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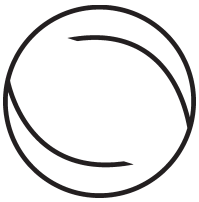

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John W. Selsky, Jim Goes and Oğuz N. Babüroğlu

Abstract

We revisit the original meaning of turbulence in the socioecological tradition of organization studies and outline a perspective on strategy making grounded in that tradition. This entails a contrast of the socioecological perspective with the more well-known neoclassical perspective on strategy, based on their core decision premises and their different understandings of environmental turbulence. We argue that while some mainstream strategy approaches have taken important strides toward addressing advanced turbulence, many others remain tethered to the neoclassical origins of the strategy discipline and are insufficiently responsive to the new landscape of strategy that now characterizes many industries. This new landscape is construed as the 'hyper environment', in which positive feedback processes and emergent field effects produce high volatility. We use two case illustrations from the US healthcare sector to examine how neoclassical and socioecological perspectives contribute to strategizing in hyper environments. Implications for strategic management theory and practice flow from this analysis.

Keywords: turbulence, strategy, hypercompetition, hyperturbulence, environmental textures

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Attempts by strategists and strategy researchers to make sense of rapid and disruptive change have inspired many to describe a new landscape for strategy making (Camillus 1997; Bettis and Hitt 1995; Stacey 1999). Authors have described a new 'alliance' form of capitalism (Gerlach 1992; Dunning 1998), an 'organizational [rather than market] economy' (Ghoshal and Moran 1996) and a 'flat world' with extensive interfirm collaboration (Friedman 2005). The notion of turbulence has been invoked consistently to describe this new landscape. The construct of the turbulent organizational environment was formulated by Emery and Trist in 1965 in the socioecological tradition in organization studies, but it has since been used in very different ways. That tradition's important insights about evolving organizational environments are in danger of being lost, and the implications of a socioecological approach to strategy have attracted little attention.

Our main purpose in this paper is to revisit the original meaning of turbulence and to outline a perspective on strategy making grounded in the socioecological tradition. We start by contrasting the socioecological perspective with the more well-known neoclassical perspective on strategy. We argue that while some mainstream strategy approaches have taken important strides toward addressing advanced turbulence, many others remain tethered to the neoclassical origins of

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the strategy discipline and are insufficiently responsive to the new landscape of strategy that now characterizes many industries.

The contrast of perspectives entails widening the scope of analysis beyond the routine value-creating efforts of the firm. We focus on interorganizational fields, or 'systems of firms' (Dunning 1998: 31), and what they produce collectively; and on the longer-term effects of strategy practices by individual firms and systems of firms. We posit a new kind of context for strategy making that we call the 'hyper environment', in which positive feedback processes and emergent field effects produce high volatility. We use two case illustrations from the US healthcare sector to examine how neoclassical and socioecological perspectives contribute to strategizing in hyper environments. Implications for strategic management theory and practice flow from this analysis.

Contemporary Approaches to Strategy Making

The Neoclassical Perspective

Although strategy models articulated by the various schools of strategy employ or even challenge elements of neoclassical economics in diverse ways, these approaches are all based on a common set of ideas and premises. Following recent usage (e.g. Swanson 1996; Colombo 1998; Galaskiewicz and Zaheer 1999), we consider them together as *neoclassical* approaches. These include the 'positioning' and 'strategic manoeuvring' schools (Mintzberg et al. 1998) and the resource-based view. All emphasize competitive activity among firms or strategic groups in an industry (Porter 1980; Barney 1986; Ferrier et al. 1999; Foss and Knudsen 2003). How firms seek competitive advantage over others distinguishes different schools. In the transaction cost school, firms 'seek … self interest with guile' (Ghoshal and Moran 1996: 17), acting opportunistically to externalize costs. In the dynamic positioning and entrepreneurial schools, each firm tries to disrupt or circumvent the competencies of the others (Christensen 1997; Ferrier et al. 1999). The resource-based view focuses on how firms deploy their heterogeneous resources to achieve a competitively superior balance of rents over opportunity costs (Hoskisson et al. 1999; Foss and Knudsen 2003). In all of these schools comparative economic returns is the usual metric for evaluating competitive success.

Revolutionary change, increasing volatility and blurring of boundaries in many industries have stimulated two lines of extension of the core neoclassical perspective. One line extends it in the direction of *more intensive competition*. The mid-1990s concept of hypercompetition (D'Aveni 1994; *Organization Science* 1996) continues to be emblematic of this way of thinking. Hypercompetition is defined as 'an environment characterized by intense and rapid competitive moves, in which competitors must move quickly to build advantages and erode the advantages of their rivals. This speeds up the dynamic strategic interactions among competitors' (D'Aveni 1994: 217–218). Equilibrium is construed as a negotiated order that softens aggressive competition and advantages the dominant players in the industry. A firm's capacity to disrupt its industry's equilibrium along one or more competitive 'ladders' (cost-quality, timing and

know-how, entry barriers, and financial resources) is seen as its key strategic competency. Disruptive competition can become so rapid and intense that it produces a new set of conditions for strategizing in an industry, the hypercompetitive context (D'Aveni 1994). Hypercompetition is meant to displace the assumption of equilibrium that underpins Porter's well-known five-forces model of strategy (Freeman and Boeker 1989; see also Bromiley and Papenhausen 2003).

The belief that competitive advantage may change rapidly or discontinuously lies at the heart of what Lengnick-Hall and Wolff (1999) call the 'guerrilla logic' in strategy. It is also consistent with the belief in continual market disequilibrium as propounded by the Austrian school (Jacobson 1992). These beliefs are evident in the resource-based literature on dynamic capabilities (e.g. Eisenhardt and Martin 2000; Elfring and Volberda 2001) and knowledge-based competition (Hoskisson et al. 1999). Moreover, entrepreneurial approaches to strategy generally see constant disruption, or the threat of it, as a normal state of affairs to be embraced (Christensen 1997; Illinich et al. 1996).

