension of this reasoning suggests that in the case of joint ventures or long-term strategic alliances, bounded strategy might include the strategy frames of several interdependent firms. Perhaps the failures of some joint ventures that looked good 'on paper' might be explained by the involved firms having adopted different core logics and thereby unintentionally sabotaging each other's strategy. If, on the other hand, some of a firm's internal activities are self-governing and independent, separate and unique strategies might

be developed for autonomous operating units. We suspect that self-reliant strategies might be derived from different core logics without creating conflicting strategic initiatives. This suggests that a thorough assessment of interdependence is needed in order to select an appropriate level of analysis for strategy research.

Fourth, Van de Ven (1989) argues that the tensions, inconsistencies, and contradictions between theories offer substantial opportunities to improve our understanding of organizational phenomena and to enhance theory development. We believe that a comparison of the core logics of these three approaches to strategy thereby can provide a useful conceptual anchor for future research. An increasing number of scholars (e.g., Eisenhardt, Brown, Chakravarthy, Collis, and Senge) have wide-ranging interests and make contributions to more than one core logic. This could confound theory development and empirical testing if the language used to describe organizational phenomena does not make these differences clear. For example, in *The Fifth Discipline Fieldbook*, Senge *et al.* (1994) discussed the consistencies between 'Total Quality' concepts and creating learning organizations. Since TQM is premised on getting systems in control, it is most closely aligned with a capability logic. In more recent work, Senge (1996) discusses the unknowability of complex adaptive systems that result from their interconnectedness. An 'unknowable' system cannot ever be 'in control' in the conventional sense of TQM models. It requires careful reading to notice that some of the systems Senge and his colleagues discuss in the *Fieldbook* are complex, adaptive systems as described by complexity theory, while others are very complicated but more linear systems.

As Whetten (1989) asserts, the contextual and logical boundaries of generalizability and application for theory should be clearly spelled out. Our examination of core logic suggests that each of the contrasting factors discussed in the previous section defines a boundary condition for effective use of a particular core logic. Making the root premises of these research streams more explicit can facilitate hypothesis testing by identifying grounds for falsifiability (Van de Ven, 1989). We believe that by clarifying the root assertions of each core logic, both research and practice can benefit from a more unclouded, consistent conceptualization.

Fifth, the unique contingencies and logical assumptions of these core logics may offer useful classification schemes for developing mid-range theories that are not limited by organization type, size, or industry setting. Firms that have adopted a similar core logic may be a useful sample for comparison across industries and product classifications. In addition, the consequences of strategic consistency could be examined by comparing the performance of firms that draw their strategies from a single core logic at any point in time with those that concurrently use more than one core logic to develop their strategy. As noted previously, we would hypothesize that the firms using a single core logic at any point in time would outperform firms using blended logics. We would also predict that firms that are able to unlearn one core logic and adopt a new core logic as conditions change would outperform firms that do not overcome structural and competitive inertia, unhealthy momentum, and the pressures of a familiar dominant logic.

The core logic framework presented here offers a different kind of blueprint for examining strategy and suggests answers to some persistent questions (Schendel, 1994). A key assumption we make is that none of the three core logics is universally the right choice for all firms or continuously the right choice for any given firm. The appropriateness of a particular strategy frame is a function of how well the foundation principles fit the internal and external realities a firm encounters or can create. Recent research (e.g., Brown and Eisenhardt, 1997; Hamel, 1998; Levy, 1994) suggests that both reality and effective strategies change over time, implying that a firm's core logic should also change. Effective application of an appropriate core logic may be what determines strategic success or failure. If so, it means managers must choose a core logic that fits the conditions they face or intend to create, they must formulate an effective strategy using the selected logical foundation, and they must discard incompatible elements from any previous core logic choices. In other words, internal and external consistency are essential and both are dynamic. Perhaps different outcomes among firms with similar internal capabilities can be explained by: (a) whether or not the strategic logic is consistent with reality, (b) whether the strategy draws from a single core logic at any

point in time, (c) whether inconsistent elements implemented from prior core logics have been successfully erased, and (d) the robustness with which a particular set of logical principles is used. As suggested previously, relying on multiple tactics within a common framework may amplify strategy effectiveness.

Are some core logics inherently healthier for firms or their environments? Two points seem relevant to consider. First, using a core logic that misrepresents reality is dysfunctional. For example, a capability logic would be inappropriate for high-velocity market settings (Eisenhardt, 1989). Likewise, complexity logic should not drive the strategy formulation of firms that intend to use aggressive tactics to annihilate their competitors. Second, continued use of any of these core logics may become dysfunctional over time. Long periods of stability, the desirable consequence of capability logic, can accelerate the effects of inertia, making both firms and their industries less agile. For firms using guerrilla logic, diminished benefits from any particular advantage coupled with competitive intensity and the continuous stress of relentless change can be dysfunctional and draining. Sustained use of guerrilla logic may stretch both organizations and industries so thinly that crises are inevitable. Complexity logic promotes connections and enduring ties. Yet, the more tightly interwoven the various parts of a system become, the more difficult it is to initiate radical change (Miller, 1990) and the more vulnerable the entire system is to the weakness of an individual unit (Senge, 1990b). Complexity logic strives to build interdependence and community ties which, in turn, make rethinking fundamental premises increasingly difficult. With these thoughts in mind, perhaps active use of all three logics by independent firms operating within the same sphere of influence contributes to the overall, long-term health of a marketplace.

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