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The Philosophical Foundations of a Radical Austrian Approach to Entrepreneurship

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Abstract

The equilibrium-based approaches that dominate entrepreneurship research offer useful insights into some aspects of entrepreneurship, but they ignore or downplay many fundamental entrepreneurial phenomena such as individuals' creative imaginations, firms' resource (re)combinations, and markets' disequilibrating tendencies—and the genuine uncertainty and widespread heterogeneity these imply. To overcome these limitations, scholars have recently introduced a nonequilibrium approach to entrepreneurship based on Ludwig Lachmann's "radical subjectivist" brand of Austrian economics. Here, this radical Austrian approach is extended beyond Lachmann to include the work of radical subjectivism's other noted theorist: George Shackle. More important, the article extends entrepreneurship research by systematically comparing and contrasting the nascent, radical Austrian approach to entrepreneurship with three dominant equilibrium-based approaches: neoclassical, Kirznerian, and Schumpeterian economics. Specifically, the article (a) explicates the *paradigmatic philosophical assumptions* about the nature of individuals, firms, and markets that underlie these approaches; (b) demonstrates how *metaphor* is employed as a device to concretize these assumptions; (c) examines the *research questions* that arise from the assumptions these metaphors reflect; and (d) uses the Japanese "beer wars" of the 1980s and 1990s to illustrate one *methodological approach* (hermeneutics) researchers can adopt to apply these assumptions, metaphors, and questions to study entrepreneurial phenomena from a radical subjectivist perspective.

Keywords: entrepreneurship, Austrian economics, radical subjectivism, philosophy of science, metaphor, hermeneutics

Entrepreneurship is fundamentally a disequilibrium phenomenon: It focuses on creating new order rather than achieving equilibrium (McKelvey, 2004); it spotlights individual action as an "antiequilibrium force" that introduces novelty, surprise, and instability rather than as a repetitive, predictable, stabilizing force (Stevenson & Harmeling, 1990); it emphasizes profit opportunities in disequilibrium markets and the enterprising individuals motivated to exploit them rather than the absence of such opportunities, incentives, and entrepreneurs in equilibrium markets (Venkataraman, 1997). Though most entrepreneurship scholars recognize this, they nonetheless continue to privilege equilibrium: a state of rest where beliefs converge, products are homogeneous, and change is predictable (Kirzner, 1973). They make equilibrium their ultimate reference point by employing economic theories grounded in competitive equilibrium (Alvarez & Busenitz, 2001), punctuated equilibrium (Shane, 1996), or a general tendency toward equilibrium (Shane & Venkataraman, 2000). Though strategy and organization theorists have noted this contradiction before in ways that reflect the different concerns of their disciplines (Bromiley & Papenhausen, 2003; Meyer, Gaba, & Colwell, 2005), entrepreneurship scholars have barely begun to address it. The problem is especially critical in the entrepreneurship field because equilibrium-based theories entirely eliminate or severely circumscribe such central entrepreneurial phenomena as (1) entrepreneurs' choices, actions, and opportunities; (2) genuine uncertainty associated with capital investment and the passage of time; and (3) the continual emergence of novel ideas, resources, and products that drive competitive market processes.

To begin addressing these limitations, Chiles, Bluedorn, and Gupta (2007) recently introduced Ludwig

Lachmann's "radical Austrian" approach, offering scholars a nonequilibrium alternative to equilibrium-based economic theories of entrepreneurship. Here, we extend the treatment of this radical subjectivist brand of Austrian economics beyond Lachmann to include the work of radical subjectivism's other noted theorist, George Shackle.[1] Though Chiles et al. (2007) paid little attention to Shackle, we use his work to add depth and nuance to the nascent radical subjectivist approach to entrepreneurship by elaborating the process of imaginative choice and emphasizing the "kaleidic" nature of markets (Shackle, 1972). More important, we extend entrepreneurship research by systematically comparing and contrasting the emerging radical Austrian approach to entrepreneurship with three dominant equilibrium-based approaches: neoclassical, Kirznerian, and Schumpeterian economics. We focus on these three approaches because they are widely regarded as central to entrepreneurship research (Chiles et al., 2007; McMullen & Shepherd, 2006; Miller, 2007; Shane, 2000) and because they emphasize market equilibrium/disequilibrium: (1) Neoclassical economics provides the archetypal market equilibrium theory in which entrepreneurship is treated as a factor of production; (2) Kirzner's traditional brand of Austrian economics highlights how entrepreneurs drive markets from disequilibrium toward equilibrium; and (3) Schumpeterian economics spotlights how entrepreneurs create market disequilibrium by radically disrupting a market in equilibrium, only to take it to a new equilibrium over time.[2] In contrast, the radical Austrian approach emphasizes how entrepreneurs think and act in ways that may drive markets farther from equilibrium—an outcome scholars have identified as the only uniquely Austrian "prediction" (Foss, 2007), but one that entrepreneurship scholars have largely overlooked. At the heart of our argument, we (1) explicate the paradigmatic philosophical assumptions about the nature of individuals, firms, and markets that underlie these approaches;[3] (2) demonstrate how metaphor is employed as a device to concretize these assumptions; (3) examine the research questions that arise from the assumptions these metaphors reflect; and (4) use the Japanese "beer wars" to illustrate one methodological approach (hermeneutics) researchers can adopt to apply these assumptions, metaphors, and questions to study entrepreneurial phenomena from a radical subjectivist perspective.

Scholars have largely ignored the philosophical underpinnings of entrepreneurship generally (Grant & Perren, 2002; Jennings, Perren, & Carter, 2005) and of these economic approaches in particular (but see McMullen & Shepherd, 2006; Pittaway, 2005), and they have yet to explicate the philosophical foundations of a radical subjectivist approach to entrepreneurship. Analyzing such foundations is important because it enables entrepreneurship scholars to extend their research into "new agendas" and "ultimately new theories and understandings" capable of revitalizing the field (Grant & Perren, 2002, p. 185). This is especially salient for our purposes because, as Pittaway (2005, p. 215) observed, equilibrium-based economic theories "have tended to eradicate meaningful interpretations of entrepreneurship from their inquiry as a consequence of the philosophies used." In addition, our analysis helps reduce the confusion that arises when scholars fail to recognize that different research approaches not only rest on different paradigmatic assumptions but also evoke different metaphors, raise different questions, and require different methodological approaches.[4]

Paradigmatic Philosophical Assumptions

To understand how the radical subjectivists' philosophical assumptions differ from those that inform equilibrium-based theories, it is helpful to clarify where scholars stand on the key philosophical issue of ontology (the nature of existence). Specifically, it is useful to know whether their perspective on this issue is more objectivist, emphasizing the idea that existence is independent of variations in the human mind; or more subjectivist, emphasizing the extent to which existence depends on such variations (Johnson & Duberley, 2000). We array our four economic approaches to entrepreneurship along these dimensions (from more objectivist to more subjectivist) to form a continuum of paradigms (see Table 1): (1) Positivists assume the social world exists independent of individuals' knowledge of it. (2) Postpositivists assume the social world has an actual, substantial existence but can be apprehended only imperfectly by individuals because of the contested nature of human knowledge. (3) Critical realists assume the social world has a material presence apart from individuals' knowledge of it, but they emphasize its changing and structured nature and admit some role for human cognition to influence it. (4) Constructivists assume the social world is subjectively and intersubjectively created by human actors. Each paradigm represents a different worldview in which proponents accept "on faith" a distinct set of basic beliefs about "the nature of the 'world,' the individual's place in it, and the range of possible relationships to that world and its parts" (Guba & Lincoln, 1994, p. 107). In this section, we use this continuum to explicate the philosophical assumptions that undergird each of the three equilibrium-based approaches to entrepreneurship and contrast them with the constructivist assumptions of the radical subjectivist approach to reveal the roots of their divergent theories of entrepreneurship.

Traditional Equilibrium-Based Economic Approaches to Entrepreneurship

Neoclassical economists, following the path blazed by Leon Walras, are positivists: They assume an objectively "real" world that exists independent of entrepreneurs'

Table 1. Four Economic Approaches to Entrepreneurship

	More Objectivist Ontology ⟵			⟶ More Subjectivist Ontology
Approaches	Neoclassical economics (Walras), Equilibrium-based approach	Traditional Austrian economics (Kirzner), Equilibrium-based approach	Schumpeterian economics (Schumpeter), Equilibrium-based approach	Radical subjectivist Austrian economics (Lachmann, Shackle), Nonequilibrium approach
Paradigmatic Philosophical Assumptions	Positivist paradigm, Realist ontology	Postpositivist paradigm, Realist ontology	Critical realist paradigm, Realist ontology	Constructivist paradigm, Relativist ontology
Core Ideas	Entrepreneurs make rational, optimal decisions and they all mechanically recognize the same preexisting opportunities; Firms serve as "production functions" that mathematically convert inputs into outputs; Markets reside in equilibrium.	Entrepreneurs are alert to preexisting opportunities and they differentially discover such opportunities based on their subjective interpretations of past experience; Firms serve as instruments to exploit such opportunities, but the entrepreneur (singular) who inhabits them need not invest any capital resources in order to do so; Markets gravitate toward equilibrium.	Entrepreneurs are driven by the power of their subjective human will to episodically introduce new resource combinations in order to exploit preexisting and widely known opportunities created by scientists' inventions; Without any real need for firms, entrepreneurs innovate such combinations from preexisting elements; Markets evolve from one long period of equilibrium through brief upheaval to another such equilibrium.	Entrepreneurs exercise genuine choice based on their subjective expectations of an imagined future and can themselves create and continually recreate opportunities through such imaginative acts; Firms serve as vehicles for entrepreneurs to materialize their imaginative mental acts by combining and continually recombining resources necessary to produce novel goods and services; Markets are created and continually recreated through entrepreneurs' subjective acts of the imagination, creative actions involving resource (re)combinations and novel product offerings, and unstable market interactions that perpetually disrupt markets and drive them away from equilibrium.
Metaphors	Mechanistic (e.g., clockworks, equilibrium)	Organic (Discovery)	Organic (Gales of creative destruction)	Contextualist (Kaleidic process)
Theories	Integrative/Analytic	Integrative/Synthetic	Integrative/Synthetic	Dispersive/Synthetic
Research Questions	How strongly, and in what direction, does the entrepreneurial function react to objectively perceived opportunities? What is the optimal allocation of given means to achieve predetermined ends? At what rate do people enter and exit self-employment, and does their level of risk aversion affect such processes? How much manipulation of given knowledge is required to ensure market equilibrium?	How do entrepreneurs continually discover existing opportunities? How do they respond to existing patterns of entrepreneurial mistakes characterized by overlooked opportunities? How do they drive disequilibrium markets toward equilibrium?	How do entrepreneurs respond to episodic waves of exogenous technological change? How do they combine existing resources in new ways to exploit such change opportunities? At what rate do these efforts succeed or fail? How do their actions disrupt markets, moving them from one equilibrium state to another?	How do entrepreneurs continually create new opportunities? How does the cognitive process of forward-looking imaginative choice actually work? How do forward-looking entrepreneurs continually recreate capital combinations within firms to produce a stream of new product offerings? How do forward-looking entrepreneurs proactively reshuffle resources to create the capabilities necessary to introduce novel products? How do entrepreneurs use their forward-looking imaginations and creative resource combinations to drive markets farther from equilibrium? How do their interactions disrupt markets, and how do they interpret and continually reinterpret these disruptions? How is order achieved in disequilibrium market processes?