The other line extends the neoclassical perspective in the direction of *more extensive partnering*. Forces of globalization, technological change and other 'flatteners' have stimulated explosive growth in partnering arrangements (Hoskisson et al. 1999; Friedman 2005), leading to questions about how to combine the resources of different firms effectively. Neoclassically based strategy literature tends to regard partnering arrangements as a way for firms to gain competitive advantage directly (e.g. Hamel et al. 1989) or indirectly by internalizing horizontal-competitive, vertical or technological externalities (Colombo 1998; Dunning 1998). Interfirm cooperation is seen in opportunistic terms, enabling a firm to cope more efficiently with exogenous uncertainties (Dunning 1998; Ghoshal and Moran 1996). The opportunism reflects an ambivalence regarding partnering: 'For centuries, economists have thought that collaboration between firms inevitably leads to a suppression of competition … Today the dominant approach in economics equates interfirm collaboration with collusion to increase market power' (Gomes-Casseres 1996: 1). Other strategy studies view partnering in collaborative rather than opportunistic terms. We consider these under the socioecological perspective below.

The Socioecological Perspective

The socioecological perspective (or 'social ecology') originated in Tavistock approaches to open systems theory (see Emery and Trist 1973; McCann and Selsky 1984; Babüroğlu 1992; Emery 1999) and diverged early from the neoclassical roots of other schools of strategy. In social ecology the unit of analysis is a shared field of interorganizational action (Emery 1977; Scott 1992; Galaskiewicz and Zaheer 1999), such as a policy sector or social issue. Such fields are identified by tracing the complex web of interactions, multiple effects and consequences of strategic actions taken by various social actors associated with the sector or issue.

Fields consist of systems and environments. Systems are comprised of functionally dissimilar actors, making them more diverse than industries or

populations. Environments are conceptualized as 'extended social field[s]… with a causal texture' (Emery 2000: 625). The *causal texture* is an emergent property of the whole field and affects the behaviour of all systems within it. It is produced by the interactions of the social actors inhabiting the same field plus the effects of external forces acting on those actors. Thus, systems and environments coevolve.

The most important coevolutionary event for our purposes is the emergence of the turbulent field. A standard competitive environment (what Emery and Trist called a 'disturbed-reactive' causal texture) is produced and continually reproduced by the competitive actions of decision makers sharing a field. Each firm reacts to each other firm's actions by mobilizing its capabilities in attempts to achieve competitive advantage. Mutually reactive chains of decisions and actions result from these attempts (Weick 1995), and unintended dysfunctional consequences are often produced (Emery and Trist 1973; McCann and Selsky 1984; Babüroğlu 1988; Meyer et al. 1993). These are the negative externalities of economic theory. Turbulence emerges when the intended and unintended consequences of individual actions intersect, build up and trigger unpredictable changes in the field. The field itself becomes unstable. In this way the turbulent texture displaces the disturbed-reactive texture. Turbulence manifests in a variety of ways, such as volatility in the ground rules governing competition in an industry, emergent public policy issues and social problems, or sudden shifts in natural ecosystems.

The turbulent field is a distinct causal texture of the environment, characterized by high relevant uncertainty about values and purposes *in the shared environment of all organizations in an extended social field*. High relevant uncertainty occurs when external forces affecting decisions and actions become unpredictable, self-generating and linked in unexpected ways (Emery and Purser 1996). Turbulence is seen as an objective condition of a field of action — this is how it can be a distinctive texture — but is experienced differently by different actors. Some actors perceive they have the adaptive capacity to mobilize greater or more valuable stocks of resources than others to cope with the environmental uncertainty (McCann and Selsky 1984). They make sense of the uncertainty in different ways.

Collaborative endeavours based on shared values are seen as the primary means of coping with turbulence. The belief is that shared values might cohere the parts of the extended field by building shared meaning about the shared complex situation (Emery and Trist 1965, 1973), simplifying it for collaborative decision making and reducing relevant uncertainty. Shared values need to be forged deliberately through dialogue and interaction.

Fields can drift into a condition of advanced turbulence called *hyperturbulence* (McCann and Selsky 1984) when turbulence is dealt with inadequately. This occurs when externalized costs continue to soak up resources in the field, dragging down organizational *and field* performance to critical threshold levels. Decision makers experience hyperturbulence as a severe threat to survival from excessive resource demands. Under threat, players are likely to abandon attempts to collaborate, and the shared environment is likely to 'partition' into 'social enclaves' (regions of resource-secure space) and 'social vortices'

(regions of resource-deprived space). McCann and Selsky propose that partitioning should be a more deliberate process, called 'social triage', in which decision makers confront the awful prospect of writing off parts of the field. Triage is considered a feasible, albeit undesirable, response to preserve some adaptive capacity in a hyperturbulent field.

In strategy making grounded in socioecological thinking, a generative dynamic of change arises from many sources in a field of action. Decision makers understand they can neither predict nor control this dynamic by each firm conducting its own conventional strategic decision making. Instead they engage in different kinds of activities. Deliberation and dialogue help them generate normative common ground to underpin contractual negotiations (e.g. on joint ventures or R&D consortia) (Doz and Babüroğlu 2000). They may collaborate in innovating new processes to guide their interactions and stabilize the extended field (Doz and Babüroğlu 2000; Normann and Ramirez 1993), such as developing knowledge-based networks (Bettis and Hitt 1995; Hanssen-Bauer and Snow 1996). They may develop new adaptive skills and capabilities at the firm *and field* levels (Lempel and Shamsie 2003), such as learning and unlearning (Bettis and Hitt 1995) or democratic management of cross-functional processes. Socioecological strategizing goes beyond the 'focused line of attack' to dominate a market that is characteristic of neoclassically based approaches (Leibold et al. 2002: 137).

