1042-2587

Environmental Perceptions and Scanning in the United States and India: Convergence in Entrepreneurial Information Seeking?

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Drawing on institutional theory and entrepreneurial cognition, we test the environmental perception-scanning framework in the United States and India. The results suggest that culture and transition context help explain scanning frequency, but entrepreneurs in the two countries are similar in their perceptions of strategic uncertainty in environmental sectors. Moreover, the perceptions of increased environmental change and sector importance, as conditioned by perceived information accessibility, are associated with increased scanning. Overall, our results provide important indications about perceptions and information seeking, and lend support to indications of a universal mindset of entrepreneurship.

Introduction

In the Schumpeterian tradition, entrepreneurial opportunities arise from changes emanating from political, regulatory, technological, and socio-demographic sources (Shane, 2003). Emerging markets are marked by flux in these environmental domains, and are rife with Schumpeterian opportunity, but, paradoxically, these contexts also pose considerable challenges for the entrepreneur (Bruton & Rubanik, 2002; Lau & Busenitz, 2001; McCarthy, Puffer, & Shekshnia, 1993; Peng, 2001; Puffer, McCarthy, & Naomov, 2000; Tan, 2002). Environmental change, particularly that associated with transition in emerging economies, challenges ventures to adapt as market forces beget new competitive

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requirements that require the recalibration of substantive capabilities and the development of dynamic capabilities (Yiu, Bruton, & Lu, 2005; Zahra, Sapienza, & Davidsson, 2006).

The adaptation to environmental shifts begins with environmental scanning, the search mechanism by which executives identify important events and trends outside their organizations (Farh, Hoffman, & Hegarty, 1984; Hambrick, 1982). Scanning provides the information conduit necessary for organizational decision making, structure, and maintenance (e.g. Child, 1972; DiMaggio & Powell, 1983) that aligns the organization with its operating context and enhances performance (cf. Bluedorn, Johnson, Cartwright, & Barringer, 1994). Given the importance of perceptions in directing behavior (Daft & Weick, 1984), the strategic management literature has emphasized how executives' perceptions of environmental characteristics influence scanning behavior. Conversely, although notable for an emphasis on opportunity alertness and proactiveness since Schumpeter's early treatises (e.g., 1934), the entrepreneurship literature does not adequately address what prompts entrepreneurs, who are avid information searchers (Kaish & Gilad, 1991), to scan the environment (Cooper, Folta, & Woo, 1995).

Notably, studies of scanning in the entrepreneurship literature tend to be descriptive and focused on sources of information utilized (e.g., Brush, 1992; Hartman, Tower, & Sebora, 1994; Kaish & Gilad, 1991; Kinsey, 1987; Pineda, Lerner, Miller, & Phillips, 1998; Smeltzer, Fann, & Nikolaisen, 1988). Moreover, the results from studies of managers in large organizations may not be generalizable to entrepreneurs, whose cognitions and responses appear distinctive (Baron, 1998; Busenitz & Barney, 1997; Mitchell, Smith, Morse, Seawright, Peredo, & McKenzie, 2002; Mitchell, Smith, Seawright, & Morse, 2000; Simon, Houghton, & Aquino, 2000). Therefore, research is needed that clarifies how entrepreneurs' perceptions of environmental conditions are associated with their alertness and scanning behavior, particularly in emerging contexts where differences in culture and complex, multifaceted change in institutional environments can influence perceptions of environmental factors (Bluedorn et al., 1994; Hoskisson, Hitt, Wan, & Yiu, 1999; Schneider & de Meyer, 1991). Cross-national research on entrepreneurial cognition suggests a universal, or global, culture of entrepreneurship (Mitchell et al., 2000; Mitchell et al., 2002) that underlies an entrepreneurial mindset, but links between environmental perceptions and scanning behavior have not been comprehensively investigated.

We address this deficiency in research devoted to entrepreneurs' environmental perceptions and scanning behavior by examining the inference of a global cognitive model of entrepreneurship with a cross-national sample. Specifically, using ownership and active management of an independent, growth-oriented venture as the working definition of the entrepreneur, we explore entrepreneurial scanning behavior in two dissimilar contexts, the developed, capitalistic system of the United States, and the emerging economy of India, where decision makers are confronted by uncertainty as the country undergoes transformation from pervasive government direction to a more market-oriented economy. This contextual contrast to the United States, combined with the countries' markedly different political ideology and social traditions, presents the necessary contextual conditions to test the generalizability of Western theory (DiMaggio & Powell, 1983), an effort needed in emerging economy research (Hoskisson, Eden, Lau, & Wright, 2000). Such cross-national comparisons afford insight into the potential universality of the entrepreneurial mindset, and the associated perceptions and behaviors. From a broader perspective, the study addresses what Mitchell, Busenitz, Bird, Gaglio, McMullen, Morse, & Smith (2007, p. 2) identify as the central question in entrepreneurial cognition research, "How do entrepreneurs think?" and the attendant links between their thinking and their actions. By discovering what prompts entrepreneurs in different settings to scan their environments, research may clarify issues associated with the recognition and exploitation of economic

opportunity, a defining element of entrepreneurship (Shane & Venkataraman, 2000), and related considerations such as strategic decision making and learning in the entrepreneurial firm.

Literature

Transition Context, Values, and Scanning Frequency

Hoskisson et al. (2000) identified India as one of 64 emerging economies experiencing multifaceted, often discontinuous change compared to the developed economies of the West. Although not one of 13 countries labeled a "transition economy," a formerly socialist country moving from central planning to market competition (Peng, 2003), India is, nonetheless, shifting away from a legacy of state-dominated commerce toward a market-oriented system driven by a growing middle class. These reforms have enabled a new class of entrepreneurial participation in India's economic transition (Mehta & Joshi, 2002), and these nascent, more efficient entrants have gained market share at the expense of extant entrenched companies.

Institutional theory has emerged as the dominant theoretical perspective in research on emerging economies (Wright, Filatochev, Hoskisson, & Peng, 2005) and provides a useful framework for understanding the transition underway in India, and the resulting implications for scanning behavior and strategic choice (Hitt, Ahlstrom, Dacin, Levitas, & Svobodina, 2004). According to this theoretical perspective, institutions are composed of cultural-cognitive, normative, and regulative elements. Although each emerging market is somewhat unique in its conditions, institutional environments in emerging economies differ substantially from those of more developed countries (Ahlstrom & Bruton, 2006; Newman, 2000; Peng, 2000) and may lead to differences in entrepreneurial efforts compared to the West (Peng, 2000, 2001).