Table 1. Four Economic Approaches to Entrepreneurship *(continued)*

	More Objectivist Ontology ←			→ More Subjectivist Ontology
Methodological Approaches	Quantitative/statistical/variance methods (e.g. multivariate regression analysis)	Mostly quantitative/statistical/variance methods; some qualitative/variance methods	Mostly quantitative/statistical/ variance methods; some qualitative/variance methods	Process methods (e.g., hermeneutics)
Authors	Lucas (1978), Kihlstrom & Laffont (1979), Evans & Jovanovic (1989), Evans & Leighton (1989), Douglas & Shepherd (2000, 2002), Bianchi & Henrekson (2005), Aquilina et al. (2006)	Kaish & Gilad (1991), Busenitz (1996), Venkataraman (1997), Zaheer & Zaheer (1997), Ferrier et al. (1999), Shane (2000), Shane & Venkataraman (2000), Gaglio & Katz (2001), Demmert & Klein (2003), Gaglio (2004)	Guth & Ginsberg (1990), Meyer et al. (1990, 1993), Shane (1996), Tripsas (1997), Venkataraman (1997, 2004), Ferrier et al. (1999), Shane & Venkataraman (2000), Wiggins & Ruefli (2005), Lavie (2006), Giarrantana & Fosfuri (2007)	Chiles et al. (2004), Dew et al. (2004), Baker & Nelson (2005),a Chiles & Zarankin (2006), Berglund (2007), Chiles et al. (2007), Foss & Ishikawa (2007), Kor et al. (2007), Loasby (2007), Foss et al. (2008), Chiles et al. (2010), Mathews (2010)

a. As we note in the section on methodological approaches, Baker and Nelson (2005) do not explicitly invoke the work of Lachmann or Shackle, but their study nonetheless has much in common with radical subjectivism.

knowledge of it, a world devoid of time and context, to which entrepreneurs passively react using a rational, optimal decision-making calculus (Jackson, 1995).[5] They argue that (a) entrepreneurs make optimal choices based on rational decision making, full information, and perfect foresight; (b) firms are production functions that mathematically convert discrete inputs of land, labor, capital, and entrepreneurship into consumer outputs; and (c) markets reside in equilibrium. Implicit in these arguments are the ontological assumptions that (a) all entrepreneurs mechanically recognize the same preexisting, objective opportunities; (b) all firms draw on the same finite pool of objectively defined resources, the qualities of which entrepreneurs take as given and which consequently exist independent of their choices; and (c) all markets are governed by the same objectively observable mechanical "laws" of equilibrium, which means that entrepreneurs—rather than acting and interacting in markets—simply take "market variables" presented to them as "an external fact of nature" (Kirzner, 1997, p. 63). Adopting this approach, entrepreneurship scholars have examined a range of phenomena from firm formation based on risk aversion (Kihlstrom & Laffont, 1979) to entrepreneurial choice under liquidity constraints (Evans & Jovanovic, 1989) to entrepreneurship as a utility-maximizing response (Douglas & Shepherd, 2000). Although scholars still employ neoclassical models to understand entrepreneurship (Aquilina et al., 2006), most usefully at the aggregate level (Bianchi & Henrekson, 2005), these models suffer from a number of serious shortcomings. Among their most significant flaws, from a subjectivist perspective, is that they banish imaginative choice, human action, genuine uncertainty, and market dynamics from explanations of entrepreneurship.

Israel Kirzner and his followers are postpositivists: They view the world as comprising objective phenomena to which entrepreneurs actively respond using their subjective preferences to discover preexisting gaps or discrepancies in dynamic markets (Kirzner, 1997; Shane & Venkataraman, 2000). Kirzner contended that (a) entrepreneurs discover opportunities that exist "out there," simply "waiting to be noticed" (Kirzner, 1973, p. 74), but different entrepreneurs perceive such objective opportunities differently depending on their subjective interpretation of past experience; (b) firms serve as instruments to exploit opportunities, but the entrepreneur (singular) who inhabits them need not invest any capital resources in order to do so (Kirzner, 1973); and (c) markets tend toward equilibrium as entrepreneurs correct market inefficiencies, coordinate dispersed knowledge, and close "pockets of ignorance" (Kirzner, 1973). Implicit in these contentions are the ontological assumptions that (a) entrepreneurs discover preexisting objective opportunities using their subjective interpretations; (b) firms are instruments for entrepreneurs to exploit such opportunities, but because resources are absent from consideration, the question of whether entrepreneurs perceive resources objectively or subjectively does not arise; and (c) markets are systematically driven toward a preexisting, objectively defined equilibrium by entrepreneurs whose actions serve to "correct" the "errors" of prior entrepreneurs who "misread the market" (Kirzner, 1997)—which implies that current entrepreneurs make a single correct reading of an objectively real market. Following Kirzner, entrepreneurship researchers have examined how entrepreneurs use their superior alertness (Kaish & Gilad, 1991) and prior knowledge (Shane, 2000) to discover opportunities that exist due to imperfections in the market. Although Kirzner's theory plays a central role in current entrepreneurship research, he neglected the role of entrepreneurs in creating opportunities; largely ignored entrepreneurs' subjective expectations of an imagined future;[6] permitted entrepreneurial firms to exploit opportunities without having to invest capital resources, thus minimizing the role of genuine uncertainty; and spotlighted equilibrium as a state to which disequilibrium markets naturally gravitate.

Joseph Schumpeter and his followers are critical realists:[7] They see a structured and changing world that materially exists independent of entrepreneurs' knowledge of it while acknowledging a role for entrepreneurs to actively—if episodically—respond to it, and in so doing, shape it through "human will"[8] (Schumpeter, 1934). Schumpeter made the case that (a) entrepreneurs are driven by the power of their will to episodically introduce innovative resource combinations in order to exploit widely known opportunities created by scientists' inventions; (b) firms are not really necessary for entrepreneurial activity because entrepreneurs "operate outside the usual constraints imposed by resources owners" and, hence, are not an "integral part of the firm's operation" (Foss & Klein, 2005, p. 58); and (c) markets start in equilibrium, occasionally get jolted into disequilibrium by heroic entrepreneurs, and eventually settle into a new equilibrium that will itself be jolted again. Implicit in these claims are the ontological assumptions that (a) entrepreneurs intermittently uncover preexisting objective opportunities using their subjective human will; (b) firms are not an integral part of the story, but entrepreneurs nonetheless episodically exercise their subjective human will to marshal preexisting resources into new combinations; and (c) markets, normally governed by the objectively observable mechanical "laws" of equilibrium, occasionally undergo fundamental structural change as a result of heroic entrepreneurs' actions rooted in subjective human will, which suggests that entrepreneurs perceive markets objectively in equilibrium and subjectively as they move them away from equilibrium. Embracing Schumpeterian ideas, entrepreneurship scholars have examined phenomena such as corporate entrepreneurship (Guth & Ginsberg, 1990), variations in the national rate of entrepreneurship (Shane, 1996), and regional transformation

through entrepreneurship (Venkataraman, 2004). Although Schumpeter's approach to entrepreneurship has had a profound and important influence on entrepreneurship research, not least in moving it away from thoroughgoing positivism, it is also riddled with gaps and problematic assumptions. Schumpeter avoided discussing the role of entrepreneurs in creating opportunities, ignored entrepreneurs' subjective imaginations, limited innovation to periodic bursts and preexisting resources employed in other valued uses, distinguished sharply between entrepreneurs and resource owners, and highlighted equilibrium as the market's natural state; thus, his approach barely touches on the phenomena of greatest concern to radical subjectivists.

Despite important differences, these three equilibrium-based approaches share a realist ontology, and thus, philosophical assumptions biased toward the more objectivist end of the continuum. Indeed, equilibrium—with its convergence of beliefs among myriad market participants—is a natural bedfellow of objectivism. Consistent with this argument, noted psychologist Jean Piaget argued that "objective thought is fully equilibrated thought" (Solomon, 1989, p. 47). However, for subjective—and hence divergent— interpretations of complex phenomena, equilibrium-based approaches are inappropriate; in such circumstances, a nonequilibrium approach is required due to its natural affinity with the complexity, uncertainty, and subjectivity of processes that perpetually generate novelty (Geldof, 1995). To investigate entrepreneurship in markets that do not gravitate toward equilibrium, therefore, we propose a radically subjectivist approach, one firmly rooted in a relativist ontology and thus in philosophical assumptions biased toward the more subjectivist end of the continuum. This "subtle but powerful shift of ontology" from realism to relativism (McMullen & Shepherd, 2006, p. 146) opens new possibilities for understanding entrepreneurship as a more subjective, creative, and dynamic phenomenon.

A New Nonequilibrium Economic Approach to Entrepreneurship

Radical subjectivist economists are constructivists: They see much of the social world as actively created and continually recreated by entrepreneurs' subjective imaginations, creative actions, and unstable interactions in markets characterized by genuine uncertainty, widespread heterogeneity, and continual disruption (Lachmann, 1977; Shackle, 1979). They contend that (a) entrepreneurs exercise genuine choice based on their subjective expectations of an imagined future and can themselves create opportunities through such imaginative acts, (b) firms are vehicles for the combination and continual recombination of resources necessary to produce final goods and services, and (c) markets may move farther from equilibrium. Implicit in these contentions are the ontological assumptions that (a) entrepreneurs create and continually recreate opportunities ex nihilo using their subjective expectations; (b) firms are vehicles for entrepreneurs to exploit such opportunities by forming and continually reforming subjectively defined resources (which need not preexist) into new combinations; and (c) markets are constructed and continually reconstructed by entrepreneurs whose disequilibrating actions and interactions are driven by subjective expectations, which they continually modify as they subjectively interpret and continually reinterpret other entrepreneurs' creative actions and unstable interactions in markets moving away from equilibrium. Below we elaborate each of these core contentions.

Entrepreneurs and their subjective imaginations. In a fundamental paradigm shift away from equilibrium-based approaches, radical subjectivists propose an alternative approach at the individual level: that entrepreneurs bring subjective mental activity to bear not only in interpreting past experience but also in formulating their expectations of an imagined future. More specifically, these scholars call attention to entrepreneurs who actively engage the human mind to create subjective mental images of possible future actions and outcomes, and to select the scenario they deem most desirable. Shackle (1966, 1979) explicitly theorized a process by which an individual chooses among a variety of imagined sequels associated with a particular course of action. The decision maker considers those sequels she or he deems possible, orders them from most to least desirable, and ultimately chooses by focusing attention on the most and the least desired of these imagined sequences of events. Shackle (1983, p. 7) emphasized the unique generative power of such a choice, likening it to an "uncaused cause." By using their "individual imagination to create afresh from moment to moment" (Shackle, 1958, p. 33), entrepreneurs are "injecting something essentially new into the world" (p. 34), and can thus continually introduce novelty and difference into the market. By doing so, they create history and influence the future course of events (Shackle, 1979). Moreover, radical subjectivists argue, these entrepreneurs formulate plans with an eye to their subjective expectations of an imagined future as well as their subjective interpretation of past experience (Lachmann, 1970). That future is unknowable because entrepreneurial choices—based as they are on subjective expectations of an imagined future—are inherently unpredictable, as are the entrepreneurial actions of others that flow from such choices (Lachmann, 1976a).

Compared with equilibrium-based approaches, this nonequilibrium approach is not only more subjective, originative, and visionary but also more contextual, holistic, and revisionary. Instead of distinguishing sharply between opportunities and entrepreneurs, radical subjectivists see them as inseparable. Opportunities are not generated exogenously, waiting objectively in the environment for entrepreneurs to uncover, but rather are created

endogenously through entrepreneurs' subjective imaginations. As opposed to focusing exclusively on entrepreneurs who look back on prior experience, as in Kirzner's approach, radical subjectivists spotlight entrepreneurs who look forward to envision the yet-to-be-constructed future. And contrary to a neoclassical world characterized by optimality, rationality, and perfect knowledge and prescience, radical subjectivists see the world as messy and imprecise: Entrepreneurs make nonoptimal choices based on purposeful decision making, limited knowledge, imperfect foresight, and arational expectations (Garrison, 1986). As a result, entrepreneurs must continually revise their plans—and the subjective expectations on which those plans are based—as new information comes to light over time.

Firms and their role as vehicles for (re)combining resources. In a significant departure from equilibrium-based approaches, radical subjectivists propose an alternative approach at the firm level: that entrepreneurs exploit opportunities by creatively imagining ways to combine and continually recombine heterogeneous capital resources and that firms serve as natural vehicles for such activities. Entrepreneurs, as Lachmann (1986, p. 66) pointed out, cannot exploit opportunity "without having to invest their capital for at least a few years and thus running the risk of seeing the opportunity vanish before the capital is amortized." For this reason, radical subjectivists argue, theories of entrepreneurship must consider the capital resources that enable entrepreneurs to exploit opportunities as well as the cognitive processes that create them. Radical subjectivism focuses on how entrepreneurs draw on their subjective expectations of the future, as well as their subjective interpretations of past experience, to devise plans for combining and recombining capital resources in order to exploit their potential to generate future goods and services (Lachmann, 1956). Implicit in these resource combinations is an intricate web of capital complementarity, both within and across firms, which comprises the capital structure of the economy as a whole. This capital structure is inherently heterogeneous, deriving as it does from individual entrepreneurs' subjective knowledge and expectations (Lachmann, 1956). In the market, the divergent plans based on such knowledge and expectations collide, some succeeding while others fail, leaving behind a trail of "fossils"—material objects in which the entrepreneurs had mistakenly invested capital with the intention of realizing their plans. These objects can meet one of two fates: They can be discarded, or they can be recycled and used in ways the original entrepreneurs had not envisioned (Lachmann, 1956). Capital substitutability thus becomes crucial for entrepreneurs who, seeing their plans endlessly challenged, destroyed, or revised against a background of ceaseless and often unanticipated change, must continually revise their expectations and "reshuffle" capital resources into new combinations (Lachmann, 1956). According to radical subjectivists, it is this process of opportunity exploitation within firms, in which entrepreneurs apply their creative imaginations to continually recombine resources, that reveals "the real function of the entrepreneur" (Lachmann, 1956, p. 13).