Key Differences

Certain premises underpin the neoclassical perspective on strategy (see Table 1): (1) The firm is the focal unit of strategic decision making (*firm-focused*). The firm has a relatively well-defined set of competitors in its industry(ies). (2) Strategic decisions tend to be made in consideration of a relatively narrowly defined set of actors, such as direct competitors and other key stakeholders (*reductive*). (3) Strategic actions are believed to have minimal repercussions outside the intended set of relevant actors. The time horizon for effects and repercussions is short-term (Laverty 1996) (*present-reactive*). (4) Each decision maker in a competitive field makes sense of that field individually, although there may be considerable competitive imitation (Bogner and Barr 2000), opportunistic partnering or social interaction among the players (Galaskiewicz and Zaheer 1999) (*analogous*). Industry-wide norms and institutional rules emerge from the working of an invisible hand.

A different set of premises underpin the socioecological perspective on strategy: (1) The extended social field is the focal unit of strategic decision making (*field-focused*). The field is populated by a diverse set of players with varying interests. Extended social fields are viewed as whole social systems, with their own identities, structures and dynamics. (2) Organizations are viewed as embedded in complex social systems and cultural contexts. Decisions about industry norms, rules of competition and other relational process are often made in negotiation or consultation with others in the same field (*holistic*). (3) Strategic decisions and actions are recognized to have emergent effects on other actors in

Table 1. Neoclassical and Socioecological Perspectives on Strategy

Dimensions	Neoclassical perspective	Socioecological perspective
Domain of action	Firm focused	Field focused
Locus of adaptation	Same industry; local field of action	Cross-industry and large-scale systems; wider field of action
Nature of interaction	Reductive	Holistic
Uncertainty handling	Uncertainty creating: destabilizing the industry	Uncertainty reducing: harnessing instability to stabilize the large-scale system
Risk-trust dynamics	Low-trust	High-trust
Strategic posture	Go-it-alone competitive or constrained partnership; mutually reactive	Forge collaborative bonds; active-adaptive
Strategic planning framework	Disjointed incremental or comprehensive synoptic	Normative incremental steering
Scope of effects	Present-reactive	Future-responsive
Time horizon	Short-term	Long-term
Externalities	Ignore	Incorporate, mitigate
Mode of sensemaking	Analogous	Collective
Mental models	Essentially static, machine model	Dynamic, system model
Interpretation of environmental texture	Disturbed-reactive	Turbulent, hyperturbulent

the field, on the field itself, and beyond it (Leibold et al. 2002) (*future-responsive*). Decision makers take into account long-term effects and repercussions of action (Laverty 1996), working long 'shadows of the future' into strategic decisions. (4) Sensemaking in a field can occur via collaboration and deliberation (*collective*). Decision makers shift their mental models to a 'wholes view' (Dansereau et al. 1999; see also Senge 1990).

The neoclassical premises are aligned with a logic of natural selection (Astley and Van de Ven 1983; Swanson 1996). They are consistent with Senge's (1990: 48) observation that 'most [decision makers] see their job as "managing their position" in isolation from the rest of the system'. In contrast, the socioecological premises are aligned with a logic of collective choice. We show below that this view of strategy resonates with some complexity approaches to strategy. Its emphasis on the relationships and processes in strategy making (Dyer and Singh 1998) aligns with a key feature of dynamic capabilities, namely, that firm-specific resources cannot be optimized separately but must be developed into multifunctional, dynamic and unique capabilities of the whole (Teece et al. 1997).

The Turbulent Field as a Distinctive Texture

A crucial difference between the two strategy perspectives lies in their conceptualizations of turbulence. Neoclassically based theorists view turbulence as a property of an individual firm's task environment. It represents a great deal of

change or demanding competitive challenges that makes adaptation difficult (Ansoff 1988; Mintzberg 1994; Boisot 1995; D'Aveni 1999). In contrast, socioecological theory views turbulence as a property of a shared field of action that must be dealt with collectively.

We support the socioecological position that turbulence must be understood as a distinctive field-based environmental texture. To construe turbulence as a property of a particular firm's environment, as in the neoclassical perspective, is to conflate it with the commercial challenges routinely faced by every firm (see Mintzberg 1994). Thus, when D'Aveni (1999: 130) asserts that 'turbulence creates different competitive environments characterized by different patterns of disruption', he means rivals' competitive actions, not turbulence; and the statement reduces to a truism.

Conflating turbulence with intense competitive challenges reveals two problematic assumptions. One assumption is that strategy *is* competition, that is, a firm's key relations with other firms are competitive (or hypercompetitive) and competitive behaviour is directed at other industry players. However, competitive actions may not always be appropriate, and direct effects of competitive actions — as well as unintended higher-order consequences — may not be confined to other industry actors. The other assumption is that the competitive ground is considered stable enough for familiar kinds of competitive behaviour, albeit speeded up (D'Aveni 1994) or more focused (Boisot 1995). Consequently, a firm might employ comparatively superior strategies to exploit its industry environment, even if it is highly dynamic or disrupted. Both of these assumptions may be valid when the environmental texture is disturbed-reactive, but neither may hold when the texture is turbulent.

The logical conclusion of conflating turbulence with competitive challenges is that 'the more turbulent the environment the more aggressive must be the firm's response' (Ansoff 1988: 173). As we discuss below, such 'proactive' responses may produce problematic unintended consequences in extended social fields.

Strategic Practice and Environmental Texture

Drawing on the above differences, we map the domain of strategy making along two dimensions. Frameworks of strategy practice are divided into *static* ones, which reflect directly the origins of the neoclassical perspective, and *dynamic* ones, which reflect the new landscape of strategy. Frameworks of the environment are divided into the conventional competitive *disturbed-reactive* texture and the high-uncertainty *turbulent* texture. Cross-classifying these dimensions yields four general types of situations (see Figure 1).

Cell 1 is the home of the neoclassical perspective, characterized by a disturbed-reactive environmental texture and conventional interfirm competition. Strategy models in this cell are built around a firm's industry positioning strategy or distinctive resource-based competencies. The icon is Porter's five-forces model.