Institutions can be viewed from an economic perspective (North, 1990), wherein political and legal parameters serve as constraints on the system, and from a sociological perspective, which focuses on the beliefs and traditions that are grounded in a shared culture widely held among individuals (Scott, 1992). Sociological factors may be more important in shaping the actions of individuals and firms than institutions in general (Bruton & Ahlstrom, 2003). The economic and sociological perspectives, which may be complementary (Hirsch & Lounsbury, 1997), constitute the formal and informal constraints of an institutional context that are in flux during periods of transition (North, 1990).

Since the mid-1980s, Indian entrepreneurs have been disengaging from the bureaucratic maze that directed all aspects of commerce for most of the twentieth century. State administered controls included acquiring permission to start an enterprise, to import capital goods and raw materials, and to locate in nonmunicipal areas (Mohan & Aggarwal, 1990). Such bureaucratic barriers reduced the speed and flexibility with which entrepreneurs could pursue business opportunities, and increased the time and cost associated with venture creation or expansion (Majumdar, 2004). Beginning in 1980, the Indian government adopted a new platform of market reforms that was further galvanized in 1991 by the dissolution of the Soviet Union, India's largest trading partner.

Institutional disruptions in emerging economies create "institutional voids" (Khanna & Palepu, 1997) that may force executives to perform many basic functions for themselves, including interpreting regulations and gathering market information (Khanna & Palepu, 1997). This effort is further complicated by a lack of systematic information sources and a dearth of social and political infrastructures necessary to support environmental scanning in emerging economies (Bruton & Ahlstrom, 2003; Bruton & Rubanik,

2002; Elenkov, 1997; May, Stewart, & Sweo, 2000; Peng, 2000). Evidence also indicates that institutional imperatives and lack of support during periods of transition may force individuals to rely more heavily on personal exchange relationships (Ahlstrom & Bruton, 2006; Peng & Luo, 2000; Wright et al., 2005), business groups (Yiu et al., 2005), and personal sources of information (Elenkov, 1997), which may be more time consuming to utilize, but more effective as a means of gaining access to information necessary to exploit opportunities in the transition context.

The institutional reform of India has pervasive implications for executives, but the new economic ideology also likely interacts with entrenched cultural values in influencing individual behavior (Ralston et al., 2005). Evidence indicates that political, economic, and social reforms in India are the genesis of a major shift in cultural values, including an increased focus on material success (Chhokar, 2007). In contrast to Hofstede's (1980) categorization of India as a culture of low uncertainty avoidance, recent evidence from the GLOBE Project indicates that Indians have a higher preference for uncertainty avoidance and a higher preference for future orientation than the U.S. participants (Chhokar, 2007; Hoppe & Bhaghat, 2007). Also, Indians have a lower tolerance for risk than do their counterparts in the United States (Chhokar, 2007), which is evident in the emphasis placed on face-saving in Indian culture (Ramanujan, 1989). Alternatively, entrepreneurs in the West are often noted for a tolerance of uncertainty (Sexton & Bowman, 1985) and a willingness to take risks (Stewart & Roth, 2001). Thus, we expect that the confluence of cultural values and the transition context of India will be reflected in the scanning frequency of Indian entrepreneurs. Specifically, we expect that, relative to the Americans, Indians' lower tolerance of uncertainty, discomfort with uncertainty and risk, and higher future orientation, coupled with the reconfiguration of institutions in their dynamic transition context, will affect their information seeking as follows:

Hypothesis 1: Entrepreneurs in India will scan more frequently than will entrepreneurs in the United States.

Perceived Environmental Uncertainty

Duncan (1972) described environmental uncertainty in two broad dimensions: variability and complexity. Variability describes changes taking place in the environment and has been examined as dynamism (Duncan 1972), turbulence (Tung, 1979), volatility (Bourgeois, 1985), and rate of change (Daft, Sormunen, & Parks, 1988). Complexity focuses on the number of heterogeneous elements in the environment, and has been researched under a variety of labels, including predictability (Duncan, 1972), analyzability (Daft & Weick, 1984; Perrow, 1970), effect uncertainty (Milliken, 1987), and the number and diversity of external events that are relevant to the organization (Daft et al., 1988; May et al., 2000).

Because environmental issues are often ambiguous and require interpretation for issue diagnosis, perceptions are critical in guiding decision making (Boyd, Dess, & Rasheed, 1993; Child, 1972; Daft & Weick, 1984; Dutton, Fahey, & Narayanan, 1983; Lau & Busenitz, 2001; Schneider & de Meyer, 1991). Hence, perceptions of the environment, or enacted environments (Weick, 1979), have more influence on scanning than objective environmental conditions. When individuals perceive greater uncertainty, they respond by increasing the time and resources they devote to scanning for information (Milliken, 1987).

Daft et al. (1988) proposed that perceived environmental uncertainty (the combination of perceived rate of change and complexity) would only prompt scanning if managers

deemed the respective sectors of the environment important to the success of the organization. Accordingly, Daft et al. developed a composite variable, labeled perceived strategic uncertainty (PSU), consisting of the interaction of environmental uncertainty conditioned by strategic importance ([rate of change + complexity] × importance), and concluded that this aggregate variable would be positively correlated with scanning frequency.

PSU in Different Environmental Sectors

Using the schema of task and general sectors, studies of environmental scanning have examined which environmental sectors generate the highest levels of perceived uncertainty. Task sectors include customers, competitors, suppliers/resources, and often, technology, and are notable for their direct influence on the daily operations of the firm, whereas general sectors, including sociocultural, economic, and political/legal considerations, have a more indirect influence. Consequently, Daft et al. (1988) predicted that task sectors create relatively higher levels of PSU because the task environment changes more rapidly, can be more complex, and is regarded as more important than the general environment.

Just as task sectors can change rapidly, formal institutions in the general environment can be altered through swift policy actions in emerging economies. Yet, informal institutional constraints, which reflect the underlying cultural fabric of a society, cannot be manipulated at will by administrative officials (North, 1990). Therefore, informal cultural constraints tend to be more stable and influential than formal constraints during large-scale transition (Peng & Heath, 1996). Given the uncertainty in formal institutions in emerging economies, general environment sectors associated with large-scale transition, particularly the political/legal and economic sectors, should pose higher uncertainty for executives than the sociocultural dimension of the general environment (North, 1990; Peng & Heath, 1996). Additionally, task sectors, such as customers and competitors, which are undergoing revolutionary change, are likely to create considerable uncertainty. These expectations are supported by evidence from studies of the scanning of managers in emerging economies. Elenkov (1997) found that Bulgarian managers ranked the task sectors of customer and supplier/resources, and the political/legal sector of the general environment highest in uncertainty, and May et al. (2000) discovered that Russian managers ranked the customer and competitor sectors of the task environment, and the economic sector of the general environment highest in uncertainty.