Compared with equilibrium-based approaches, this nonequilibrium approach is more dynamic, holistic, and pragmatic. Rather than treating a firm's capital resources as a static "given," radical subjectivists treat such resources as a dynamic creation of entrepreneurs' imaginations. Instead of distinguishing sharply between entrepreneurs and resource owners, radical subjectivists see them as inseparable. Because entrepreneurs not only think about opportunities but also materialize them by investing in particular resource combinations within firms, they subject themselves to the incalculable possibility of loss over time and thus genuine uncertainty—a critical feature of entrepreneurship ignored or downplayed in equilibrium-based approaches (Foss & Klein, 2005). As opposed to discovering/exploiting such opportunities in a single period, as in Kirzner's approach, or assembling new resource combinations only occasionally and in response to preexisting opportunities, as in Schumpeter's, radical subjectivists argue that entrepreneurs exploit opportunities by combining and continually recombining capital resources within firms in real, historical time over potentially wide timeframes. And contrary to neoclassical scholars who argue that capital resources are simply another factor of production to be optimally allocated to yield consumer goods in equilibrium markets—markets that, by definition, are devoid of opportunities—radical subjectivists contend that such arguments have little to say about how entrepreneurs actually use firm resources to exploit opportunities, much less how they apply their creative imaginations to such activities.

Markets and their disequilibrating dynamics. In their most controversial departure from equilibrium-based approaches, radical subjectivists propose an alternative approach at the market level: that entrepreneurs will rarely if ever find markets in equilibrium, nor will they always act in ways that move markets toward equilibrium. Radical subjectivists argue that entrepreneurs' imaginations are not only subjective but unstable, "at all times so insubstantially founded upon data and so mutably suggested by the stream of 'news,' that is, of counter-expected or totally unthought-of events, that they can undergo complete transformation in an hour or even a moment" (Shackle, 1974, p. 42). This instability of expectations, in turn, prevents entrepreneurs from coordinating the plans they make on the basis of such shifting expectations with the plans of other entrepreneurs. Thus, an entrepreneur's plans continually change, not only of their own accord, but also in relation to other market participants' continually changing plans, which are unpredictable and hence continually take the entrepreneur by surprise. All of this unexpected change makes entrepreneurs' plans and the

actions that flow from them difficult to coordinate and their interactions relatively unstable, driving markets farther from equilibrium. These unstable interactions, which derive from the vulnerability of entrepreneurs' plans to the independent imaginations of other market participants, lead markets into genuine uncertainty and significant heterogeneity (Littlechild, 1986; Shackle, 1966). Such uncertainty and heterogeneity must be taken into account to fully understand entrepreneurship—the former because it often characterizes actions directed to "creating new economic activity," and the latter because it reflects a world of individual, organizational, and environmental heterogeneity that results in entrepreneurs' perceiving or creating different opportunities and, therefore, forming "different venture ideas and different exploitation strategies" (Davidsson, 2004, p. 22).

Though these ideas constitute the core of radical subjectivists' novel claims about market processes, their arguments are actually more nuanced, describing complex market processes where "both equilibrating and disequilibrating forces" operate (Lachmann, 1986, p. 9). On the one hand, radical subjectivists believe that market processes cannot diffuse and coordinate entrepreneurs' subjective expectations of future possibilities because each entrepreneur imagines a different future scenario at every moment in time and revises his or her plans as a consequence of such ever-shifting expectations. Consequently, markets are propelled by forces that move them farther from equilibrium (Lachmann, 1976a; Shackle, 1966). On the other hand, radical subjectivists acknowledge that market processes are able to diffuse and coordinate entrepreneurs' subjective interpretations of past experience and, therefore, are also animated by forces that move them closer to equilibrium (Lachmann, 1976a). However, even though radical subjectivists accept the existence of equilibrating forces, they focus on the disequilibrating forces that inevitably supplant them and eventually drive markets far from equilibrium (Lachmann, 1986; Shackle, 1972). In such disequilibrium conditions, Shackle emphasized markets that shift abruptly from one disequilibrium phase to another (i.e., kaleidic shifts), whereas Lachmann focused more on continually disequilibrating markets.[9]

Compared with equilibrium-based approaches that emphasize determinate outcomes, lack of or limited uncertainty, market homogeneity/homogenization, and the radical punctuation of markets in equilibrium, this nonequilibrium approach spotlights indeterminate outcomes, genuine uncertainty, increasing market heterogeneity, and the dramatic shifts experienced by markets in disequilibrium. Rather than emphasizing determinate outcomes in which markets reside in equilibrium (as in neoclassical economics), gravitate toward equilibrium (as in Kirzner), or start from and return to equilibrium (as in Schumpeter), radical subjectivists see markets as disequilibrium processes without beginning or end, and without any necessary tendency toward equilibrium (Lachmann, 1976a). This indeterminate approach offers the possibility for scholarly progress in areas blocked by equilibrium-based approaches (Meyer et al., 2005), including how entrepreneurs continually create novelty, generate variety, and establish order in disequilibrium markets. Instead of viewing the market as a timeless or single-period state in which myriad actors' plans are perfectly coordinated or are in the process of becoming perfectly coordinated (and in which actors, therefore, face little or no uncertainty in bringing off their plans), radical subjectivists view the market as a process that takes place in historical time, where plans are continually upset by unexpected events and revised in ways that do not necessarily render them more consistent (and where actors, therefore, face genuine uncertainty in implementing their plans). Despite its centrality in entrepreneurial market processes, such uncertainty (which Knight [1921] called "true uncertainty") has received almost no attention from scholars, who instead have focused on risk (which Knight [1921, p. 224] defined as "*a priori* probability") and, to a lesser extent, uncertainty (which Knight [1921, p. 225] defined as "statistical probability"). Contrary to markets' comprising homogeneous products or heterogeneous products in the process of becoming homogeneous (Kirzner, 1973), radical subjectivists argue that disequilibrium markets become increasingly heterogeneous (Shackle, 1966). This argument runs counter to received wisdom but may shed new light on findings of increasing heterogeneity in a wide range of markets and industries (Chiles, Meyer, & Hench, 2004; Hambrick, Finkelstein, Cho, & Jackson, 2005; Knott, 2003; Kraatz & Zajac, 1996; Leblebici, Salancik, Copay, & King, 1991), findings that scholars have largely interpreted using equilibrium-based theories. And in contrast with the dominant logic that markets are, from time to time, jolted from one equilibrium state to another, radical subjectivists argue that markets will occasionally experience dramatic shifts from one disequilibrium phase to another as a natural part of the ongoing disequilibrium process (Shackle, 1972). This line of reasoning, which we term *punctuated disequilibrium,* is rooted in Shackle's image of markets as kaleidic (discussed in the next section) and has received virtually no attention from scholars who unconditionally accept punctuated equilibrium theory (but see Chiles et al., 2004). To help explain why these equilibrium-based approaches have achieved such a tenacious grip on the field, we turn next to the metaphors that frame their assumptions.

Metaphors

Metaphors are figures of speech that highlight similarities between two basically dissimilar things. They are part of our everyday discourse, and they shape our understanding of who we are and what we are doing. When, to use Lakoff and Johnson's (1980) example, we say, "Time is money," we are not merely using flowery

language; we are betraying unspoken assumptions about time (it is "valuable" and "in short supply") that have practical implications for our actions (which we describe in terms of "saving," "spending," or "wasting" time). The relevance of metaphors—especially those associated with processes and actions (Dodd, 2002; Nicholson & Anderson, 2005)—for organization science (Cornelissen, 2005; Morgan, 2006), economics (Coşgel, 1996; McCloskey, 1995), and entrepreneurship (Cardon, Zietsma, Saparito, Matherne, & Davis, 2005; Pitt, 1998) has become increasingly apparent. Metaphors occupy an intermediate space between paradigms and puzzle solving (Morgan, 1980): They make abstract philosophical concepts concrete in ways that shape the questions we ask and how we try to answer them (Morgan, 1983). Conversely, metaphors can also feed back into philosophical assumptions and alter them in unexpected ways, introducing new features or giving new salience to existing ones (Cornelissen, 2005). In this section, we show how the metaphors characteristic of each of the three equilibrium-based approaches to entrepreneurship both frame and complicate their core philosophical assumptions and how the metaphor used by radical subjectivists represents a decisive break with these assumptions.

Traditional Equilibrium-Based Economic Approaches to Entrepreneurship

Neoclassical economists employ a range of mechanistic metaphors (Coşgel, 1996; Mirowski, 1989) that reflect their positivist assumptions (Lachmann, 1986). Mechanistic metaphors represent the world as a machine; their users typically seek to explain how the world works by numbering and weighing the machine's parts and discovering physical "laws" that govern their movement (Coşgel, 1996). Critics often associate neoclassical economics' most problematic features with the heuristic[10] "clockworks" metaphor (see, for example, Daneke, 1998; Lachmann, 1986; Nelson, 2004). Although neoclassical economists themselves rarely invoke this metaphor explicitly, it is implicit in the related and equally mechanistic metaphor of "equilibrium." Grounded in Newtonian physics, the equilibrium metaphor has become so pervasive in economic discourse that scholars tend to forget it *is* a metaphor. Morgan (1980, p. 612) called such concepts "overconcretized" because they are inappropriately treated as if they were ontologically real or concrete rather than metaphorical. Because the constellation of assumptions that accompany such unconscious metaphors typically goes unquestioned (Lakoff & Johnson, 1980; Morgan, 1980), the equilibrium metaphor has played a powerful role in structuring the boundaries within which economists think about entrepreneurship. For scholars who see the economy as a machine, entrepreneurs play a relatively insignificant (and quantifiable) role: They are interchangeable cogs that merely react mechanically to the impersonal forces that push and pull them. Firms operate much like old-fashioned sausage grinders: A certain quantity of raw materials enters one end, and a corresponding quantity of consumer goods emerges from the other. Markets, like well-made clocks, maintain a predictable rhythm in which any given moment is much the same as any other. Moreover, the mechanistic metaphor encourages economists to abstract these elements into functions in a mathematical equation. Such a deterministic world, as Lachmann (1986) observed, leaves no room for the exercise of genuine choice or free will.

Kirzner chafed at the restraints neoclassical metaphors impose on entrepreneurial thought and action; not surprisingly, he chose an organic metaphor (Coşgel, 1996)— "discovery"—to concretize his postpositivist assumptions about entrepreneurship. Organic metaphors represent the world in terms of an organism; their users seek to explain growth and development and to understand the organic structures that result from these processes (Pepper, 1942, p. 281). Discovery is a process metaphor that captures both the subjective thought of Kirzner's entrepreneur, who relies on superior alertness to notice and exploit opportunities, and the objective existence of those opportunities themselves, which Kirzner describes as merely waiting to be discovered (Kirzner, 1973). Thus, the entrepreneur discovers new opportunities in the same sense that Columbus was said to have discovered a "new" world: The opportunities are new only in the sense that others have not yet noticed or exploited them. Consistent with his discovery metaphor, Kirzner speaks of "the deep fog of ignorance that surrounds each and every decision made in the market" (1989, p. 11). A market characterized by such widespread ignorance—in other words, a disequilibrium market (Kirzner, 1973)—gives each alert entrepreneur scope to profit purely through arbitrage (Kirzner, 1973). And although such arbitrage requires a disequilibrium environment, as entrepreneurs continually push back the metaphorical fog they reduce the collective ignorance and move markets toward equilibrium—an elusive goal that always remains just out of reach.

Schumpeter—who, as we have seen, placed "human will" at the center of his economic theory—also reacted against these restraints, creating organic metaphors (Coşgel, 1996) to frame his critical realist assumptions. Schumpeter's best-known metaphor, "gales of creative destruction," characterizes the entrepreneurial will as a force of nature, part of an ongoing "evolutionary process" (Schumpeter, 1942, p. 82) of recurrent, violent upheavals. These upheavals are said to occur at irregular intervals and to jolt equilibrium markets into temporary disequilibrium; although these storms are violent and destructive, they are always followed by a return to a new equilibrium that has absorbed their impact (Schumpeter, 1942). Entrepreneurs—much like Prospero, the magician who conjures up the storm and

resulting shipwreck in Shakespeare's drama *The Tempest*—play a key role in orchestrating these gales of creative destruction. As Palmer (1988, p. 433) noted, Schumpeter's use of this heuristic metaphor emphasizes the "productive and dynamic properties" of capitalism and "underscores its relentless and unmanageable side," strongly differentiating it from the static, well-regulated, mechanistic world of neoclassical economics. It also emphasizes Schumpeter's assertion that capitalism is an "organic process" that "unfolds through decades or centuries" (Schumpeter, 1942, p. 83). Despite this emphasis on change and process, however, Schumpeter's organic metaphor imposes its own limitations: not the deterministic laws of physics, but the more processual "laws of nature." He is interested primarily in the "true features" and "ultimate effects" the process reveals over time, which he assumes will add up in the long run to a coherent system (Schumpeter, 1942, p. 83). We shall have more to say about these limitations below.