In *Cell 2*, strategy models are dynamic and assume a disturbed-reactive environmental texture. This is the basis for the 'guerrilla' strategy of intensified

Figure 1. Environmental Textures and Strategic Practices

		ENVIRONMENTAL TEXTURE: Disturbed-reactive	ENVIRONMENTAL TEXTURE: Turbulent; hyperturbulent
STRATEGY PRACTICE/ SCHOOL: Dynamic *(e.g. dynamic capabilities, entrepreneurial schools)*		Intensified competition; hypercompetition 2	Hyper environment and new strategic practices 4
STRATEGY PRACTICE/ SCHOOL: Static *(e.g. positioning school, early resource-based view)*		1 Conventional competitive strategy (Porter 1980)	3 Opportunistic partnering

competition. Transaction-cost and organization-ecology models are seen to 'accurately describe organizations in slow-moving or very powerful environments, [but] they are not well suited to describing successful organizations in the highly competitive, high-velocity oligopolies in which many contemporary firms compete' (Brown and Eisenhardt 1997: 3). However, these oligopolistic contexts are construed as environments experiencing rapid change rather than as a distinctive texture. Hence, authors in this cell tend to claim that 'as … the environment becomes more turbulent, … most organizations can be expected to adapt … by intensifying their historical patterns of strategic exploitation and exploration adaptations' (Lewin et al. 1999: 539).

In *Cell 3*, the environment is viewed as dynamic, and static strategy models prevail. Firms seek competitive advantage by absorbing external uncertainties in extensive partnering arrangements that are opportunistic and low-trust (Colombo 1998; Nooteboom 1998), such as races to learn more than the partner more quickly (Gulati et al. 2000). Each partner 'co-adapts' (Brown and Eisenhardt 1998: 60), and if successful each 'wins' (Hamel et al. 1989). The effect is that alliances can 'reshape rivalry … [where] competition increasingly takes place among constellations of allied firms … Who wins and who loses depends on the competitive advantages that each group of firms creates through collective action' (Gomes-Casseres 1996: 108). In Cell 3 models, firms form alliances for the sake of growing bigger to compete more effectively, thereby enhancing *firm* performance (Rowley et al. 2004).

Some strategy models do not fit neatly in either Cell 2 or 3. For instance, the original formulation of dynamic capabilities (Teece et al. 1997) in the resource-based view was silent regarding the texture of the environment, but Eisenhardt and Martin (2000) have since shown how dynamic capabilities operate differently in 'moderately dynamic' versus 'high-velocity' markets. This literature appears still to be grounded in intensified competition *or* opportunistic partnering geared to a firm's achieving superior returns relative to others. For instance, partnering may enable firms to develop new resources through combination, such as through expropriation of a partner's knowledge (Heiman and Nickerson 2004)

or through accessing knowledge in a geographic 'alliance cluster' (Zaheer and George 2004).

Cell 4 is the arena for dynamic models of strategy practice in turbulent environments. This cell, we believe, is what scholars have been reaching for in describing the new landscape of strategy and suggesting the usual coping strategies need rethinking. We call this new landscape the *hyper environment*. Its defining conditions are (1) the stimulation of positive feedback processes in *local* fields of action that (2) produce emergent structural effects in *wider* fields of action.

First, in hyper environments actions by the players tend to be self-reinforcing in ways that do not occur in standard competitive environments. In the latter environments mutual understandings among rivals act as 'brakes' on their competitive practices (Zohar and Morgan 1996) and keep the competitive system in dynamic equilibrium (Barney 1986; Bogner and Barr 2000) through negative feedback processes. However, Bettis and Hitt (1995) point to the emergence since the 1980s of 'positive feedback industries' such as software, in which unit costs are not sensitive to increasing scale of production. This industry condition tends to stimulate hypercompetition due to 'disruptive' technological advances (see also Christensen 1997). In hypercompetitive situations, the mutual understandings among rivals tend to break down, releasing the brakes and enabling an industry's competitive dynamics to accelerate in positive feedback processes that reinforce deviations from equilibrium (Masuch 1985; see also Babüroğlu 1988). For example, when market leaders 'internalize industry change [and] … turn … themselves into moving targets' in order to deflect potential leapfrogging by competitors (Delapierre and Mytelka 1998: 78), this may speed up the rate of new product introductions. Andrew Grove (1996), former chairman of Intel, views strategy in these 'Austrian' terms.

Second, while the presence of positive feedback processes is a necessary condition for a hyper environment, self-reinforcing competitive action may also occur in non-hyper environments (e.g. price wars). For sufficiency, a second condition is required: emergent effects are produced on the *structure* of the extended social field. These effects begin with the build-up of many individual attempts to gain competitive advantage by externalizing costs. When these costs are not absorbed by industry actors, unintended phenomena can emerge which may spill over industry boundaries. Examples include ecological pollution and weakened collective bargaining (Emery and Purser 1996). They tend to lodge in the extended field, often beyond the horizon of any firm's strategic scope. These phenomena tend to be dysfunctional in terms of the wider field *because* they are unintended and unplanned (Barney 1986; see also Polley 1997). When they are not priced and/or are not assigned to their producers, they may ricochet around the field, manifest in unexpected ways, and be borne indirectly by various actors (e.g. pollution may lead to new regulations, lawsuits or illnesses). Thus, 'as firms introduce hypercompetitive strategies into an industry … they themselves become accelerators of disorder …, thereby accelerating perceived environmental turbulence' (Lewin et al. 1999: 541).

The dominance of positive feedback processes in a social field does not always produce emergent effects on its structure (see Baum and Singh 1994).

When they do so the two defining conditions of a hyper environment are satisfied. Those conditions disturb two fundamental tenets of mainstream strategy, namely, the contingent relationship between environmental texture and strategy practice, and the firm-centred locus of sustainable competitive advantage.