We expect uncertainty for Indian entrepreneurs to be similar to uncertainty reported in the aforementioned studies from other emerging economies, where political/legal changes and economic progress are novel, and are recreating competitive conditions. Alternatively, given that the United States is not undergoing systemic institutional restructuring, we suggest that task sectors are more likely to be the focus of U.S. entrepreneurs, an expectation consistent with Tan's (2002) findings that founders of U.S. firms placed higher importance on competitor, consumer, and supplier considerations than did founders in the People's Republic of China, who weighted the regulatory environment more important. Moreover, because of the challenges of resource acquisition in the pursuit of entrepreneurial opportunity (see Shane, 2003), which are even more pronounced in emerging economies (Peng, 2000, 2001; Wright et al., 2005; Yiu et al., 2005), we expect that resources will be of concern in both settings. Consequently, we propose:

Hypothesis 2a: In India, entrepreneurs will identify the highest levels of PSU across a mix of task and general sectors most closely associated with transition, specifically, political/legal, economic, competition, and resources.

Hypothesis 2b: In the United States, entrepreneurs will identify higher levels of PSU in task sectors, specifically, competition, customer/market, technology, and resources, than in general sectors.

Perceived Environmental Uncertainty and Scanning

Four studies in entrepreneurship have examined the frequency of entrepreneurs' scanning (Beal, 2000; Brush, 1992; McGee & Sawyerr, 2003; Mohan-Neill, 1995), but only McGee and Sawyerr (2003) explored how entrepreneurs' perceptions of the environment might influence their scanning frequency. McGee and Sawyerr (2003) concluded that Daft et al.'s (1988) composite measure of PSU was positively correlated with the scanning frequency of owner-managers of small high technology manufacturing firms in the United States. In a related study, Zahra, Neubaum, and El-Hagrassey (2002) found that comprehensive competitive analysis, which is a subset of environmental scanning, led to an increase in new venture performance, particularly under conditions of increasing strategic uncertainty, but their focus was not on examining what prompted venture owners to increase competitive analysis. Similarly, Beal (2000) found that the frequency and scope of scanning in small manufacturing firms was positively related to firms' strategic alignment with the environment, but the author did not probe how entrepreneurial perceptions of the environment influenced scanning frequency *per se*. While some researchers have elected to measure strategic uncertainty with Daft et al.'s (1988) composite PSU variable (McGee & Sawyerr, 2003; Sawyerr, 1993; Zahra et al., 2002), others have cautioned against such an approach (Milliken, 1987), and have demonstrated the limitations of drawing conclusions about scanning relying solely on the PSU composite variable, which may mask unique, important effects of the individual constructs of rate of change, complexity, and strategic importance on scanning frequency (Boyd & Fulk, 1996; May et al., 2000). Consequently, we deconstruct the PSU construct to examine its components.

Rate of Change

Only two studies have provided empirical evidence regarding the relationship between perceived rate of change in the environment and scanning frequency. Boyd and Fulk (1996) discovered that rate of change interacted with strategic importance to positively affect scanning frequency in a sample of 72 U.S. corporate vice presidents. Conversely, May et al. (2000) found no relationship between perceived rate of change in the environment and scanning frequency among managers operating in the nascent market environment of Russia in the late 1990s. Notably, however, both studies were based on samples of managers, and the results may not be generalizable to entrepreneurs, given the differences in entrepreneurs' motivations, dispositions, attitudes, and cognitions (Busenitz & Barney, 1997; Mitchell et al., 2002; Shane, 2003; Stewart & Roth, 2001).

Schumpeter (1934) defined entrepreneurs as the architects of economic disequilibria who engage in the recombinations of resources, methods, and markets that are requisite for robust economic growth and development. This proposition poses relevant questions concerning environmental turbulence. Newman (2000) suggested that individuals in emerging economies may overload on change, and that firms in these dynamic contexts may become stymied in their search for new templates and in organizational learning. Yet, Schumpeter described entrepreneurs as agents of "creative destruction" wherein entrepreneurial activity creates uncertainty by redefining industries. Alternatively, changing

environmental conditions may be the genesis of entrepreneurial opportunities because they provide wedges for entrepreneurial entry. The essence of entrepreneurship is the ability to identify previously unexploited opportunities for value creation, which ignites the entrepreneurial process. Thus, entrepreneurial activity is both cause and consequence of dynamic conditions, particularly in emerging economies (Nee & Matthews, 1996; Peng, 2001; Tan, 2002), as the entrepreneur exploits the opportunities that continuous change provides (Rosen, 1983). In fact, effectively recognizing and dealing with change is the *sine qua non* of entrepreneurship, requiring the initiative to anticipate change and to act opportunistically to influence trends and shape the environment ahead of the competition (Hamel & Prahalad, 1994; Lumpkin & Dess, 1996; Miller, 1983). To initiate this process, the entrepreneur must first identify market asymmetries that can be exploited, an activity informed by vigilant assessment of the environment through scanning. Environmental dynamism creates deficits in the information needed to understand cause–effect relationships (Carpenter & Fredrickson, 2001; Keats & Hitt, 1988), to manage resources, and to create value (Sirmon, Hitt, & Ireland, 2007). As a result, we expect that entrepreneurs are particularly sensitive to the rate of environmental change, which will be reflected in their information search behaviors.

In formulating expectations about entrepreneurial response to rate of change in different contexts, we drew on the limited number of studies that have actually compared cross-national or subcultural samples of entrepreneurs on values, perceptions, and behaviors. Collectively, the evidence from these studies demonstrates that cognitions and values are more likely to be influenced by entrepreneurial role than by culture (Blais, Toulouse, & Clement, 1990; McGrath & MacMillan, 1992; McGrath, MacMillan, & Scheinberg, 1992; McGrath, MacMillan, Yang, & Tsai, 1992; Morris & Schindehutte, 2005; Tan, 2002), which may reflect an entrepreneurial way of thinking that is universal (Mitchell et al., 2000; Mitchell et al., 2002). Given this evidence, and the aforementioned lack of any cross-national comparisons of entrepreneurial scanning, we had no *a priori* reason to propose a country difference in the following hypotheses:

> **Hyothesis 3:** Perceived increases in the rate of environmental change will be positively associated with increases in scanning frequency among Indian and U.S. entrepreneurs.