Kirzner's and Schumpeter's choices of heuristic metaphors reveal their divergent conceptions of entrepreneurship: Kirzner's alert entrepreneur, like the sleuth in a mystery, cleverly "discovers" hidden opportunities (Kirzner, 1973); Schumpeter's willful entrepreneur, like the hero of an adventure story, aggressively "grasps" opportunities that lie in plain sight (Schumpeter, 1942). Nevertheless, their shared use of the higher level, constitutive metaphor of organic process highlights their common philosophical ground and clearly separates their organic theories from the mechanistic theories of the neoclassical economists.[11] But the machine–organism dichotomy masks a still deeper set of philosophical assumptions that all three of these equilibrium-based approaches share. These assumptions become more evident when we place these constitutive metaphors in the framework Pepper (1942) established for them in his classic typology of four "world hypotheses" and their associated root metaphors.

According to Pepper (1942), theories can be usefully sorted by asking whether they are (a) analytic or synthetic, and (b) integrative or dispersive. Analytic theories, such as the mechanistic approach of the neoclassical economists, proceed from the top down, dissecting a broad problem into its smallest components (Pepper, 1942). Synthetic theories, on the other hand—including the organic approach of Kirzner and Schumpeter—work from the bottom up, looking for the larger patterns that emerge from collections of minute details (Pepper, 1942). It is this distinction between analysis and synthesis that accounts for many of the basic differences between the neoclassical approach and those of Kirzner and Schumpeter.

To answer the less obvious question of what—if anything—the equilibrium-based metaphors have in common, we must turn to Pepper's second pair of theoretical binaries and ask whether these metaphors and their associated theories are integrative or dispersive. Pepper (1942) classified both mechanism and organicism as integrative theories: They share an assumption that the world is an orderly, predictable system in which all the parts work together in harmony. Radical uncertainty—which Pepper (1942, p. 143) called "cosmic chance"—has no place in such a world, and integrative theorists do their best to deny or suppress it. This integrative aversion to uncertainty is most apparent in the mechanistic metaphors of neoclassical economics, but it can also be detected in the organic metaphors of Kirzner and Schumpeter. As Coşgel (1996, p. 64) pointed out, in organic systems the entrepreneur takes on the role of "the brain of a living organism." This brain is the seat of both Kirznerian alertness and Schumpeterian will. Whereas entrepreneurship scholars may welcome this dramatic transformation from the entrepreneur's status as a cog in the neoclassical machine, it implies an organized body with a head and nervous system, rather than a more flexible and dynamic organizational principle, such as, for example, the self-organizing processes of complexity theory. Bodies, like machines, maintain their own (albeit organic) form of equilibrium: homeostasis. The equilibrium-based tendency of all three economic approaches discussed above thus goes hand in hand with the common grounding of their constitutive metaphors in integrative theories.

As this brief overview suggests, constructivist theories, such as that of radical subjectivism, cannot be classified as integrative. Rather, they share many features with the theories Pepper (1942) called dispersive.[12] Far from working together harmoniously, as they do in integrative systems, the miscellaneous parts of a dispersive world constantly collide with one another as each strives to create its own subjective order while resisting others' attempts to impose their competing orders (Pepper, 1942)—much like the entrepreneurial artisan Los in William Blake's poem *Jerusalem*, who says, "I must Create a System, or be enslav'd by another mans" (Blake, 1988, p. 153). Unlike integrative theories, dispersive theories do not seek to banish radical uncertainty; instead, they embrace it (Pepper, 1942). These same features that set dispersive theories apart from integrative theories are also among the features that separate the radical subjectivist approach from the neoclassical, Kirznerian, and Schumpeterian approaches. More specifically, as we argue below, the radical subjectivist approach intersects at many points with the "stronger"[13] of Pepper's dispersive theories: contextualism. These affinities with contextualism, which are consistent with the radical subjectivists' constructivist assumptions, are reflected in the metaphor of the kaleidic process.

A New Nonequilibrium Economic Approach to Entrepreneurship

The kaleidic metaphor (Lachmann, 1976a; Shackle, 1974) is rooted in the dynamics of a kaleidoscope, in which the slightest movement causes the colored

translucent stones or glass pieces to rearrange slightly, which in turn generates a spectacular change in the pattern the viewer observes in the viewfinder. These novel patterns incessantly form and dissolve—often incrementally but sometimes abruptly—but the viewer is never able to predict the specific colors and shapes the next pattern will take.[14] And because the kaleidoscope is continuously moving through time, the pattern never has a chance to stabilize for more than a fleeting moment. It is this kind of nonlinear, rapid, continuous, and unpredictable change that the disequilibrium metaphor of the kaleidoscope uniquely allows us to see. For radical subjectivists, the changing patterns of a kaleidoscope represent the changing patterns of plans that constitute the entrepreneurial market process. Above all, as we shall see below, the kaleidic metaphor emphasizes instability: the instability of entrepreneurs' subjective expectations of an imagined future, on which they base their plans; the instability of the configurations of resources entrepreneurs continually combine and recombine in order to act on these plans and produce novel products; and the instability of markets, which entrepreneurs drive farther from equilibrium as they continually interact with other entrepreneurs and revise their plans (Lachmann, 1976a; Shackle, 1972).

The subjective entrepreneurial imagination in a kaleidic society. It is the "protean character" of human thought, "the ease with which knowledge can be acquired, or may become obsolete," that makes the world in which entrepreneurs think and act a kaleidic world (Lachmann, 1986, pp. 28-29).[15] In a kaleidic society, according to Shackle (1974), entrepreneurs' expectations are highly unstable. It is important for economists to understand such expectations because they typically inform entrepreneurs' most critical decisions, including their decisions about capital investment (Lachmann, 1986).[16] And the success of these decisions, Shackle (1970, p. 76) argued, depends to a large degree on entrepreneurs' ability to exploit the novelty—"the hitherto unknown, even the unimagined"— that the radical uncertainty of a kaleidic society makes possible.

For the contextualist, similarly, "Change and novelty are a given" (Pepper, 1942, pp. 234-235). The root metaphor of contextualism is the "historic event"—not in the conventional sense of a completed past action but rather the historical present, the event "going on *now,* the dynamic dramatic active event" (Pepper, 1942, p. 232), the site of change and novelty. The metaphor of the kaleidic process is consistent with this sense of an ongoing historical moment; indeed, the "kaleidoscope of history" metaphor is widespread in everyday discourse.[17] As with other heuristic metaphors sometimes invoked by contextualist theorists—collage, mosaic, tapestry—the emphasis is on collections of disparate parts that come together to make up larger, often ad hoc patterns (see, for example, Warren, 1990). The kaleidoscope, with its dynamic capacity to shift from moment to moment, is particularly well suited to reflect the transience and novelty of these patterns in ways that mechanistic and organic metaphors, with their system-building tendencies, cannot match.

Firms' resource (re)combination in a kaleidic society. In a kaleidic world, according to Lachmann, production plans are always in flux, and capital resources are constantly being combined and recombined in ever-changing patterns. Opportunities "appear and vanish in a kaleidic world" (Lachmann, 1986, p. 66). The kaleidic metaphor emphasizes several key features of this process: (a) the heterogeneity that radical subjectivists identify as a salient characteristic of resources in disequilibrium markets; (b) the constantly changing pattern that results from continually shuffling and reshuffling capital combinations; and (c) the "precarious nature" of structural complementarity (the relationships between the plans of different firms that do business with one another) in this heterogeneous and dynamic environment. Just as one small nudge of the kaleidoscope can radically shift the pattern of stones and their relation to one another, slight alterations in the expectations of each individual entrepreneur can have far-reaching results in revised production plans, disrupted market processes, and altered capital structures. And because, as we have seen, entrepreneurial expectations are never static, the process never ceases; the kaleidoscope is never completely at rest.

In contrast, organic processes, because they are both synthetic and integrative, work to minimize the appearance of heterogeneity. In an organic system, whenever something novel or anomalous rears its head, it is eventually assimilated into the system, much as a living organism assimilates food by digesting it. But such assimilation, like digestion, requires time. In a kaleidic world, change is so rapid and often so abrupt that novelty appears and vanishes before it can be integrated into any "higher synthesis" (Pepper, 1942), such as the goal of equilibrium toward which Kirzner's discovery process is always tending or the new equilibrium that follows Schumpeter's gales of creative destruction.

Disequilibrium market processes in a kaleidic society. It is at the market level that the fit between radical subjectivist assumptions and the kaleidic metaphor is perhaps most apparent. In a kaleidic society, according to Shackle and Lachmann, the market is an economic *process:* "As events occurring in markets are of necessity taking place in time, it appears that in order to understand what happens in a market economy, we need a conceptual framework couched in temporal terms, and that in general markets are best regarded as processes" (Lachmann, 1986, p. 2). Moreover, the market economy is not a single process but "a complex network of markets in each of which, and between which, phenomena that may be described in terms of processes are occurring"; it is "a multitude of processes and the modes of interaction between them" (Lachmann, 1986, p. 3). In such a context, as Lachmann (1986) observed, the equilibrium metaphor loses much of

its relevance: While its role as a "center of gravity" was perhaps meaningful within the context of the mechanism, if the economist is "to assess the mental acts of multitudes of consumers" (Lachmann, 1986, p. 14), a more appropriate metaphor is needed.

Shackle proposes redefining the term *equilibrium* itself: "It must be understood as the ephemeral adjustment that may from time to time come about when, by accident or the felicity of chance, affairs are given a breathing space." This role of "accident or felicity of chance" is consistent with the contextualist emphasis on "cosmic chance" discussed above. Equilibrium, in this sense, can be observed only as fleeting "pauses in the [kaleidic] cascade of history" (Shackle, 1974, pp. 46-47). These fleeting pauses represent the radical subjectivists' acknowledgment, already noted, that equilibrating forces do exist, although disequilibrating forces usually prevail. Shackle's refusal to banish equilibrium completely from the kaleidic world reflects the contextualist tenet that "categories must be so framed as not to exclude from the world any degree of order it may be found to have, nor to deny that this order may have come out of disorder and may return into disorder again" (Pepper, 1942, p. 234).[18] Shackle's metaphor of a "kaleidic society, interspersing its moments or intervals of order, assurance and beauty with sudden disintegration and a cascade into a new pattern" (Shackle, 1972, p. 76), embodies these key components of Pepper's contextualist society in a striking and dynamic image.

Because contextualist metaphors such as the kaleidic process are both synthetic and dispersive, they are better able than equilibrium-based metaphors to capture the dynamic nature of market processes. Whereas the neoclassical equilibrium metaphor treats markets as synchronic, the kaleidic metaphor treats them as diachronic, or in other words, as processes unfolding over time (Lachmann, 1986, p. 26). But unlike the organic metaphors of Kirzner and Schumpeter, which share this focus on process, the kaleidic metaphor takes events as they come, rather than attempting to integrate them into a comprehensive system.[19] It also captures the multiplicity and complexity of these markets. As its name suggests, the contextualist approach is uniquely sensitive not just to the unfolding of events in time but also to their context in all its complexity (Pepper, 1942, p. 236). The changing patterns visible through a kaleidoscope depend not only on the constantly changing relationships among the stones themselves but also on their relation to the mirrors within the kaleidoscope. In other words, not only does the pattern change but the viewer always sees more than just the stones that are objectively "there." That "more" is context, with the implications of discrete events mirrored and multiplied from various angles.

Embedded in Lachmann's case for conceptualizing the market as an economic process is a subtle endorsement of contextualist over mechanistic metaphors. Because it emphasizes "a sequence of events in time," he argues, this process view "may be germane to the issue of *history* versus *equilibrium,* the full significance of which for the methodology of economics is gradually becoming recognized" (Lachmann, 1986, p. 22; italics in original). Before turning to these methodological implications, however, we will look at the kinds of research questions that emerge when researchers view entrepreneurship through the metaphorical lenses we have just described.

Research Questions

Research questions focus and define the contested areas of a field. They are the visible tips of vast icebergs comprising the researcher's tacit philosophical assumptions and the (usually tacit) constitutive metaphors that concretize them. And just as the metaphors we use predispose us to raise certain research questions rather than others—or even render entire categories of questions unthinkable—so do the questions themselves, or, as Sarasvathy (2004, p. 707) succinctly puts it, "The questions we ask often prevent us from asking other questions." In this section, we briefly contrast the kinds of research questions that arise from the mechanistic and organic metaphors that concretize equilibrium-based assumptions with those that emerge from the nonequilibrium, contextual metaphor of the kaleidic process.