A Coevolutionary Relationship

The two conditions of the hyper environment undermine the core contingency assumption in strategy, that a firm's actions are independent in its extended social field. It is well recognized that the properties of an environment shape strategic responses of firms within it, but outside of social ecology and complexity theories it is less often recognized that strategy practices can alter the texture of the environment itself (Emery and Trist 1965; McCann and Selsky 1984; Baum and Singh 1994; Lengnick-Hall and Wolff 1999). The emergent-effects condition of the hyper environment means players are not able to control the consequences of their actions on the environmental texture. Greve (2002) argues that organization-environment coevolution occurs endogenously by means of feedback processes: 'This feedback is seen as the structure underlying dynamic system behavior and is viewed as responsible for the behavior of organization-environment systems' (Baum and Singh 1994: 380). The positive feedback condition of the hyper environment means tendencies toward disequilibrium are stimulated rather than dampened. Thus,

Proposition 1: In hyper environments, the relationship between environmental texture and strategy practices is coevolutionary, not contingent.

The current consensus is that the feedback processes are grounded in learning and knowledge exploitation (e.g. Von Krogh et al. 2000; Zahra and George 2002; Zollo and Winter 2002) and speed in decision making (e.g. Brown and Eisenhardt 1998; Perlow et al. 2002). These processes are interpreted as dynamic capabilities. In Cells 2 and 3 they are capabilities of individual firms. In Cell 2, competitive knowledge creation is spurred by rapid cycling of products and processes (Brown and Eisenhardt 1997; D'Aveni 1994; Eisenhardt and Martin 2000). In Cell 3, the same time-based imperative stimulates a search for exploitable partnerships (Delapierre and Mytelka 1998; Lewin et al. 1999).

In Cell 4 the dynamic capabilities reside in *systems* of firms (Dunning 1998), or interorganizational networks. These capabilities may be regionally based (Hanssen-Bauer and Snow 1996), industry based (Powell et al. 1996; Gulati et al. 2000; Lempel and Shamsie 2003) or market based (Normann and Ramirez 1993; Foss and Christensen 2001). From a Cell 4 vantage point, firms focus on dynamic capabilities 'not merely to compete better, but especially to coevolve better' (Leibold et al. 2002: 136). We elaborate on the field locus of capabilities in Cell 4 next.

Sustainable Advantage

The two conditions of the hyper environment also undermine conventional notions of sustainable competitive advantage. Rumelt (1998: 190) points out

that 'position … tends to be self sustaining as long as the basic environmental factors that underlie it remain stable'. The dynamic capabilities literature assumes that firms can achieve sustainable advantages even in rapidly changing environments and even if those advantages may need to shift quickly over time. For example, Zahra and George (2002: 185) propose that absorptive capacity is 'a dynamic capability pertaining to knowledge creation and utilization that enhances a firm's ability to gain and sustain a competitive advantage. [It] provides firms with the strategic flexibility … to adapt and evolve in high-velocity environments.'

Following Austrian approaches to strategy, the breakthrough of guerrilla logic was to realize the quest for sustainable advantages by firms in rapidly changing markets is futile; competitive advantage is merely 'a temporal assessment of recent strategic choices' (Lengnick-Hall and Wolff 1999: 1118). Yet the response in both guerrilla and capabilities logic is the same: the intensified competition characteristic of Cell 2. We believe the defining conditions of the hyper environment make this response misguided, because firms cannot evade the trap of contributing to the escalation of competitive intensity that prevents any firm from reaching a sustainable position from which to reap superior returns (Mintzberg 1994). Moreover, the externalities of constant disruption of industry equilibrium can come back to haunt the firms that contributed to creating the disruption. Researchers studying complex adaptive systems have discussed this paradox as the 'Red Queen effect' (Barnett and Hansen 1996), 'learning races' (Gulati et al. 2000) and 'speed traps' (Perlow et al. 2002).

A similar line of reasoning could be mounted for Cell 3 frameworks. The neoclassical premises of self-oriented sensemaking and autonomous identity encourage each firm to maximize its own value or build its own competencies (Stiles 2001). Hypercompetition, for example, dismisses the potentially stabilizing collective benefits of cooperative strategies. However, the emphasis on firms exploiting others for advantage can act as a drag on the development of field-level capabilities needed to address turbulence (Lempel and Shamsie 2003).

Essentially, we argue that conventional strategy practices in a hyper environment can depress the potential for sustainable competitive advantage. The positive feedback loops gear the players for competitive escalation and disruption, not for superior economic returns and sustained advantage. This dilemma is especially evident in the entrepreneurial school of strategy (see Christensen 1997). This reasoning leads to a puzzling proposition:

Proposition 2: In hyper environments, the locus of sustainable advantage shifts from the firm to the extended social field.

At this early stage we can only offer a sketch of what this might mean. As discussed above, in a hyper environment positive feedback dynamics strongly connect the various elements in the field. This means that competitive advantage 'defines a firm's potential relative to the overall processes and resources of the network' (Lengnick-Hall and Wolff 1999: 1118). It also means that ricocheting effects can alter the structure of the field. In such highly volatile situations, all firms in the field face extraordinary difficulties in capturing advantages and repelling ricocheting costs. Complexity approaches to strategy suggest that

'sustainable competitive advantage is a misplaced objective in a dynamic nonlinear system … [A] firm's competitive advantage is both its contribution to the systemic enterprise and a potential attractor shaping larger systemic patterns of behavior' (Lengnick-Hall and Wolff 1999: 1119; see also Dyer and Singh 1998).

Hence, sustainable competitive advantage for firms, a bedrock notion in mainstream strategy, may be outmoded in the hyper environments of Cell 4. In such environments the advantage may lie in actors' abilities to dampen returning externalities through collaboration, rather than in competing more effectively than rivals. The advantage would be for the field; if attained, it would redound to the players in it. This is consistent with Senge's (1990) insight that one's position cannot be managed in isolation from the behaviour of the whole system; see also Iansiti and Levien (2004).