Complexity

While complexity is an integral part of perceived uncertainty, it cannot necessarily be reduced by information scanning. In fact, Boyd and Fulk (1996) found that managers in the United States actually reduced their level of scanning activity in response to an increase in perceived complexity. In Russia, May et al. (2000) found no relationship between perceptions of complexity and executives' scanning frequency, an outcome that they attributed to the demands of the transition environment.

Perrow (1970) proposed that as predictability and analyzability of environments grow more difficult, individuals tend to rely more on experience, judgment, and intuition, rather than regular information search activities. Although these propositions have not been tested in entrepreneurial samples, research in entrepreneurial cognition indicates that entrepreneurs, who inherently operate in complex situations where decision scenarios are often uncertain, time constrained and novel, are likely to rely on mental shortcuts in making decisions. Entrepreneurs appear more prone to cognitive biases and heuristics (cf. Baron, 1998; Busenitz & Barney, 1997; Simon et al., 2000), with tendencies to be overconfident (Cooper, Woo, & Dunkelberg, 1988) and to rely on less information for

decision making than managers (Busenitz & Barney, 1997). These tendencies, combined with entrepreneurs' tolerance of ambiguity and resource constraints, suggest that entrepreneurs are less likely to respond to perceived complexity by seeking additional information for more comprehensive decision making. This, combined with no expectations of differential reactions by country to complexity, led us not to expect that perceived environmental complexity would be associated with scanning in either country.

Strategic Importance and Information Accessibility

Boyd and Fulk (1996) and May et al. (2000) concluded that Daft et al.'s (1988) composite perceived strategic uncertainty variable did not stimulate scanning; rather, when PSU was deconstructed and its components tested, it was the perceived strategic importance of the environmental sectors that positively influenced scanning frequency. Decision makers, confronted with a morass of signals in the environment, tend to focus information gathering on what they believe most relevant, both in the United States (Boyd & Fulk, 1996) and in the transition economy of Russia (May et al., 2000). This phenomenon might be more pronounced in the entrepreneurial firm because entrepreneurs must address a wider range of firm issues, compared to functional managers in the larger, more structurally elaborate, differentiated firm.

Mitchell et al. (2000) proposed that entrepreneurs use expert scripts (highly developed knowledge of a specific field) to facilitate information processing in decision contexts marked by novelty, uncertainty, emotion, information overload, and time constraints. Prior related knowledge and experience serve as the basis for evaluations of importance, and not only guide the search for new information, but also facilitate its use (Cohen & Levinthal, 1990). Compared to a more comprehensive, systematic process, this scanning heuristic enables addressing uncertain, complex situations more quickly, an approach that seems particularly relevant in emerging economies where resources and expertise that were once useful under the former institutional constraints may have become scarce and/or obsolete (Peng, 2000; Wright et al., 2005; Yiu et al., 2005). Consequently, we expect that entrepreneurs will direct their scanning efforts toward environmental sectors that they deem most important for the success of the venture, but that this scanning prompt is influenced by another consideration, again particularly relevant in the entrepreneurial firm.

May et al. (2000) discovered that the effect of Russian executives' perceived strategic importance was conditioned by the perceived accessibility of information. Given that information is not without cost, both monetarily and temporally, the lack of availability of information (Masten, Hartman, & Safari, 1995), knowledge about where and how to get the information (Callahan & Cassar, 1995), and resource constraints in the small firm (Matthews & Scott, 1995; Mohan-Neill, 1995) may limit scanning. This suggests an opportunity cost of information that is pronounced in the entrepreneurial firm, and is exacerbated in emerging economies, which often have underdeveloped information infrastructures (Bruton & Ahlstrom, 2003; Bruton & Rubanik, 2002; Elenkov, 1997; May et al., 2000; Peng, 2000). From the entrepreneur's perspective, the time and costs required for the information search necessary for a comprehensive decision process might not be deemed worthwhile (Busenitz & Barney, 1997; Zahra et al., 2002). Thus, the perception of information accessibility may influence the way entrepreneurs structure attention processes (Pfeffer & Salancik, 1978), perceive their environments (Dugal & Gopalakrishnan, 2000; Weick, 1979), determine which sectors are considered strategically important to the firm, and influence how often these sectors are monitored (Boyd & Fulk, 1996; Callahan & Cassar, 1995; Dollinger, 1985; Masten et al., 1995).

The expectation of joint influences of perceptions of importance and information accessibility on scanning are also suggested in Kirzner's (1979, 1997) theory of entrepreneurial alertness, which portrays the entrepreneur as continuously receptive to information concerning opportunity in the face of uncertainty. Kaish and Gilad (1991) averred that this search is less focused than it is with managers, who are more directed and methodical than entrepreneurs in seeking out information. Kirzner (1979) distinguished between information search that is deliberate, guided by rational recognition that there are things we should know, but do not, thus prompting a search for relevant information to fill the void if cost-justified, versus information gathering that is nondeliberate, in that it is not problem directed, but occurs without being planned. Kirzner (1997) described entrepreneurial discovery as midway between deliberately produced and windfall gain in the Austrian economics tradition. In other words, Kirzner (1979) identified planned search which is relevant to an existing, known ends-means framework, that we argue would be directed by perceptions of importance, and discovery, where knowledge accrues, unplanned and spontaneously, as a result of everyday human experience that reduces ignorance about new ends-means possibilities. Discovery occurs, in part, because the relevant information is accessible.

Such a combination of directed and undirected search is consistent with effectuation theory (Sarasvathy, 2001), which emphasizes nontraditional causal reasoning in entrepreneurial decision processes, and is dependent upon the actor and his or her proactive efforts to use available means to create probabilistic outcomes. Consequently, we argue that the interaction between perceived importance and accessibility is not only a function of priorities and the exigencies of the entrepreneurial firm, but that it is characteristic of an entrepreneurial mindset that simultaneously devotes attention to factors perceived as important in maximizing extant combinations, and to identifying new combinations, or, a balance between exploitation and exploration (March, 1991). Therefore, we expect that:

Hypothesis 4: Perceived accessibility will moderate the scanning response to perceived importance such that higher levels of perceived importance will be associated with increased scanning frequency in both United States and Indian entrepreneurs when information is perceived to be readily accessible.