Traditional Equilibrium-Based Economic Approaches to Entrepreneurship

Neoclassical economists, in keeping with their mechanistic metaphors, form hypotheses and ask research questions aimed at measuring the rational and predictable behavior of entrepreneurs, firms, and markets in an equilibrium environment (Douglas & Shepherd, 2002; Evans & Jovanovic, 1989; Evans & Leighton, 1989; Kihlstrom & Laffont, 1979; Lucas, 1978). They ask how strongly, and in what direction, the entrepreneurial function reacts to objectively perceived opportunities and threats; what allocation of given means (e.g., resources) is optimal for achieving predetermined ends; at what rate people enter into and exit from self-employment and whether their level of risk aversion affects such stable processes; and how much mechanical manipulation of given knowledge and resources is required to ensure market equilibrium. Such questions reflect the neoclassical assumption that entrepreneurship, like physics, can be understood in terms of universal forces that operate according to predictable laws to maintain equilibrium.

Kirznerian economists, on the other hand, move away from the strict objectivism of the neoclassical approach, asking research questions that emphasize the subjective role of the alert entrepreneur in the equilibrium-seeking "discovery" process (Ferrier, Smith, & Grimm, 1999; Shane, 2000; Shane & Venkataraman, 2000; Zaheer &

Zaheer, 1997). They ask how entrepreneurs continually discover existing opportunities that open up new routes to predetermined goals, and how such actions affect rivals' competitive positions; how they actively respond to "preexisting tensions"—existing patterns of entrepreneurial mistakes characterized by overlooked opportunities (Kirzner, 1973); and how, as a consequence, they drive disequilibrium markets toward equilibrium. Implicit in such questions is Kirzner's assumption that entrepreneurship is a subjective process whose scope is, however, limited to perceiving and exploiting objectively real opportunities and whose ultimate (albeit unreachable) goal is equilibrium.

Schumpeterian economists, consistent with their equilibrium-based "gales of creative destruction" metaphor, ask research questions that focus on how entrepreneurs, firms, and markets cope with the effects of unexpected bouts of sweeping change (Lavie, 2006; Meyer, Brooks, & Goes, 1990; Shane, 1996; Tripsas, 1997). They ask, for example, how entrepreneurs respond to episodic waves of exogenous technological change; how they combine existing resources in new ways to exploit such change opportunities, and at what rate these efforts succeed or fail; and how entrepreneurs' heroic actions disrupt markets, moving them from one equilibrium state to another. Such questions reflect Schumpeter's assumption that entrepreneurship can be understood by observing how human will and exogenous forces of change interact to drive an irregular but recurring sequence of equilibrium, brief upheaval, and new equilibrium.

Despite key differences in emphasis, at a deeper level, these equilibrium-based research questions share a number of common threads: (a) a reactive or responsive human agency, (b) preexisting or "given" elements of various descriptions, and (c) determinate market outcomes or processes. Indeed, equilibrium-based approaches inherently focus researchers' attention on agents whose actions respond adaptively to the environment (Wiggins & Ruefli, 2005); means, ends, and/or opportunities that are either taken as "given" or assumed to "preexist" (Sarasvathy, Dew, Velamuri, & Venkataraman, 2003); and market outcomes and processes that are strictly determinate, in the sense that markets either exist in, begin and end in, or gravitate toward equilibrium (Lachmann, 1977). The entrepreneurship field's nearly exclusive focus on questions derived from equilibrium-based approaches has prevented scholars from asking other important questions such as those outlined below. Given the centrality in entrepreneurship of nonequilibrium phenomena such as the creation of novel ideas, products, and markets, we agree with Sarasvathy (2004, p. 716) that it is time to "reformulate our research questions in terms of our genuine concerns about the phenomenon of entrepreneurship." We believe a radical subjectivist approach can provide guidance in reformulating the questions we ask about entrepreneurial phenomena in markets that do not gravitate toward equilibrium.

A New Nonequilibrium Economic Approach to Entrepreneurship

Radical subjectivist economists ask research questions consistent with their nonequilibrium kaleidic metaphor: open-ended questions that focus on understanding subjective processes (Chiles et al., 2007; Foss & Ishikawa, 2007). They ask how entrepreneurs proactively, spontaneously, and kaleidically create new opportunities and possibilities, as well as how they blaze new paths to novel, open-ended goals; how they continually recreate capital combinations to produce a stream of new product offerings, using the firm as a vehicle for such recombinative activities; and how their imaginative thoughts and creative actions not only render the world genuinely uncertain but also punctuate disequilibrium markets and drive markets farther from equilibrium. Such questions reveal the radical subjectivists' philosophical commitment to the constructivist assumptions implicit in their metaphor of a kaleidic world, where entrepreneurship is a process fraught with unanticipated shifts, both for entrepreneurs themselves and for the scholars who study them (Shackle, 1967).

These questions contrast sharply with those generated by scholars employing equilibrium-based approaches. Instead of focusing on entrepreneurs who merely respond to changes in the environment based on given knowledge or existing knowledge acquired through prior experience, radical subjectivists ask how entrepreneurs actively create the future through forward-looking acts of the imagination. Specifically, researchers might ask: Do entrepreneurs engage in cognitive processes in which they generate a variety of imagined sequences of future events, deem some of these possible, and then winnow those to select the one most desired? If so, how does such a process of imaginative choice actually work? To what extent does it support Shackle's theory of decision making? And rather than ignoring or downplaying the importance of the firm, radical subjectivists develop questions that emphasize how the firm serves as a vehicle for creative entrepreneurial action, or what Shackle (1979, p. 140) called "action in pursuit of imagination." Specifically, researchers might ask: How do entrepreneurs apply their forward-looking imaginations to combine resources both within and across firms into new configurations to produce novel products and services, and to reshuffle such resources in an ongoing, reiterative process? How do forward-looking entrepreneurs proactively reshuffle resources to create the organizational capabilities necessary to introduce novel products? How do such entrepreneurial activities generate product variety in markets? And instead of asking questions about competitive entrepreneurial market processes that exist in, move toward, or begin and end in equilibrium, radical subjectivists question these deterministic arguments and ask how imaginative entrepreneurs perpetually push such markets away from

equilibrium. Specifically, researchers might ask: How do interactions between entrepreneurs (who pit their imaginative conjectures against those of others) disrupt markets? How do such interactions occasionally lead to dramatic market shifts? How do entrepreneurs interpret these disruptions and shifts and modify their expectations? How do these interpretations and expectations affect what happens next in an ongoing disequilibrium market process? How do entrepreneurs' interpretations and expectations of such processes evolve over time? Do such market processes exhibit order? If so, how is it achieved? Can the processes themselves create order? These kinds of questions that radical subjectivists ask have been virtually ignored in the entrepreneurship field. To begin answering them, scholars will need to rethink their methodological approaches.

Methodological Approaches

Whereas research questions identify what is at stake in the field, methodological approaches provide the tools to begin answering those questions. At the same time, the methods researchers choose influence the questions they ask. On the one hand, an entrenched commitment to a narrow range of prescribed methods encourages researchers to generate only the kinds of questions those methods can answer and to abandon (as unscientific or unanswerable) questions that require other less familiar or less prestigious methods (Gartner & Birley, 2002). In a recent study of entrepreneurship research, for example, Brush, Manolova, and Edelman (2008, p. 263) found that such distinctively entrepreneurial qualities as "newness, innovation, and creation" were ill served by the quantitative, statistical, and variance methods that currently dominate the field (see Chandler & Lyon, 2001). On the other hand, alternative methodological approaches often inspire researchers to ask original and productive questions that would not otherwise occur to them; such innovative methods are a key ingredient in the compound of "creativity/imagination, experimental and playful approaches, and . . . passionate curiosity" some entrepreneurship scholars (Hjorth, 2008, p. 329) prescribe as a tonic for the field. In this section, we explore the limitations of methods traditionally used in entrepreneurship research and suggest an alternative methodological approach better suited for empirical research into the kinds of open-ended, process-oriented questions the radical subjectivist approach raises.

Traditional Equilibrium-Based Economic Approaches to Entrepreneurship

In their empirical research, neoclassical scholars typically use multivariate regression analysis (Aquilina, Klump, & Pietrobelli, 2006; Douglas & Shepherd, 2002; Evans & Jovanovic, 1989; Evans & Leighton, 1989; Lucas, 1978) to test simple, bivariate relationships concerning such equilibrium phenomena as entrepreneurs' optimal level of start-up capital (Evans & Jovanovic, 1989) and their utility-maximizing decision of whether to be self-employed (Douglas & Shepherd, 2002). This methodological approach limits the scope of neoclassical inquiry to a fairly small domain of problems. The "persistent and largely fruitless" project of "dividing the world into entrepreneurs and nonentrepreneurs" (Sarasvathy, 2004, pp. 707-708) is representative of this class of problems: The two categories (entrepreneurs and nonentrepreneurs) are treated as exclusive and exhaustive; how they differ and what causes a subject to move from one category to the other are questions regression analysis is well suited to answer. What this methodological approach cannot adequately address, however, is the more interesting question of how entrepreneurs manage to do the novel, surprising things that make them entrepreneurs: for example, how they create new ideas, continually recombine resources, or drive markets away from equilibrium.

Entrepreneurship scholars who base their empirical research on Kirzner's assumptions about opportunity discovery and exploitation have adopted a variety of methods, including multivariate regression and hazard-rate analyses (Ferrier et al., 1999; Zaheer & Zaheer, 1997), experimental methods (Demmert & Klein, 2003), and qualitative case studies (Shane, 2000). Their task has not been easy. "Alertness" has proven a slippery concept to operationalize (Gaglio & Katz, 2001), and efforts to devise experiments to test it have been fraught with perils (Demmert & Klein, 2003). A number of studies that explicitly build on Kirzner (e.g., Busenitz, 1996; Kaish & Gilad, 1991) further muddy the waters by confounding his notion of "discovery" (Kirzner, 1973) with the neoclassical idea of "search" (Littlechild, 1986). Some of the more interesting suggestions for exploring entrepreneurial alertness and discovery have come from the cognitive stream of entrepreneurship research. Although this trend can be seen as an encouraging sign of the field's movement toward an interdisciplinary scope, the proposed research agenda associated with this stream remains rooted in positivist quantitative methods. Gaglio (2004, p. 547), for example, recommended that researchers adopt the "empirically definable and measurable" processes of mental simulation and counterfactual thinking to understand Kirznerian alertness and measure their number, kinds, anchor points, and content using an experimental or quasi-experimental approach. These proposed methods are consistent with Kirzner's ontological assumptions, mirrored in Gaglio's emphasis on "veridical perception" and "veridical interpretation"[20] (2004, p. 535); indeed, the very phrase "counterfactual thinking" implies a norm of objective "factual thinking" as its foil. In the context of a constructivist paradigm, however, such standards of objective correctness have little meaning.

Entrepreneurship researchers who invoke Schumpeter in their empirical studies typically use quantitative methods (e.g., Shane, 1996) or, to a lesser extent, mixed methods (e.g., Tripsas, 1997) to describe how individuals and firms respond to quantum changes that disrupt long periods of market calm. Often, for example, they employ time-series regression or hazard-rate analyses to capture the temporal unfolding and change rates in Schumpeter's "creative destruction" process (Giarrantana & Fosfuri, 2007; Shane, 1996; Tripsas, 1997; Wiggins & Ruefli, 2005). One of the more interesting and innovative empirical studies in the Schumpeterian tradition is Meyer et al.'s (1990) investigation of organizational responses to transitory environmental jolts. In a book chapter published separately from their article (Meyer, Goes, & Brooks, 1993), the authors explain their complex and dynamic methodological approach, which began with a quasi-experimental design but, as the industry they studied hit turbulence, shifted to historical analysis, multivariate time-series analysis, and grounded theory building. Yet even these researchers—whose work demonstrates that they understand the need for multilevel, contextual, longitudinal research in nonequilibrium settings—retain vestiges of equilibrium assumptions (e.g., "punctuated equilibrium"), mechanistic metaphors (e.g., "change mechanisms"), and variance terminology (e.g., "turning parameters into variables") that limit their ability to interpret nonequilibrium phenomena.