Illustrations of the Contrasting Perspectives in Action

Two longitudinal field studies of strategic adaptation in US healthcare organizations broadly illustrate the contrasting strategy perspectives and the different cells in Figure 1. The first study, conducted during 1987–90 in the San Francisco Bay Area of California, witnessed new strategic action among acute care hospitals in response to a regulatory jolt (Meyer et al. 1993). The second study tracked strategic changes and health system development during 1993–5 in the Minneapolis-St. Paul area of Minnesota (Goes and Meyer 1995). Because the environment had gone turbulent and was tending toward hyper conditions for the same reason in both settings, responses by hospital executives can be compared as they shifted their strategic frameworks out of Cell 1. We focus on how the contrasting perspectives got applied in Cells 2–4.

Cells 2 and 3 Responses: Ambulance Circling in California

In 1982 California adopted the nation's first 'managed competition' programme in healthcare, creating incentives for providers to compete on price for government-funded care for indigent citizens. Coupled with a major federal change in Medicare reimbursement procedures, this produced unanticipated changes and a turbulent context for the state's hospital industry. At six-month intervals during 1987–90, a research team conducted interviews with San Francisco Bay Area hospital CEOs, alliance and network brokers, insurance executives and others (Meyer et al. 1993). These field data were supplemented with analyses of organizational documents, newspaper reports, secondary data from state records and other archival sources.

During this period the research team observed an explosion of mergers, alliances and partnerships linking up hospitals, physicians and insurance plans. These changes took place at a stunning rate; over one six-week period seven of the thirty hospitals studied underwent CEO successions, two hospitals merged and one was acquired by an outside system. Insurers bought into managed care organizations and confronted the complexities of actually delivering health services. Hospitals set up offsite primary care clinics, thereby invading doctors'

traditional turf and alienating their major suppliers. Physicians signed preferred or exclusive provider contracts, taking on unaccustomed risk for the cost and quality of their services. These strategic moves of various actors obliterated traditional boundaries among related industries and challenged the identity and domain of action of the hospital. Hospitals were no longer to be single organizations focused on curing acutely sick people, but hubs of 'integrated delivery systems' focused on marketing, financing and delivering a broad range of healthcare services. Some executives found it difficult to break out of their hospital-specific or industry-specific strategic focus, and pressures to link with other hospitals created identity crises for some hospitals and leaders. Many articulated a 'go-it-alone' strategy or else an interest only in weak alliances between hospitals.

The strategic moves also challenged the conventional rules of industry competition (Meyer et al. 1990). Initially, hospitals formed integrated networks strategically to achieve economies of scale and scope, complement their distinctive competencies and gain access to new markets. Hospital executives viewed these networks and alliances as mechanisms to adapt to and reduce their uncertainty over industry changes. Members of networks were more upbeat than independents about the future of the region's healthcare system and the industry, and more confident of their ability to survive industry restructuring.

As the environment grew more competitive *and* turbulent, however, hospitals began actively to disrupt the rules of competition and each other's competitive advantages. For example, preferred provider networks began to link groups of physicians tightly to particular health plans and provider hospitals. This restricted other hospitals' access to these physicians and spawned a bidding war over physicians, decimating medical staffs that had taken hospitals years to develop.

Over time, these equilibrium-destroying practices became a means for merely surviving rather than achieving competitive success. Large and affluent hospitals, payers and well-off physician groups linked together into large metanetworks that resembled social enclaves (Meyer et al. 1990), consolidating their hegemony over technological, financial and community resources in their markets. Intense rivalry erupted within and among networks as hospitals and brokers sought to establish positions of control and influence. Smaller and less fortunate players (e.g. public hospitals and clinics, small community hospitals) were marginalized into unattractive market niches. The Bay Area healthcare industry began to partition into 'haves' and 'have-nots'. While this relieved some uncertainty for hospital executives within the resource-rich enclaves, few recognized the unanticipated effects in the social field (i.e. the region's health system and its stakeholders) that began to emerge.

For example, in 1987 a number of hospitals in the region began to set themselves up as advanced trauma care centres. This was a strategy to wrest patients from local competitors and funnel acutely ill or injured patients into lucrative hospital services. Unfortunately, many trauma patients originated from poor, inner city neighbourhoods where a large portion of the population was uninsured. This Cell 2 strategy thus proved faulty as some hospitals lost millions of dollars on unreimbursed trauma care and were forced to close their emergency

rooms to protect their haemorrhaging financial resources. This in turn forced public hospitals, the 'providers of last resort', to take up the slack. Not infrequently trauma facilities in those hospitals would fill up and go on emergency bypass. In turn, this caused the region's medical emergency system to periodically collapse, leaving critically ill patients circling the city in ambulances, looking for a hospital with a vacant emergency bed. The state intervened only when county hospitals were on the verge of chaos. Ironically, *de facto* medical triage stimulated social triage in the extended social field in which these hospitals operated (Meyer et al. 1993).

Throughout the 1990s California hospitals continued to network, consolidate and compete vigorously. By 2005 the integrated delivery system had become the dominant design for healthcare delivery in the Bay Area. However, earlier failures to build sustainable collective strategies continue to echo in the form of failed alliances, labour problems and uncertain financial health (Benko 2001; Harrison and Montalvo 2002). A 2001 industry study noted that disruptive competition 'widened the historical gap between "have" and "have not" hospitals' (*San Francisco Business Times* 2001). A more recent analysis concluded that 'the region's healthcare system suffers from huge systemic flaws: Rampant inflation, large numbers of uninsured, uneven and hard to measure quality, and uncertain funding.' (Rauber 2005).

Cell 4 Responses: System Redesign in Minnesota

A decade after the advent of the California events, and in response to the same federal changes in Medicare procedures, the state of Minnesota enacted a landmark programme for reconfiguring healthcare delivery in 1992. This programme was designed to develop a managed competition model by stimulating the formation of regional integrated health delivery systems; each such system constituted networks of hospitals, physicians and insurance plans. During a 1993–5 field study a research team observed the process of consolidating and integrating health systems in real time. Data consisted of interviews with system and hospital executives, consumer and employer groups, and insurance executives, plus archival analyses of historical data (Goes and Meyer 1995; Van de Ven and Grazman 1999).