Methodology

Sample and Data Collection

Research teams in the United States and India simultaneously surveyed executives in their respective countries to generate the two-country sample. The Indian sampling frame was the Directory of the Confederation of Indian Industries for the Gujarat region of northern India. This region is one of the most highly industrialized states in India, accounting for 7% of the gross domestic product of India, and 7.6% of total investment in the country, placing it fourth among all Indian states for investment (Socio-Economic Review Gujarat State 2005–2006, 2006). Known as the entrepreneurial hub of India (Mehta & Joshi, 2002), Gujarat is home to more than 300,000 small-scale businesses as of December 2005, up from 125,000 at year end 2001 (Socio-Economic Review Gujarat State 2005–2006, 2006). The U.S. sampling frame was a listing of Dallas-Fort Worth, Texas businesses and the Directory of Texas Manufacturers, also used by Daft et al. (1988), which provided access to primary business owners in one of the fastest growing regions of the United States.

As part of a larger research program, we randomly selected 150 executives from single business firms in each country. This requirement, consistent with previous scanning

studies, ensures a clear, targeted operating environment. Instead of the usual mail survey, we personalized the survey approach by first contacting the executives to determine their willingness to participate, and, if willing, arranging a subsequent meeting to administer the survey. With respondents included who did not fit the definitional requirements of an entrepreneur for this study, defined later, this personalized approach resulted in response rates of approximately 72% in India and 69% in the United Sates, much better than the 10% to 12% response rate of the typical mail survey of top executives (Hambrick, Geletkanycz, & Fredrickson, 1993), an outcome that we attribute to the personalization of data collection. Where the information was available for analysis, we found no significant differences in the firm demographics of responders compared to nonresponders.

For the purposes of this study, our working definition of an entrepreneur is an individual who is a primary owner of an independent firm, and who actively participates in the daily managerial responsibilities of the venture with the express goal of growth, the most commonly used definition of an entrepreneur (Carland, Hoy, Boulton, & Carland, 1984), one that is consistent with independent entrepreneurship (Daily, McDougall, Covin, & Dalton, 2002) and has been used in recent reviews of the field (e.g., Shane, 2003; Stewart & Roth, 2001). Using these definitional criteria, we omitted 57 U.S. cases and 51 Indian cases, resulting in final useable responses from 46 entrepreneurs in the United States and 57 entrepreneurs in India, or effective response rates of 31% and 38%, respectively. The Indian sample, all male, averaged 43.7 years of age. Their firms, primarily manufacturing entities, ranged in age from just founded to 32 years of operation, and averaged 13.6 years of operation. The U.S. entrepreneurs, 41 males and four females, averaged 45.7 years of age. These ventures ranged from just founded to 51 years of operation, and averaged 12.07 years in business. As with the Indian sample, the U.S. entrepreneurial firms represented diverse industries, but the majority were manufacturing firms. Overall, the two samples are similarly matched. In the two samples combined, 71 of the firms were engaged in manufacturing, 20 in service activities, six in wholesale trade, four in construction and two in retail. Eighty-three percent of the firms generated less than $5,000,000 in annual sales, and 62% employed fewer than 50 people.

Variables and Instrumentation

We adopted the instrumentation of May et al. (2000), which followed the measurement framework of Daft et al. (1988), an approach that avoids the measurement equivalency concerns of scenario-based instrumentation outside of the country of origin, and also enables more direct comparison of findings to previous research using samples of managers. The instrument directly measures the perceived rate of change, complexity, and importance of seven environmental sectors (political/legal, competition, economic, socio-cultural, technology, customer/market, and resources) on a 5-point Likert scale. We provided definitions of rate of change as "the frequency and speed of change that you see in the trends, issues and conditions in each environmental sector," complexity as "the number and diversity of events occurring in environmental sectors outside the operations of your company," and importance as "how important do you consider each environmental sector to be in accomplishing your company's goals." In keeping with previous studies, we calculated PSU as (rate of change + complexity) × importance.

We also asked the respondents to evaluate the accessibility of each information mode (i.e., impersonal external, personal external, impersonal internal, and personal internal) on a 5-point Likert scale used by May et al. (2000) (5 = extremely accessible to 1 = not very accessible at all), resulting in a 4-item measure of total perceived accessibility, defined as "the ease with which you can acquire this information at reasonable to no cost, and the

extent to which you are readily aware of where to get the information." Thus, accessibility is an indicator of the opportunity cost of gathering information. Finally, because scanning frequency is a more valid measure of scanning than hours devoted to the task (Farh et al., 1984), we measured the frequency of scanning (ranging from "daily" to "less than once a year") across the seven environmental sectors for each of the four different information modes. In using the instrumentation validated by May et al. (2000), we first examined the cross-national validity of the scales with a pilot test using a group of Indian executives. The results indicated conceptual equivalency of the measures in India, and the reliabilities met generally accepted standards (Nunnally, 1967) at alpha of .71 and .72 for perceived accessibility in India and the United States, respectively, and .93 for scanning frequency in both countries.

Control Variables

Several demographic variables have the potential to affect perceptions and strategic activities (cf. Daft et al., 1988; Duncan, 1972; Hambrick & Mason, 1984; Wright et al., 2005). Accordingly, we collected information on the age, years of formal education, and functional career background of the respondents. We also asked the respondents to identify their firm's primary industry type (retail, wholesale, manufacturing, construction, or service), number of employees, annual revenues, how they gained ownership of the venture (founded, bought, or inherited), and the year in which their organization was founded, so that we could test for scanning differences according to these factors. In particular, the age of the venture may influence scanning (Mohan-Neill, 1995).

Results

We present means, standard deviations (SD) and correlations for all of the primary variables in Table 1. Although we provide the means for the variables, following the advice of Aiken and West (1991), we centered the variables using deviation scores

Table 1

Descriptive Statistics and Correlation Matrix

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
1. Age	13.56	10.24									
2. Sales	1.63	1.26	.19*								
3. Country[a]	.54	.50	.08	−.51***							
4. Rate of change	22.86	3.33	−.03	.02	−.04						
5. Complexity	23.39	3.60	.02	.04	.02	.31**					
6. Importance	25.12	3.33	.08	.14	−.13	.29**	.32**				
7. Strategic uncertainty	1,173.68	275.57	.06	.09	−.03	−.11	−.07	.28**			
8. Accessibility	15.24	3.19	.06	.03	.03	−.02	−.07	.12	.05		
9. Importance × accessibility	384.10	99.21	.07	.11	−.08	.03	.07	.01	−.13	−.14	
10. Scanning	20.64	4.37	−.02	−.01	.21*	.29**	.21*	.28**	−.04	.58***	.09

N = 103.
[a] Coded United States = 0, India = 1.
* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed).

to reduce correlations between component and composite scores, and to enhance the interpretability of the proposed interaction. Remaining significant intercorrelations are addressed by a hierarchical data analytic strategy, as subsequently discussed.