Although scholars using Kirznerian and Schumpeterian approaches have integrated qualitative methods into their empirical research to a limited degree, they, along with neoclassical economists, remain deeply committed to variance methods, which attempt to explain the relationships between a small set of well-defined variables situated in a nomological net, using statistical techniques to test specific predictions about the relationships (Chiles, 2003, p. 288). Shane's (1996, 2000) empirical work on both Schumpeter and Kirzner is emblematic of this problem: For his longitudinal study of technology-driven change over the course of nearly a century, Shane (1996) constructed a variance model and tested simple bivariate relationships using statistical tools, and his qualitative study (Shane, 2000) of opportunity discovery is significantly anchored on a variance-theoretic model (see figure, p. 453). Though such methods often masquerade as value free and objective (Frankfurter & McGoun, 1999), they are steeped in the positivist assumptions that go hand-in-hand with the mechanistic metaphor of market equilibrium. Because they are "outcome-driven" (Van de Ven & Engleman, 2004, p. 345), variance models are appropriate for studying equilibrium-based phenomena, but they cannot capture the salient features of events that "unfold over time," such as disequilibrium market processes. For that task, entrepreneurship research needs "event-driven" process methods[21] (Van de Ven & Engleman, 2004, p. 345), which rely predominantly (though not exclusively) on qualitative analyses, and which openly embrace nonlinearity, outliers, and researcher bias instead of seeking to eliminate them.

A New Nonequilibrium Economic Approach to Entrepreneurship

Though conceptual work building on radical subjectivism has begun to blossom in the entrepreneurship literature (Chiles et al., 2007; Dew, Velamuri, & Venkataraman, 2004; Foss & Ishikawa, 2007; Foss, Klein, Kor, & Mahoney, 2008; Kor, Mahoney, & Michael, 2007; Loasby, 2007; Chiles, Tuggle, McMullen, Bierman, & Greening, 2010; Mathews, 2010), empirical research is rare. Nonetheless, three studies warrant attention: (1) Building on radical subjectivism and employing interpretive phenomenological methods grounded in narrative and theme analysis, Berglund (2007) found that Swedish mobile Internet entrepreneurs perceived opportunities as (in part) created via their subjective expectations of an unknowable future and their continual revision of plans in a fast-paced, uncertain, turbulent market. (2) Baker and Nelson's (2005) comparative case study of resource-constrained firms in an economically depressed mining region in the United States uncovered a process by which entrepreneurs subjectively create unique services by recombining available resources for new purposes. Their constructivist approach, though not explicitly grounded in radical subjectivism, shares much in common with it, and their process methods rooted in narrative analysis and grounded theorizing are consistent with radical subjectivists' methods (T. Baker, personal communication, February 28, 2008).[22] (3) Using a longitudinal case study design that featured process methods such as narrative analysis, visual mapping, and grounded theorizing, Chiles et al. (2004) integrated radical subjectivist ideas into their complexity theory interpretation of the emergence of Branson, Missouri's musical theaters. Specifically, they found that Branson's entrepreneurs used their creative imaginations to continually generate novelty, differentiate themselves from rivals, recombine resources, and drive the market toward greater heterogeneity and farther from equilibrium. They also found evidence of punctuated disequilibrium but did not link it to radical subjectivism.

Like these studies, radical subjectivists themselves eschewed traditional variance methods in favor of novel process methods to explore how complex social phenomena unfold away from equilibrium (Lachmann, 1976a; Shackle, 1966). Lachmann (1990, p. 280) specifically recommended hermeneutics, a process approach that emphasizes interpretation, as "more congenial to the freedom of our wills and the requirements of a voluntaristic theory of action" than rival methodologies. A hermeneutic approach is ontologically compatible with a subjectivist, kaleidic view of society because it assumes that realities (plural) emerge from multiple mental concepts

grounded in individual experience and social context. Moreover, a hermeneutic approach assumes an interactive relationship between the researcher and the researched, so that results are not so much "discovered" as "created" as the research process unfolds (Butler, 1998). In this section, we suggest how researchers can apply such hermeneutic principles to begin studying entrepreneurship from a radical subjectivist perspective.

Although *hermeneutics* is often used loosely as an umbrella term for a wide range of qualitative methods, it refers more specifically to an interpretive approach[23] that explicitly invokes philosophical assumptions and principles associated with such scholars as Habermas, Gadamer, or Ricoeur. We focus on hermeneutics in this latter sense, with particular attention to its usefulness for interpreting texts—originally defined as literal narratives but subsequently extended to include the realm of human action (Ricoeur, 1971). This broadened scope has given social scientists a powerful set of techniques for interpreting the events that make up the processes they wish to understand. Scholars in a range of disciplines, including information science (Klein & Myers, 1999), consumer behavior (Arnold & Fischer, 1994), and organization science (Prasad, 2002), have explored the implications of hermeneutics for their respective fields and proposed guidelines tailored to these perspectives. Although beyond the scope of this article, a similar set of guidelines tailored to the concerns of scholars in the radical subjectivist stream of entrepreneurship research—and informed by recent work on narrative and hermeneutic approaches to both economics (e.g., Lavoie, 2007) and entrepreneurship (e.g., Hjorth & Steyaert, 2005)—would provide a useful foundation for applying hermeneutic principles to this field as well. In formulating such guidelines, scholars will need to consider the implications for entrepreneurial "stories" of such key hermeneutic concepts as the independence of a text's potential meanings from its author's intentions; the central role of language in constructing meaning; the hermeneutic circle, the site of the iterative relationship between a text and its parts that informs the meaning ascribed to the whole; hermeneutic horizons, the fluid boundaries that circumscribe the historical and cultural contexts of both text and reader; the fusion of these horizons that emerges as readers' initial expectations change through dialogue with the text; and the hermeneutics of suspicion, which encourages readers to critique the socially constructed assumptions implicit in the text (see Arnold & Fischer, 1994; Klein & Myers, 1999; Prasad, 2002).

To illustrate how a hermeneutic approach can help entrepreneurship researchers begin to answer the kinds of research questions a radical subjectivist approach raises, we turn to an example of an important entrepreneurial phenomenon that has received increasing attention in recent years: hypercompetition (D'Aveni, 1994; D'Aveni, Dagnino, & Smith, 2008; *Organization Science,* 1996; Selsky, Goes, & Babüroğlu, 2007; Wiggins & Ruefli, 2005). D'Aveni (1994, pp. 217-218) defined "hypercompetition" 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 disequilibrium environment exhibits the genuine uncertainty and high volatility (Selsky et al., 2007) characteristic of kaleidic processes. But researchers have tended to focus on such environmental factors as givens and have yet to explore adequately the key role of the entrepreneurial imagination in creating the innovations that produce hypercompetitive environments. At the firm level, according to its theorists, hypercompetition "requires firms to transform themselves in nontrivial ways, and in particular to create new and complex organizational capabilities" (Craig, 1996, p. 319), yet how they manage to do so has received little scholarly attention. And although many scholars recognize hypercompetition as a disequilibrium phenomenon (D'Aveni, 1994; Selsky et al., 2007), those who have attempted to grapple with it thus far have relied primarily on equilibrium-based theories (e.g., Craig, 1996; D'Aveni, 1994; Wiggins & Ruefli, 2005).

In the following paragraphs, we offer an alternative interpretation of the hypercompetitive Japanese "beer wars" that began in the 1980s. A key participant was Asahi Breweries, which had seen its market share dwindle from about 36% in 1949, when it was separated from Dai Nippon Breweries, to less than 10% in 1985 (Kokuryo, 1994). Under new management, Asahi introduced two radically new products that successfully targeted perceived changes in consumer taste, ushering in a period of rapid change in the industry accompanied by an unprecedented upsurge in new product development. A hermeneutic reading of these events—informed by radical subjectivist assumptions about how entrepreneurs create and continually recreate opportunity, combine and continually recombine resources, and act and interact in ways that move markets away from equilibrium—can help us understand how these dynamic processes interact in the volatile context of hypercompetition.

Hermeneutic principles encourage researchers to define a relatively narrow context and expand it as their understanding increases. In this iterative process, each new level of understanding is informed by those that precede it. Accordingly, in contrast to approaches that attempt to explain hypercompetition primarily in terms of exogenous factors such as technological or demographic change, our interpretation of hypercompetition in the Japanese beer industry begins with an effort to understand the role of the subjective entrepreneurial imagination in this process. Building on this foundation, we next expand our hermeneutic horizon to include the context of the firm level, in an attempt to understand how entrepreneurs in hypercompetitive environments act on their plans by combining and recombining resources to create new capabilities and novel products. Finally, we further

broaden the context to explore how the actions and interactions of numerous actors in the market over time help drive the disequilibrium market processes characteristic of hypercompetition.

Interpreting the subjective entrepreneurial imagination. Radical subjectivists assume that entrepreneurs create opportunities by making choices based on their subjective expectations of an imagined future. Because researchers tend to treat the uncertainty of future events as a particularly salient feature of hypercompetitive environments (D'Aveni, 1994; Selsky et al., 2007), understanding how entrepreneurs' subjective visions of such events informs their decision making is a critical step toward understanding the role of the entrepreneur in hypercompetition. To understand the events that precipitated the Japanese beer wars, we begin by looking at the subjective expectations and originative choices of two key figures: Tsutomu Murai, president of Asahi Breweries from 1982 to 1986, and his successor, Hirotaro Higuchi.

Murai oriented his plans both to his subjective interpretation of his past experience at Mazda, which he was credited with saving after the 1973 oil crisis (Kokuryo, 1994, p. 6), and to his subjective expectations for the future of Asahi— expectations that were far from universally shared by others within the firm. According to Kono and Clegg (1998, p. 158), when Murai arrived in 1982, he "discovered that there was no feeling of 'crisis' at Asahi" despite the firm's loss of market share. So "He attempted to evoke a feeling of crisis in the firm, then he created a new corporate creed, as a sign of the revolutionary changes in awareness required" (Kono & Clegg, 1998, p. 158). Murai's innovations included a new management philosophy with two goals: "giving top priority to quality" and "considering the wants and needs of our customers" (Usuba, 1989). His decision was a Shacklean "originative act" that "release[d] the future from the governance of the past" (Shackle, 1966, p. 767). By choosing to set Asahi on this divergent path, Murai created an "alternative" (Sull, 2005, p. 121) that enabled his successor, Higuchi, to introduce even more radical changes at Asahi. Rejecting the idea of competing with Asahi's chief rival, Kirin, on the dimension of size, Higuchi envisioned an alternative future for Asahi: becoming a "good company," which he subjectively defined as "one which has good product and good culture as well as being recognized by the public to have good people who are courteous and humble" (quoted in Kokuryo, 1994, p. 12). Moreover, Higuchi did not merely introduce innovation from the top down; as a matter of policy, he actively encouraged Asahi's employees at all levels to exercise their own creative imaginations—to "be dreamers that suggest whatever they feel is worth while for themselves and the corporation" (quoted in Kokuryo, 1994, p. 9). From this creative ferment emerged the forward-looking "hypothesis" that the preferences of future Japanese beer consumers were shifting toward a "new taste center" (Sugiura interview, quoted in Craig, 1996, p. 305)—a hypothesis that, as we shall see, played a crucial role in Higuchi's subsequent plans and actions and led to the creation of two new products—Asahi Draft and Super Dry—based on a subjective vision of what the younger generation of beer consumers would want over the ensuing 15 years. It was these two products—particularly Super Dry—that ushered in the hypercompetition of the beer wars.

Shackle's (1966, p. 758) "choice amongst the products of imagination" is a good description of the decisions Murai and Higuchi made at Asahi during this period. Murai envisioned a "crisis," or critical turning point, where others saw none. On one hand, he imagined the dire consequences Asahi might suffer if it persisted on its established course. On the other hand, he imagined a future in which the innovations he envisioned could create new opportunities for the firm. Among Higuchi's decisions was the choice between attempting to grow a large brewery on the model of Kirin and pursuing his subjective vision of creating a small but "good" firm. As we shall see, implementing these choices required these managers to recombine Asahi's resources on a massive scale, but by doing so they created capabilities for dealing with the rapid changes endemic to hypercompetition.[24]

Interpreting firms' resource (re)combination. Radical subjectivists assume entrepreneurs exploit opportunities by reshuffling capital combinations according to plans based on their subjective expectations. In a hypercompetitive setting, scholars have argued, one of the biggest challenges facing firms is how to recombine resources quickly enough to respond effectively to change, because the rapid pace of change that characterizes hypercompetition can easily overtake such efforts (D'Aveni, 1994). An alternative interpretation is that, as radical subjectivists assume, firms—guided not by statistical probability but by the forward-looking entrepreneurial imagination—reshuffle heterogeneous resources not simply to *respond* to change but rather proactively to *create* it.