The researchers found that healthcare providers in the Minneapolis-St. Paul area responded as expected, rapidly reconfiguring into integrated systems (Christianson and Feldman 2002). In two years the six major health systems in the area consolidated into three, and alliances, affiliations and mergers among other provider organizations proliferated. Executives' perceptions of turbulence in the local healthcare environment varied across organizations and over time, but did not completely coincide with the unfolding of external events. Rather, perceived turbulence also depended on executives' beliefs about their capacity to adapt to the environmental changes. *Similar* to California, executives linking their organizations into health systems were more confident of their ability to 'weather the storm' of regulatory reform and industry consolidation than were others. These emerging systems resembled social enclaves, and other hospitals sought affiliation with them as a way to protect their market position and decrease their uncertainty about the future of the industry.

In *contrast* to California, interview results suggested that hospital executives viewed themselves as architects of a new organizational model for healthcare delivery. Through regular interaction in industry conferences, government advisory boards and social engagements, executives collectively constructed a new regional healthcare industry built around new institutional designs and new practices that would guide their own competition. The jolt of the new legislation provided an opportunity for powerful industry players who had long sought to challenge existing ways of operating to do just that. They challenged the old dominant strategy/structure configuration of hospital-based acute care and created new design standards (e.g. integrated systems using collaborative health service delivery models). Executives reported these actions helped them reduce uncertainty about industry changes and the future.

By 1994 the immediate threat of state-sponsored health reform had faded, but industry-wide momentum toward integrated systems continued unabated. Despite some setbacks, health systems in Minnesota continued to build out their integrated ventures and have enjoyed considerable financial success (Kennedy and Osland 1999). Christianson et al. (1995) found that substantial decreases in the growth in healthcare premiums accompanied the growth of integrated systems and managed care. Competition between health systems and concentrated employer purchasing groups were identified as the forces behind these cost savings (Anderson et al. 1993).

The complexion of competitive behaviour in Minnesota differed considerably from that in California. One industry expert stated that Minneapolis-St. Paul 'stand[s] out as a metropolitan area where private-sector interests have been leading architects of a redesigned health care landscape' (Anderson et al. 1993: 71). The field data suggest that this process was more managed than emergent. The CEO of Allina Health System of Minnesota, a major architect of the new model, articulated the prevailing sense of this approach to managing field-level change in this way:

> 'we need a whole new definition of partnership, whether between hospitals and managed care organizations, between alternative therapies and the traditional health care model, between for-profit and not-for-profit entities, between us and our communities … As components of the "system", we must partner and we must listen … It is not enough for us to be leaders of the old hierarchical health care organizations of the past. We must take responsibility for new community care networks that bring the fragmented system together.' (Sprenger 1998)

Discussion

Although the California and Minnesota healthcare industries entered periods of dramatic change at different points in time, the two markets exhibited similar features at the time they turned turbulent. Both markets were highly competitive, both were early adopters of managed care, and both experienced similar exogenous regulatory shocks. Hence, the environments of both markets posed similar decision-making challenges for strategists. However, the processes by which the two fields changed were different. Without intending to overdraw

these differences or pose them as empirical proofs of the contrasting strategy perspectives, the California situation broadly illustrates a neoclassical approach and the Minnesota situation a socioecological approach. These illustrations show how strategy practices in responding to and coevolving with turbulence can differ and what difference these practices can make.

The strategists in the two states responded differently in the ways they reconciled the tensions between the poles of the decision premises (from Table 1). Regarding tensions over identity, for example, many San Francisco Bay Area hospitals found themselves caught in a 'margin/mission trap': were they supposed to be hospitals intent on curing and caring for sick people, or aggressive bottom-line-focused businesses in a cut-throat industry? Some hospitals were unable to reconcile this trap and were forced into closure or unpalatable strategic choices. Strategies that were predominantly firm-focused and hypercompetitive increased turbulence and led to a hyper environment that spawned partitioning and severe negative externalities (e.g. breakdown of the trauma system). In terms of Figure 1, California hospitals generally followed the path from Cell 1 to Cells 2 and 3 as turbulence accelerated. In 2005 the state's surviving hospital systems remain savage competitors and the local health system continues to underperform.

The system builders in Minnesota seemed to find a way around this win/lose calculus. Not only were they committed to their curing and caring mission, but they also viewed it as a guiding parameter for the development of integrated systems. In their strategizing the hospital executives seemed to appreciate that long-term success lay in their ability to forge agreements and new rules of competition at the field level. They reframed the situation away from a win/lose game at the level of the hospital and crafted a strategic response — the construction of collaborative networks — to yield 'win' solutions for many players in the field. While their organizations continued to compete vigorously, executives in the developing health systems anticipated some of the negative effects of their competitive actions in the extended field and created a new model of competition that partially controlled for those effects. For example, several systems agreed to accept risk and financial responsibility for the health costs of indigent and uninsured patients within their traditional service areas. Leaders of successful systems played roles both as facilitators of cooperative efforts and as competitive strategists. We can infer that executives used socioecological thinking to coevolve the field from its initial state in Cell 1 to Cell 4 as turbulence accelerated. Nevertheless, the Minnesota market has suffered some of the same challenges of rising costs, lower reimbursements and threats to quality that characterize the entire US healthcare industry.

Explaining *why* the executives responded to turbulence differently in the two illustrations would involve an ethnographic analysis of the extended social fields of healthcare in the two states, including their social networks, social capital and connections to wider sociocultural contexts. This is beyond the scope of this paper. Regarding the outcomes of these different responses, one might conclude that both healthcare markets have ended up in roughly the same place. Both are dominated by large integrated health systems, with extensive penetration of managed-care health insurance organizations. But the wider fields look

very different today because the processes by which these two markets arrived at this point were substantively different. The process of industry *restructuring* in California generated negative externalities that still haunt the industry and region, whereas industry *transformation* in Minnesota retained negative feedback brakes in the system and avoided some of these externalities. The results seem to be a continuing volatility in California and a new equilibrium, dynamic but contained, in Minnesota.