Model Development and Analysis

The first step in developing the model was to test individual and firm demographics for relationships with scanning frequency. None of the individual demographic variables that have been associated with scanning in samples of managers was significant, including age (India: $F = .78$, $p = .38$; United States: $F = .05$, $p = .83$) and education (India: $F = .86$, $p = .36$; United States: $F = .65$, $p = .42$). Neither was the number of employees (India: $F = .47$, $p = .62$; United States: $F = .07$, $p = .97$) or industry (India: $F = .44$, $p = .73$; United States: $F = .38$, $p = .86$) significant. Moreover, there was no significant effect by how the entrepreneur gained ownership, that is, founded, bought, or inherited (India: $F = .45$, $p = .64$; United States: $F = .10$, $p = .90$), suggesting that the focus on ownership is a useful operational definition for the study, as the role of owner apparently supersedes how ownership was attained in terms of scanning frequency. In the interest of model parsimony, we excluded these demographic variables from subsequent analysis except for the age and size of the firm, the latter as measured by sales, which we include as control variables in the analysis to ensure no resource dependence effects in the results.

We used paired samples tests, reported in Table 2, to test for differences in PSU across environmental sectors, and hierarchical regression analysis to test the remaining hypotheses, in order to examine the unique effects of each of the environmental perception variables on scanning frequency as the variable entered the analysis. Also, the technique allows for the partialling of variance with correlated predictors, wherein each equation presents the unique variance explained, thereby eliminating the effects of multicollinearity and maximizing the stability of the estimates (Cohen, Cohen, West, & Aiken, 2003). Diagnostics indicated high tolerance levels for the predictors and acceptable variance inflation factors (cf. Hays, 1994).

In constructing the hierarchy of analysis, we pooled the samples from the two countries, entered the aforementioned firm size and age controls, and then entered a dummy representing country into the analysis, an approach that is preferable to separate analyses of the two samples (Jaccard, Turrisi, & Wan, 1990). Subsequent variable entry of each component of PSU was guided by the theoretical framework of May et al. (2000) and the requirements of our study. As a result, we introduced the three components of PSU (rate of change, complexity, and importance), the composite PSU variable and perceived accessibility, in that order. Finally, we entered a multiplicative interaction term for the proposed interaction after the main effects (Cohen et al., 2003; Jaccard et al., 1990). An examination of data distributions and residuals indicated no violations of regression assumptions. The regression equations are provided in Table 3.

Hypothesis Tests

Hypothesis 1, which predicted that Indian entrepreneurs would scan more frequently than their U.S. counterparts, was supported. Hypotheses 2a and 2b predicted that a mix of task and general sectors associated with the transition in India (i.e., political/legal, economic, competition, and resources) would be ranked highest in PSU among Indian entrepreneurs, and that only task sectors (i.e., competition, customer/market, technology, and resources) would be predominant in PSU among U.S. entrepreneurs. As shown in Table 2, which also includes the sector rankings of prior studies, these expectations were

Table 2

Comparative Rankings of Environmental Sectors[a] by Perceived Strategic Uncertainty Across Studies and Countries

United States Daft et al. (1988)	Nigeria Sawyerr (1993)	Bulgaria Elenkov (1997)	Russia May et al. (2000)	United States Entrepreneurs in this study	Mean[bc]	SD	India Entrepreneurs in this study	Mean[bc]	SD
(T) Customer	(T) Customer	(G) Political/legal	(T) Customer	(T) Technology	35.08	12.31	(T) Competitor	33.07	8.24
(G) Economic	(G) Economic	(T) Suppliers	(G) Economic	(T) Customer	29.60	8.71	(T) Technology	30.35	9.24
(T) Competitor	(G) Political/legal	(T) Customer	(T) Competitor	(T) Competitor	29.30	9.54	(T) Customer	28.93	7.48
(T) Technology	(T) Competitor	(G) Economic	(G) Political/legal	(G) Economic	24.49	7.97	(G) Economic	23.23	7.83
(G) Regulatory	(T) Sources of resources	(T) Competitor/industry	(G) Technology	(T) Resources	23.17	8.97	(T) Resources	21.67	9.59
(G) Sociocultural	(G) Technology	(T) Technology	(T) Resources	(G) Political/legal	19.74	11.28	(G) Political/legal	21.09	11.38
	(G) Sociocultural	(G) Sociocultural	(G) Sociocultural	(G) Sociocultural	14.64	8.09	(G) Sociocultural	10.91	8.84

[a] G = general environment, T = task environment. Sector rankings for each study based on mean scores for PSU.
[b] PSU (perceived strategic uncertainty) scores per sector for this study.
[c] Significance of differences based on paired sample tests between mean PSU scores per sector within each country. All significant ($p < .05$) except: United States: political/legal and resources, competitors and customers, economic and resources; India: political/legal and sociocultural, political/legal and resources, economic and resources, technology and customers.

Table 3

Hierarchical Regression Results

	Equations[a]							
Predictors	1	2	3	4	5	6	7	8
Constant	20.87	21.36	11.07	10.18	7.66	.31	−6.36	19.38
Age	−.01	−.07	−.07	−.07	−.07	−.06	−.08	−.05
Sales 1	−.00	−.24	−.22	−.21	−.20	−.18	−.06	−.04
Sales 2	−.01	−.22	−.29	−.28	−.26	−.25	−.08	−.08
Sales 3	−.04	−.16	−.17	−.16	−.18	−.17	−.09	−.08
Sales 4	−.03	−.08	−.09	−.08	−.08	−.07	1.00	.08
Country		.31**	.32**	.31**	.33**	.33**	.23**	.24**
Rate of change			.33***	.30**	.23*	.34	.19*	.20*
Complexity				.06	−.02	.10	.13	.11
Importance					.24*	.48	.13	−.73
Strategic uncertainty						−.40[b]		
Accessibility							.61***	−.59
Importance × accessibility								1.54*
R^2	0.00	0.06*	0.17***	0.17***	0.21***	0.21***	0.53***	0.55***
ΔR^2	0.00	0.06[c]	0.11[c]	0.00	0.04[c]	0.00	0.32[c]	.02[c]

[a] All estimates are standardized coefficients except the constant.
[b] Nonsignificant interaction terms removed from subsequent equations (cf. Aiken and West, 1991).
[c] Signifies incremental significance as suggested by guidelines of Hosmer and Lemeshow (1989).
$p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

partially supported, as three of the task sectors (technology, customers, and competitors) were ranked highest in uncertainty in the United States, but the general sectors of political/legal and economic were not ranked high in PSU by Indian entrepreneurs. Instead, the Indian entrepreneurs also ranked task sectors (competitors, technology, and customers) highest in PSU. Although we had no *a priori* basis for predicting differences across sectors by country, a *post hoc* examination indicated that Indian entrepreneurs had significantly higher PSU in the competitor sector ($F = 4.68$, $p = .03$), and the U.S. entrepreneurs had significantly higher PSU in the sociocultural ($F = 4.94$, $p = .03$) and technology ($F = 5.01$, $p = .03$) sectors.