Murai, as we have seen, oriented his plans to his subjective expectations by setting out to create a sense of crisis at Asahi, and he oriented his actions to those plans by creating a new corporate philosophy. This nudge of the kaleidoscope resulted in a cascade of new resource combinations. The new philosophy led to a radical reorganization of Asahi's human resources, creating a new corporate culture in which it was finally possible for employees to cooperate across department lines (Craig, 1996). The improved lines of communication, in turn, combined with Asahi's new twin emphases on quality and consumers' desires, allowed the R&D, production, and marketing departments to collaborate in conducting consumer taste surveys and constructing a common vocabulary for describing the characteristics consumers preferred. R&D, formerly the exclusive province of the production division, now became the joint responsibility of production and marketing, forcing the two divisions to forge a productive working relationship. A major barrier both divisions had to overcome was linguistic: As

Usuba observed, "To create a 'product plan' for a new beer, words are needed which capture and convey accurately the product concept": At Asahi, employees in the production division used precise, technical terms to describe a beer's distinctive qualities, whereas those in marketing were more comfortable with the less formal vocabulary of the consumer on the street (Usuba interview, quoted in Craig, 1996, p. 312). Years of regular meetings were required before the two divisions achieved mutual understanding. The common vocabulary that grew out of these meetings did more than simply enable Asahi's employees to communicate with one another. It allowed them (a) to combine two concepts previously considered contradictory— *koku* ("rich") and *kire* ("sharp")—to imagine an entirely new kind of beer they hypothesized would satisfy the emerging tastes of Japanese beer consumers and (b) to form the subjective expectation that consumers' preferences would move toward the *kire* end of the taste spectrum over the next 15 years (Craig, 1996). These two forward-looking hypotheses, in turn, led Asahi to recombine not only human resources but also traditional beer ingredients such as hops and malt to create innovative products never before imagined (Craig, 1996). When Higuchi took over Asahi in 1986, he acted on his subjective expectations about the future of these new products by radically reorganizing the firm's production facilities. He oriented his production plans for Super Dry in part to his own subjective assessment of its quality, "after drinking the new beer and finding it tasted good" (Craig, 1996, p. 314). Higuchi's decisions to expand Asahi's production capacity and to invest heavily in advertising the new beer (Kokuryo, 1994) had far-reaching consequences. They influenced the expectations and plans of Asahi's employees, who "realized that the company had few options if the dry beer failed, and so they had to make dry beer work" (Sull, 2005, p. 129). Asahi's plans, moreover, affected the subjective expectations—and hence the plans—of the other firms with which it did business. According to Sull (2005), the commitment of financial resources helped Asahi reverse its reputation for poor marketing and communicated its high expectations for its new product, creating marketing opportunities by making distributors more willing to stock it in larger quantities.

When a firm plans how it will combine its resources to create opportunities, it sends out "expeditions of imagination . . . to explore conceptually its possibilities of action" (Shackle, 1970, p. 29). But such actions, as Shackle observed, "require resources" (1979, p. 139). Murai and Higuchi set in motion sweeping organizational changes that allowed Asahi's managers to create the new capabilities, in the form of new configurations of human and material resources, needed to produce the novel products they imagined, and to reshuffle those resources in an ongoing, reiterative conversation with their dynamic expectations of the future. In the next section, we will see how those expectations clashed with those of other entrepreneurs through their actions and interactions in the Japanese beer market and ultimately drove the disequilibrium market processes that characterize hypercompetition.

Interpreting disequilibrium market processes. Radical subjectivists assume that the kinds of actions and interactions described above continually disrupt markets and drive them farther from equilibrium. The indeterminate outcomes, genuine uncertainty, increasing market heterogeneity, and dramatic shifts associated with disequilibrium are also salient characteristics of hypercompetition. Attempts to explain hypercompetition often emphasize external factors such as technological or social change.[25] However, a hermeneutic interpretation that begins at the individual level and iteratively expands to include the firm and market levels suggests a different possibility: that managers, rather than merely discovering preexisting opportunities in the environment, create their own opportunities by acting on their subjective expectations and reshuffling resources to create new capabilities and novel products that drive markets farther from equilibrium.

At Asahi, for example, the new corporate culture created by Murai and Higuchi provided the capability to create new concepts (*koku-kire* and dry beers), new products based on those concepts (Asahi Draft and Super Dry), and a new market for those products (a younger generation of beer drinkers with a new "taste center"). Together, these innovations put Asahi on a collision course with other Japanese beer producers. Asahi's introduction of Super Dry "fundamentally altered the competitive landscape" of the Japanese beer industry (Craig, 1996, p. 303). The divergent expectations of Asahi and its competitors (Kirin, Sapporo, and Suntory) about the future of consumers' beer tastes resulted in continual rivalrous competition that generated an unprecedented parade of novel product offerings and variety over the ensuing 6 years (see Craig, 1996, Exhibit 2, p. 306). When Asahi's managers first introduced Super Dry in March 1987, they expected sales of dry beer to continue at a high level for at least 15 years because they believed they had created a product that reflected "the long-term trend in the consumers' preferences" (Kokuryo, 1994, p. 12). The other three Japanese beer producers at first oriented their plans to their own subjective expectations that dry beer would be a short-lived fad with little impact on the market (Craig, 1996). Those expectations were based largely on their recent experience of "niche" products such as light and all-malt beers, which were considered successful if they sold a million cases a year. By fall 1988, however, after a summer in which Asahi dominated sales of the new dry beer segment, Kazuhisa Tani, the head of Kirin's Beer Division, remarked, "The market is truly different now" (quoted in Turpin, Lovelock, & Miller, 2002, p. 1). The unprecedented success of dry beer had created a "turbulent environment" (Turpin et al., 2002, p. 13) in which Asahi's competitors, catalyzed by what Kirin R&D manager

Yoshiaki Takano (quoted in Craig, 1996, p. 316) called "Super Dry shock," belatedly attempted to catch up. They began to look forward to the "after-dry" era—each with a different vision of the kind of product future consumers were likely to favor (Turpin et al., 2002, p. 13). Spurred by the success of Asahi Super Dry, Japanese brewers introduced a torrent of new beers as they jostled one another in pursuit of the next "big hit" (Craig, 1996). The four major brewers together introduced an average of 7.56 new products each year from 1985 through 1993—a tenfold increase from the 0.76 average of the preceding two decades (Craig, 1996). Kirin introduced its "Fine Malt" and "Fine Draft" beers in 1988 as "after-dry" products that were "intended to strengthen Kirin's presence in the draft segment and downplay the dry beer boom" (Turpin & Miller, 2004, p. 2). Sapporo came up with the novel concept of "Winter's Tale," a seasonal beer to be marketed only from November through February (Turpin et al., 2002). Suntory, meanwhile, focused on malts, a subsegment Suntory manager Ken Takanashi believed had been only temporarily "eclipsed" by the dry wars (Turpin & Miller, 2004, p. 5). In 1990, Kirin introduced Ichiban, "a draft beer with a 'dry taste,' but without the 'dry name'" (Chung & Turpin, 2004, p. 1).

These moves and countermoves represent the kind of unstable, disruptive market interactions Shackle's (1983, p. 6) "clever entrepreneurs" engage in when they attempt "to undermine each other's positions, . . . working against each other and trying to outdo each other." Unlike Kirznerian scholars—who assume that rivalrous competition engenders stable market interactions in which entrepreneurs' plans become increasingly coordinated, products increasingly similar, and markets ever closer to equilibrium—radical subjectivists assume that such entrepreneurial "one-ups-manship" produces unstable market interactions that discoordinate entrepreneurs' plans, make their products increasingly diverse, and move their markets farther from equilibrium. This appears to be what happened in the Japanese beer market.

This period of intense rivalry and instability was followed not by a "calm after the storm," as equilibrium-based models would predict, but by an equally intense new phase of hypercompetition. In this new phase, beginning in 1994, Japanese brewers continued to introduce new products, but their focus shifted to "cost competitiveness" (Craig, 1996). For example, Suntory introduced Hops, a product with the taste of beer but a malt content low enough to qualify as "happoshu," which is taxed at a lower rate than beer, allowing Suntory to price it more competitively (Chung & Turpin, 2004). Kirin's international alliance with Anheuser-Busch, meanwhile, allowed it to cut production costs and introduce new products such as "ice" beer to the Japanese market (Craig, 1996).

These successive phases of hypercompetition fit well with the radical subjectivist idea of disequilibrium market processes, which, as we have seen, are marked by continual disruption and increasing heterogeneity (Shackle, 1966). Craig (1996, p. 305) characterizes these phases as "rounds" of hypercompetition and, despite his Schumpeterian framing of the Japanese beer wars, acknowledges that what he identifies as the first "round" of hypercompetition was "followed not by a new equilibrium and period of stability . . . but by a subsequent hypercompetitive 'round,' equally intense but based on different competitive dimensions." From a radical subjectivist perspective, the interface between such phases of hypercompetition may be understood in the context of continual disequilibrium as examples of "punctuated disequilibrium," in which kaleidic shifts further disrupt markets already in disequilibrium, driving them not from equilibrium to disequilibrium or vice versa, but from one disequilibrium phase to another.

As the foregoing discussion of the texts and contexts of the Japanese beer wars suggests, a hermeneutic approach to radical subjectivist research in entrepreneurship looks very different from the empirical research that currently dominates the field. It diverges at virtually every point from the neoclassical approach, with its exclusive reliance on variance methods such as multivariate regression analysis. And while Kirznerian and Schumpeterian researchers typically employ quantitative and/or qualitative variance methods, they tend to do so in the same hypothetico-deductive spirit that characterizes the neoclassical approach. Hermeneutics, on the other hand, though compatible with quantitative as well as qualitative methods, emphasizes the process of constructing understanding rather than verifying hypotheses about the relationship between two or three variables. Arguably, the particular methodology a researcher employs in conjunction with a hermeneutic approach is less important than the theoretical perspective that informs it (Prasad, 2002), for it is this perspective that determines which events in the entrepreneurial process researchers identify as salient and which contexts they identify as relevant for interpreting those events. Perhaps the main difference between the equilibrium-based perspectives described earlier and the radical subjectivist perspective we suggest here is that the former see disequilibrium as a systemic anomaly that needs to be corrected, explained, and predicted, whereas the latter sees it as part of a complex, dynamic process that needs to be accepted, understood, and interpreted.

Conclusion

As we compared and contrasted the radical subjectivist approach to entrepreneurship with the three dominant equilibrium-based approaches—neoclassical, Kirznerian, and Schumpeterian economics—we found that despite important differences, the three equilibrium-based approaches share several important characteristics: (a) philosophical assumptions rooted in realism and thus biased

toward a more objectivist ontology; (b) constitutive metaphors associated with integrative theories (mechanism and organicism), which assume the world is an orderly, predictable system in which all the parts work together in harmony; (c) research questions that ask how entrepreneurs' reactions or responses to preexisting or given elements lead to determinate market outcomes or processes; and (d) methodologies strongly grounded in outcome-driven variance models. Radical subjectivism, in contrast, emphasizes the subjective nature of entrepreneurial phenomena and grounds itself in a relativist ontology. Its constitutive metaphor is associated with a dispersive theory, contextualism, which accepts change as a given and attends to both the context of events and the way they unfold over time. It raises open-ended research questions that focus on understanding subjective processes: how, for example, entrepreneurs create new opportunities, continually reshuffle capital combinations to generate new products, or drive markets farther from equilibrium through their creative actions. Such questions, as we argue above, are best served by event-driven process methods informed by hermeneutic principles.

The radical subjectivist approach, then, offers promising new ways of looking at entrepreneurship and its contexts that represent a significant advance over equilibrium-based approaches; however, ironically, its proponents, Lachmann and Shackle, remained hobbled by the language of equilibrium. Throughout this article, we too have used the terms *equilibrium, disequilibrium*, and *nonequilibrium* in a more or less traditional way, as if they referred to objective phenomena. By now the reader will have seen that we believe this is far from the case. If this is so—and if, as we argue, the metaphors we use exert a powerful influence on our thoughts and actions—why do we, like Lachmann and Shackle, continue to use this metaphor, with its distorted image of the entrepreneurial process? As tempting as it may be to jettison the equilibrium metaphor altogether, there are compelling reasons why we should not undertake this task just yet. As Hargadon and Douglas (2001) pointed out, the introduction and acceptance of innovation are always socially embedded. To gain widespread acceptance, a radically new concept must be comprehensible in terms of existing knowledge (Hargadon & Douglas, 2001): In other words, innovators, in order to succeed, must couch the strange in the language of the familiar. Even Thomas Edison, whose name has become a byword for innovation, gained acceptance for his idea of the electric light notby emphasizing its radical departure from the deeply entrenched institution of the gas lighting industry, but by designing its concrete details to fit seamlessly into the existing system (Hargadon & Douglas, 2001). On the premise that metaphors are to philosophical assumptions what concrete design details are to technological innovations, we approach our task in a similar spirit. To promote short-term understanding, we continue to clothe radical subjectivist ideas about entrepreneurship in the familiar metaphor of (dis)equilibrium. At the same time, to encourage the long-term development of these ideas, we introduce the novel metaphor of the kaleidic process.[26]

The kaleidic metaphor provides a useful starting point for imagining a world in which equilibrium is not a necessary point of reference, and it appears to resonate with entrepreneurs themselves (Chiles & Zarankin, 2006). As entrepreneurship scholars become more comfortable with the idea that equilibrium is not a universal law to which disequilibrium or nonequilibrium phenomena are the exception, it is our hope that alternative contextual metaphors will emerge to help us concretize this new kind of order and allow us not merely to critique equilibrium assumptions but to discard the equilibrium metaphor altogether. These alternative metaphors, whether they spring from the growing interest in complexity theory (Morgan, 2006) or some other, yet-untapped source, may in turn generate novel, previously unthought-of research questions that encourage researchers to apply nontraditional approaches such as hermeneutics in still more innovative ways, and contribute to a "science of the imagination" (Gartner, 2007) that helps us better understand the complex and dynamic process of entrepreneurship.