Three implications arise from our analysis. First, *the nature of strategic thinking must be reconsidered in turbulent and hyper environments*. Such rethinking is necessary to realign concepts and practices of strategy making with the texture of the environment. While neoclassical strategy theorists have acknowledged the changing nature of decision *contexts* as complexity and uncertainty have increased in many industries, they have left the fundamental concept of strategic decision *making* largely undisturbed. We have argued this is due to their construal of turbulence as a property of an individual firm's task environment.

We have shown that neoclassical thinking is only one basis for the conduct of strategy and have outlined an alternative. From the neoclassical perspective it is difficult to recognize the unintended collective consequences of mutually reactive decision-making patterns in an industry. The kinds of collaboration that occurred in Minnesota, the way decision makers discovered and in some cases actively built common components of their respective missions, and the positive outcomes of doing this, would be considered unlikely from within the neoclassical perspective, if not collusive or illegal. From the socioecological perspective these kinds of actions are not only conceivable but also sensible.

Second, *the implications of turbulence for both the firm and the field must be considered*. As researchers grounded in neoclassical thinking have examined the nature of dynamism in environments and strategy practice, they have developed new strategy frameworks that have pushed the neoclassical perspective toward the intensified competition of Cell 2 and the opportunistic partnering of Cell 3. However, when strategists take up those frameworks to position their firms for advantage they are likely to produce significant externalized costs in the extended social field. We argued those externalities can bounce back or ricochet around a shared field. Researchers grounded in socioecological thinking are able to recognize turbulence as a field-level property and create strategy frameworks that fit in Cell 4. This offers alternatives to decision makers that may dampen externalities in extended fields. In this way the socioecological perspective goes beyond the neoclassical perspective by embracing new elements needed for effective strategizing in turbulent or hyper environments.

Third, *the contrasting perspectives have implications for strategy at the same level of analysis*. It is tempting to assign the neoclassical perspective to the level of competitive business strategy and the socioecological perspective to the level of corporate and collective strategy. However, Lado et al. (1997) suggest that competitive advantage and collaborative advantage are contrasting paradigms in the strategy literature, and that environmental turbulence affects decision makers' receptiveness to each paradigm. Furthermore, Dansereau et al. (1999: 351) assert that these two paradigms

'reflect different views of one level of analysis …[A]s a firm moves from a competitive strategy to one of collaboration, knowledge sharing, and pooling of resources, the view of the level of analysis changes from the firm-within-industry level — a parts view — to the industry level — a wholes view.'

We would argue that the Minnesota executives, but not their counterparts in California, came to an awareness of such a wholes view.

This movement of strategic orientation parallels attempts by some strategy scholars to shift from an atomistic to an embedded or institutional view of strategic behaviour (Gulati et al. 2000; Davis and McAdam 2000; Lempel and Shamsie 2003; Meyer at al. 2005). Thus, neoclassical and socioecological perspectives on strategy making should be focused at the same level of analysis: on the firm in static Cell 1 conditions and on the extended social field in the dynamic conditions of Cells 2–4.

Conclusion

We have attempted to show that two very different perspectives on the nature of turbulence are evident in the strategy and organization studies literatures of the past 40 years. We have also suggested that as many industries and fields move into states of high volatility, conventional models of strategy and firm and industry behaviour need to be questioned.

This paper has made several contributions. It brought back the texture of the environment as a prime consideration for effective strategy making by highlighting its coevolutionary relationship with strategy practice. Focusing on environmental textures enabled us to add to recent coevolutionary approaches to strategy by assessing how organizations are embedded in extended social fields that are broader than populations or industries (Lewin et al. 1999; Davis and McAdam 2000; Meyer et al. 2005). The potential contribution of the socioecological perspective to strategy theory in volatile and high-velocity environments lies in working out the implications of this embeddedness. The hyper environment is still emerging, and its contours are still indistinct. Important insights about it can be found in the work on hypercompetition and hyperturbulence that can enrich both the neoclassical and socioecological perspectives and make strategy more effective. Empirical studies are now needed, such as to study in finer detail the properties of such environments and how those environments coevolve with appropriate practices.

This paper also critiqued one recently attractive stream of strategy research, guerrilla logic, and a popular exponent of it, hypercompetition. Applying concepts from the resource-based, complexity and social-ecology literatures revealed hypercompetition to be largely a set of prescriptions for firms to cope with high-velocity competition, and not a description of a unique texture of environment as claimed. We argued that when the relevant environment shifts to a turbulent texture, hypercompetition merely prescribes doing the same thing, only more furiously than in the past. More importantly, it stimulates the emergence of hyper environments by 'accelerating disorder' (Lewin et al. 1999) in extended social fields.

Finally, the paper questioned the nature and viability of sustainable competitive advantage in turbulent or hyper environments. Much work is needed to clarify the proposition that sustainable advantage is contained by the field, not the firm, in a hyper environment. Unsettling the meaning of sustainable advantage would entail rethinking or extending concepts such as absorptive capacity and other dynamic capabilities. What would these capabilities look like at a field level?

Our argument that socioecological strategy frameworks are appropriate in hyper environments poses a challenge to strategic thinking as it has evolved in recent years. Complexity theorists believe the strategic task is becoming more paradoxical than before: 'The central strategic management challenge in a complex adaptive business ecosystem is to be both a competitor and an evolver' (Leibold et al. 2002: 137–138). Clearly, not every industry environment is hyper, but our illustrations show they are not confined to the oft-quoted communication and biotechnology industries. Our use of the healthcare industry could be considered unusual because of its strong social and public policy character. However, *all* industries are inherently social in that their members are deeply implicated in the functioning and performance of their extended social fields. Thus, our analysis may be generalizable to many industry contexts.

Ultimately, the value of highlighting the contrasting perspectives of strategy making may lie in showing that they lead strategists to consider contrasting choices. In neoclassical thinking, the choices are about how to compete, defend and disrupt more aggressively in order for a firm to triumph over others. In socioecological thinking, the choices are about how to shape a shared context in order to influence the conditions that can stabilize or destabilize wider fields of action.

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