Next, we examined the effects of environmental perceptions on scanning. Hypothesis 3 predicted that entrepreneurs in both countries would scan more often when they perceived high rates of change in the environment, an expectation that was supported. Finally, Hypothesis 4 conveyed the expectation that information availability would condition the scanning response to perceived importance in both countries. This prediction was also supported. Following the guidelines of Aiken and West (1991), we probed the significant interaction between accessibility and importance by examining the simple slopes at high, medium and low levels of accessibility. The results showed that scanning is significantly higher among entrepreneurs in the United States and India when accessibility is high ($B = .37$, $p = .01$) compared to the mean ($B = .12$, $p = .17$) or low levels ($B = .14$, $p = .19$) of accessibility. Thus, perceived accessibility of information conditions the effect of importance on scanning, such that when entrepreneurs in both countries perceive information to be important and believe the information is accessible, they will scan more frequently. Moreover, as expected, the results also indicate that Daft et al. (1988)

composite PSU variable does not prompt entrepreneurs to scan. Finally, *post hoc* analyses using interaction terms that included country indicated no country differences in the effects of rate of change ($B = .92$, $p = .19$), complexity ($B = .22$, $p = .77$), importance ($B = .04$, $p = .96$), accessibility ($B = -.57$, $p = .14$), or the interaction between accessibility and importance ($B = -.57$, $p = .14$) on scanning frequency, as expected.

Discussion

Initially, one might expect that the differences in cultures, institutional environments and market conditions of the United States and India would result in different scanning behaviors among entrepreneurs. The results, however, indicate that Indian and U.S. entrepreneurs are more alike than they are different, suggesting a convergence in the cognition and scanning behavior of entrepreneurs. We follow with a discussion of these findings and their implications, and conclude with suggestions for additional inquiry.

As expected, entrepreneurs in India scan more frequently than U.S. entrepreneurs, likely due to a complex combination of culture and operating circumstances. In other words, due to more discomfort with uncertainty, higher risk avoidance and a greater future orientation, relative to the United States, Indian entrepreneurs may be more culturally disposed to greater information seeking. Alternatively, they may be reacting to the increased turbulence associated with the upheaval from institutional transition where fast, disruptive change creates uncertainty for decision makers. Although institutional theory predicts that culture will be more important in guiding behavior during times of large-scale transition (North, 1990; Peng & Heath, 1996). Tan (2002) concluded that context is more important than culture in determining entrepreneurial behavior. Although we did not directly measure, and, thus, are unable to decipher the relative influence of culture versus context in this study, the results imply that entrepreneurs in India are responding to their environment in a way that reflects Indian cultural proclivities, as well as a congruence between perceptions of the environment and objective conditions, a consistency that enhances performance (Bourgeois, 1985; Dess & Keats, 1987).

We did not expect that the sector PSU rankings would be so similar across the two groups, with the same task sectors (customers, competitors, and technology) ranked among the top three sectors for PSU in both countries. Moreover, entrepreneurs ranked the remaining four environmental sectors (economic, resources, political/legal, and sociocultural) in the same order in both countries. Notably, the resource sector did not produce nearly as much uncertainty as the technology sector for either group, an unexpected result. While there were striking similarities in the entrepreneurs' rankings of sector uncertainty, there were some differences in the relative magnitude of PSU in sectors between the countries. Indian entrepreneurs perceive significantly greater PSU in competition, and significantly less PSU in the technology and sociocultural sectors of the environment. We attribute this to the market reforms of India that have increased market competition, perhaps in novel ways, compared to the United States, where relatively minimal government intervention has produced more unfettered competition, a situation more familiar to U.S. entrepreneurs. Also, general sectors tend to change more slowly than task factors (Daft et al., 1988), which, combined with the immediacy of dealing with the task sectors during transition, might explain why the Indian entrepreneurs appear less concerned with sociocultural trends than their U.S. counterparts. Interestingly, technology was rated significantly higher in PSU by U.S. entrepreneurs. Global competitive gains by technology ventures in India have been supported by a national policy aimed at boosting national technology advantages, resulting in substantial gains in technology related industries (see Uttam, 2005). Nonetheless, the United States remains the more substantial source of

innovation, perhaps explaining why U.S. entrepreneurs reported higher PSU in the technology sector.

The sector rankings for PSU across countries echo Beal's (2000) finding of the importance of the customer, competitor, and supplier/resources sectors in the strategic alignment between the entrepreneurial firm and its environment. Moreover, the convergence in sector rankings in two highly divergent operating contexts suggests consensus regarding sources of uncertainty for entrepreneurial firms. Notably, the entrepreneurs' PSU sector rankings differed from those previously reported of managers, in both emerging and developed economies, suggesting that entrepreneurs have a distinctive cognitive lens through which to appraise environmental uncertainty irrespective of specific economic context. This supports the proposition of a universal entrepreneurial mindset (Mitchell et al., 2002; Mitchell et al., 2007).

None of the characteristics of the entrepreneurs or their firms was linked to their scanning activity, although we note small cell sizes for some of the demographics. Particularly interesting is the indication that the frequency of scanning is not influenced by the age or size of the venture. This conclusion, which suggests that resource dependency predictions about the liability of newness and smallness are not of consequence in perception-scanning relationships, contrasts with that of Mohan-Neill (1995), who discovered that executives in older, larger firms scan more frequently than do those in younger, smaller ventures. Perhaps the difference lies in measurement. We measured organizational age as a continuous variable from the date of founding or securing ownership, while Mohan-Neill (1995) categorized the sample, which was not exclusively composed of venture owners, into firms less than five years old, and firms older than 20 years, and compared the differences across several sources of environmental information.