In *A Farewell to Alms*, Gregory Clark (2007) offered two views of the world's economic history: (1) a pre-industrial economy characterized by equilibrium processes that dampen differences, and (2) a modern economy characterized by dynamic processes that amplify differences and drive increasing heterogeneity. Though the equilibriumbased approaches we have described are well suited to understanding entrepreneurship in the first type of economy, radical subjectivism's nonequilibrium approach is better equipped to address the world experienced by today's entrepreneurs. Indeed, we see more and more examples of markets that are continually disrupted, increasingly diverse, and highly volatile. These markets span a wide range of sectors, including (but not limited to) pharmaceuticals, health care, entertainment, tourism, higher education, and digital, communication, and information technology. We see fewer and fewer examples of markets in or approaching equilibrium. If we are correct, the radical subjectivist approach has much to offer entrepreneurship research, both now and in the future.

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Notes

1. Shackle and Lachmann were both deeply committed to radical subjectivism. Indeed, their work shares much common ground and is often conjoined as "the Lachmann-Shackle position" (Grinder, 1977, p. 20; also see Berglund, 2007; Littlechild, 1986; Vaughn, 1994). Nonetheless, each made different contributions to radical subjectivism's core concepts of human imagination, capital resources, and disequilibrium markets. First, both embraced the role of human imagination in choice. Shackle developed a rather technical theory of decision making that abandoned the traditional approach based on assigning known probabilities to events in favor of an alternative approach rooted in imagining novel possibilities with the potential to surprise. Abstracting from the technical details of Shackle's theory, Lachmann borrowed the basic idea of imaginative choice and incorporated it in the notion of plan. By doing so, Lachmann fundamentally reinterpreted human action as oriented to plans based on an entrepreneur's subjective expectations of the future (Vaughn, 1994). In addition, both acknowledged that imagination is constrained. Shackle argued that imagination is constrained by what the decision maker deems possible in terms of compatibility with the laws of nature, the principles of human nature, and the posture of things in his or her thoughts. Lachmann offered a more detailed theoretical explanation of how institutions constrain imagination by serving as "common signposts" to which entrepreneurs orient their plans. Second, both accepted the importance of capital resources. While Shackle, on the one hand, made scattered reference in his work to capital resources (e.g., as constraints on imaginative choice, as means of production vulnerable to loss, as objects of originative thought), Lachmann, on the other, developed a detailed theory of how imaginative entrepreneurs combine and continually recombine such resources. Third, both viewed markets as disequilibrium processes. Shackle offered the "kaleidic" metaphor as a new way of understanding disequilibrium market processes, and Lachmann borrowed and incorporated this imagery in his work. Though Shackle placed more emphasis on kaleidic markets that shift abruptly from one disequilibrium phase to another, Lachmann gave more weight to their continually disequilibrating nature.

2. We specifically chose not to focus on Knightian economics (Knight, 1921)—another influential economic approach to entrepreneurship—because it largely neglects the economic system and hence market equilibrium and disequilibrium (McMullen & Shepherd, 2006).

3. In philosophy of science, Burrell and Morgan (1979, p. 2) emphasized "human nature, and, in particular, the relationship between human beings and their environment." In entrepreneurship, Stevenson and Jarillo (1990) spotlighted three main themes in entrepreneurship research: (1) individual causes, (2) organizational means, and (3) market effects. Following these works, we focus on the human nature of individual entrepreneurs embedded in organizational and market environments.

4. For example, as we note in the section on methodological approaches, many researchers who use qualitative methods (e.g., Shane, 2000) are steeped in positivist assumptions, and even such innovative organizational theorists as Meyer et al. (1990) retain vestiges of equilibrium assumptions in their empirical work.

5. To be fair, some argue that neoclassical economics' pioneers subscribed to a "limited subjectivism" rooted in the concept of marginal utility. However, as Lavoie (1994, p. 17) reminded us, "The initial move towards subjectivism was subverted in neoclassical economics," and subsequent neoclassicists gradually abandoned the use of subjectivism to analyze economic problems. Indeed, by evacuating the entrepreneur from their theories and embracing the methods of Newtonian physics (Bianchi & Henrekson, 2005), neoclassical economists adopted a strongly objectivist orientation.

6. At first glance, Kirzner might appear in his later works to move closer to the radical subjectivist position on the creative entrepreneurial imagination, expanding his definition of "alertness" to include a "motivated propensity of man to formulate an image of the future" (1985, p. 56). The context of this passage, however, is Kirzner's attempt to answer his critics by clarifying his views on the relationship between "uncertainty, discovery, and human action" (1985, p. 40). Although Kirzner adopts subjectivist language, disavows determinism, and seems to concede Lachmann's point that the future is "unknowable, though not unimaginable" (Lachmann, 1976a, p. 59), his objectivist and equilibrium-seeking assumptions resurface at the end of his argument when he insists it is possible to "dream *realistically*" and affirms his faith in "the formidable and benign *coordinative* powers of the human imagination" and the "*systematic* market forces" that "harness" it (1985, pp. 66-67). As late as 1997, Kirzner continued to emphasize distinctions between his views and the more thoroughgoing subjectivism of Lachmann (and, a fortiori, of Shackle): "Doctrinally, Lachmann was much closer to the extreme Shackelian position on choice, uncertainty, and time, and went much further than I am willing to go. . . . I believe he was trying to steer Austrian economics in a more subjectivist direction" (1997).

7. We thank a reviewer for pointing out Schumpeter's affinity with critical realism. We do, however, acknowledge that Schumpeter is inherently difficult to categorize, perhaps because of the pervasive "internal inconsistencies" in his writings, which Moura (2002) argued are the result of a "metatheoretical inconsistency" between his implicit open-systems ontology and his explicit closed-systems epistemology.

8. Schumpeterian entrepreneurs, for example, exhibit "the will to conquer" and "the will to found a private kingdom" (Schumpeter, 1934, p. 93). Witt (2002, p. 13) described this entrepreneurial capacity as "the will to demonstrate that mere possibilities can be turned into reality." We treat entrepreneurial will as a subjective aspect of Schumpeter's ontology. On the other hand, though Schumpeter evokes "creative destruction" (1942, p. 81),

mentions entrepreneurial dreams (1934, p. 93), and hints at entrepreneurial foresight (1954, p. 85), the subjectivist concepts of creativity, imagination, and inventiveness play little role in Schumpeterian entrepreneurs' thinking (see Chiles et al., 2007; Witt, 2002).

9. In his later work, Lachmann (1986) offered a two-stage process, in which early market equilibration, attributable to close imitation of innovators' products, eventually yields to market disequilibration, attributable to secondary innovations that differentiate rivals' products.

10. In their influential work on economic metaphors, Klamer and Leonard (1994) distinguished three types of metaphor used in scientific discourse: pedagogical metaphors, such as circular flow diagrams, which are teaching tools designed to help us visualize complex or abstract ideas; heuristic metaphors, such as "human capital," which "serve to catalyze our thinking" (1994, p. 32); and constitutive metaphors, such as "mechanism," which provide us with broad "conceptual schemes" for making sense of the world (1994, p. 39).

11. Interestingly, however, neither Kirzner nor Schumpeter completely abandons mechanistic metaphors at the heuristic level. In addition to the ubiquitous "equilibrium" metaphor, for example, the phrase "capitalist engine" appears in the texts of both economists (Kirzner, 1985; Schumpeter, 1942).

12. Coşgel (1996) does not suggest dispersive metaphors as potential sources for theories of entrepreneurship.

13. Pepper evaluates each of the four theories in his typology as having either "stronger" or "weaker" explanatory power. He considers mechanism and contextualism relatively "strong" compared with organicism and formism (the other dispersive theory).

14. In addition to the "derivational sense of a portal (scope) to beautiful (kalos) forms (eidos)," a kaleidoscope can be viewed in "the homophonic sense of a '*collide-oscope*,' an illuminated chamber where eye-opening *collisions* occur" (Barry, Carroll, & Hansen, 2006, p. 1104). It is in the latter sense that Lachmann described the market process as "a sequence of individual interactions, each denoting the encounter (and sometimes *collision*) of a number of plans, which, though coherent individually and reflecting the individual equilibrium of the actor, are incoherent as a group. The process would not go on otherwise" (1976b, p. 131, italics added).

15. That the kaleidoscope itself is an inert piece of equipment is rather misleading in this regard. Shackle uses the adjective *kaleidic* far more often than the noun *kaleidoscope*, often in contexts where the emphasis is on relationships (e.g., "kaleidic society" [Lachmann, 1976a, p. 60; 1986, p. 48; Shackle, 1972, p. 76]) or processes (e.g., "kaleidic movement" [Shackle, 1972, p. 78], kaleidic "pauses in the cascade of history" [Shackle, 1974, pp. 46-47], and "kaleidic shifts" [Shackle, 1967, p. 150]).

16. As Lachmann observed, traditional Austrian metaphors such as "network of means and ends" have little power to explain these processes because they refer only to abstractions: "In the real world the concrete means used and ends sought are ever changing as knowledge changes and what seemed worthwhile yesterday no longer seems so today" (Lachmann, 1986, p. 31).

17. In keeping with the contextualist tapestry metaphor, it is often applied to textiles (for example, oriental rugs or quilts) with a historic theme or connection. Alternatively, it can refer to historical events themselves. Perhaps the most prominent recent example is former British Prime Minister Tony Blair's assertion soon after the events of September 11: "The kaleidoscope has been shaken. The pieces are in flux" (Labour conference speech, October 2, 2001).

18. "Order" here is to be understood as "deterministic order" (as Pepper terms it elsewhere). As Chiles et al. (2004) demonstrated, disequilibrium processes exhibit a complex, dynamic order of their own.

19. According to Pepper (1942, p. 281), "Organicism takes time lightly or disparagingly; contextualism takes it seriously. . . . The root metaphor of organicism always does appear as a process, but it is the *integration* appearing in the process that the organicist works from, and not the *duration* of the process. When the root metaphor reaches its ultimate refinement the organicist believes that the temporal factor disappears."

20. "Veridical perception requires that the entrepreneur perceive the changing situation accurately and not be susceptible to the kinds of distortions that can arise from the uncertainty that change can produce. Veridical interpretation involves correctly determining the real causes for the change and correctly inferring their practical, social, and commercial implications while avoiding the delusion of seeing possibilities where none really exist" (Gaglio, 2004, p. 535).

21. Process methods attempt to explain how a phenomenon evolves as a result of the temporal ordering and probabilistic interaction of myriad events using primarily narrative techniques to explain the process holistically (Chiles, 2003).

22. Baker and Nelson (2005) emphasized firms, more than entrepreneurs, as agents of entrepreneurial bricolage, and pay less attention than radical subjectivists to entrepreneurs' subjective expectations. Moreover, Baker and Nelson (2005) and other entrepreneurial bricolage researchers are not primarily interested in grand economic theories such as Austrian economics, nor do they even focus on the kinds of market outcomes that interest economists (T. Baker, personal communication, February 28, 2008).

23. Although hermeneutics has been closely associated with qualitative methods, it is important to note that an interpretive approach does not necessarily dictate or rule out the use of particular methods, qualitative or quantitative. It is, rather, the *way* such methods are used that makes the approach interpretive and distinguishes it from the positivist approach favored by researchers who subscribe to

equilibrium-based assumptions (see Klein & Myer, 1999; Prasad, 2002).

24. Despite the Schumpeterian and equilibrium-based orientation of his analysis, Craig (1996) identified "vision" and "forward-looking . . . thinking" as vital components of the general capabilities firms need in order to succeed in hypercompetitive environments.

25. Craig, for example, attributes the precipitous outbreak of hypercompetition in the Japanese beer industry to a variety of "environmental trends" that created "opportunities for effective competition on new dimensions that rivals were bound to take advantage of at some point" (Craig, 1996, p. 319).

26. According to Hargadon and Douglas (2001, p. 488), "An innovation's design is robust when its arrangement of concrete details cues schemas and scripts that are immediately effective in the short term, by invoking preexisting understandings, but that do not constrain us to only those existing understandings and actions, instead allowing us to discover new ways to interact with the new ideas as our understandings evolve."

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