Entrepreneurs in both countries responded to perceptions of increasing environmental change by scanning more frequently. In India, a relatively volatile environment where resources, ownership, and decision authority are shifting to the private sector, entrepreneurs would be expected to respond to such change that affords rich sources of entrepreneurial opportunity, but also poses issues for venture survival. Although the rate of environmental change is not as punctuated in the United States, entrepreneurs there appear to be sensitive to the pace of change and scan to assess the unfolding consequences of volatility for their ventures. This behavior, combined with the indication that complexity did not prompt scanning, seems consistent with the entrepreneurial phenomenon wherein dealing with change and uncertainty is the hallmark of entrepreneurial activity. As with the sector rankings of PSU, this evidence suggests a common entrepreneurial alertness to change across operating environments, and provides a sharp contrast to inferences about managers, who have demonstrated a relative disregard for the perceived rate of environmental change, even in a dynamic context like Russia (May et al., 2000).

Pineda et al. (1998) discovered that small business owner-managers increased information search activity when the relative importance placed on a particular decision increased, but their study focused on specific decision areas, not perceptions of environmental sector importance *per se*. Our results show that, consistently across the countries, entrepreneurs respond to perceptions that the information is important to the success of their venture by scanning only when they perceive a low opportunity cost associated with gathering the information for strategy processes. This result, indicating the predominant role of accessibility in entrepreneurial scanning, implies support for Kirzner's (1997) characterization of entrepreneurial alertness as a combination of premeditated information search and nondeliberate discovery. The synergistic combination of deliberate search for exploitation and creative exploration for new possibilities suggests a heuristic for scanning that reflects an effort to effectively manage resources, specifically, information and

the time and costs associated with securing it. This heuristic enables quick decision making in the face of complex, uncertain conditions, and provides preliminary evidence supporting the recent proposition of Sirmon et al. (2007) concerning a link between managing resources and creating value in response to a given environmental context.

Overall, there appear to be no meaningful differences in the environmental perception-scanning associations in the two groups of entrepreneurs. This conclusion is consistent with accumulating evidence that entrepreneurs across countries appear to be more similar than they are different (Blais et al., 1990; McGrath & MacMillan, 1992; McGrath et al., 1992; Mitchell et al., 2000; Mitchell et al., 2002; Morris & Schindehutte, 2005; Tan, 2002). These studies concluded that there appear to be universal attitudes and behaviors characteristic of entrepreneurs that transcend cultures and contexts. Mitchell et al. (2002) discovered that entrepreneurs possess cognitive scripts pertaining to information about the environment and the sequentially ordered knowledge that affects firm performance in a given situation. Similarly, entrepreneurs in our study demonstrated a common cognitive script about the relative importance of information to their firms' performance and the accessibility of that information in directing their scanning. These cognitive scripts seem particularly useful for entrepreneurs in emerging markets where they must quickly navigate disruptive change in the institutional landscape. Thus, although there may be important differences in entrepreneurial phenomena across contexts, we advocate consideration of potential similarities associated with the entrepreneurial role that may influence decision making processes and strategic behaviors. We conclude by proffering ideas for research that addresses some of these issues.

Suggestions for Future Inquiry

Our results have broad implications for theory extension, but we focus the following discussion on two primary areas of investigation. First, the limitations of the study, primarily those inherent in a survey methodology, should be considered in evaluating the results. We attempted to overcome the lack of control by sampling frame choice, by emphasizing conceptual equivalency in measurement with clear definitions of the constructs, and by procedural consistency in the two countries. The samples represented substantial variation in individuals, firms, and operating contexts, diversity that may cancel chance imbalances (Isaac & Michael, 1990) and reduce method variance (Mitchell, 1985). Here, a Harman's single-factor test of the primary variables in the study did not produce a single or general factor that explained the majority of covariance in predictor and criterion variables, alleviating concerns about common method variance (Podsakoff & Organ, 1986).

Additionally, we focused on existing entrepreneurs, and note a potential survivor bias, but there may be significant differences in the prompts, scope and form of scanning in established ventures compared to pre-founding and venture launch activities, particularly in innovative ventures with a goal of exploiting first mover advantages. Thus, we recommend research that examines the scanning activities of nascent entrepreneurs during venture founding processes. For instance, in pre-venture founding activities, not only may the scanning be more intensive to evaluate the perceived entrepreneurial opportunity, but the focus of this surveillance may also differ. In transition contexts, resource availability, particularly capital, is a predominant concern for venture creation (Ahlstrom & Bruton, 2006; Bruton & Ahlstrom, 2003), and there is a need to examine the inferences about perception-scanning links in other emerging contexts. Future research might also directly measure culture and objective environmental conditions to determine the correspondence between objective conditions and perceptions, and the relative influence of culture and transition on scanning phenomena.

Beyond evaluating our results, there are considerations for extending knowledge of the antecedents, processes and outcomes associated with entrepreneurial scanning. Given that entrepreneurs and their ventures differ from managers and their firms, a host of individual, firm, and environmental characteristics may hold important insights for entrepreneurial scanning. For example, due to space limitations, we did not investigate entrepreneurs' choice of information source, which may have important implications in different decision making scenarios. Network relationships can have a significant direct impact on firm performance (Geletkanycz & Hambrick, 1997), particularly in emerging economies (Chen, 1999; Lau & Busentiz, 2001; Peng & Heath, 1996; Shen & Lau, 2000), where entrepreneurial networking is characterized by its "urgency, intensity, enthusiasm and impact" (Peng, 2000, p. 184). Comparative investigations of information gathering in these networks, and through other boundary spanning activities in developed and emerging markets, may be instructive for more robust theory concerning entrepreneurial alertness.

Daft and Weick (1984) posited that key decision makers' interpretation of environmental problems or opportunities influences the majority of organizational outcomes, suggesting research questions that center on connections between scanned information, interpretation, action and outcomes. Individual information processing is governed by cognitive schema (Dutton & Jackson, 1987; Jackson & Dutton, 1988), and different interpretations lead to scanning differences (Lang, Calantone, & Gudmundson, 1997) and alternative decision processes and behaviors (Dutton et al., 1983; Dutton & Jackson, 1987; Nutt, 1984). Entrepreneurial experience, confidence, and domain familiarity influence information search (Cooper et al., 1995), and perhaps, interpretation. Research in entrepreneurial cognition holds promise for clarifying the relationships among perceptions, strategic priorities, and action in the venture, particularly how and why entrepreneurs differ from managers in alertness to opportunity. Examining these processes with cross-national research efforts that compare and contrast entrepreneurial behavior and performance outcomes in a variety of market contexts holds promise for enriching and extending theory. Above all, it is important that entrepreneurship be encouraged, particularly in emerging economies, as effective development may ultimately depend upon entrepreneurial agents to lift stagnant economies from the inefficiencies of the past to create more viable futures.

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