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National Culture and Entrepreneurship: A Review of Behavioral Research

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Conceptual arguments for the association between cultural characteristics and entrepreneurship have existed for decades but only in the last 10 years has this relationship been the focus of empirical scrutiny. In this article, we review and synthesize the findings of 21 empirical studies that examine the association between national cultural characteristics and aggregate measures of entrepreneurship, individual characteristics of entrepreneurs, and aspects of corporate entrepreneurship. The study concedes that a predominant number of empirical studies have used Hofstede's conceptualization of national culture and that other domains have been underdeveloped. A preliminary model that integrates past findings is extended. The review highlights fruitful avenues for future research.

How does national culture relate to levels of entrepreneurial activity? This question is motivated by the observations of economists (e.g., Schumpeter, 1934), sociologists (e.g., Weber, 1930), and psychologists (e.g., McClelland, 1961) that countries differ in levels of entrepreneurial activity. Entrepreneurial activities are considered an important source of technological innovation (Schumpeter, 1934) and economic growth (Birley, 1987). Therefore, understanding the influence of national culture on entrepreneurship is of considerable theoretical and practical value. In this article, we review past empirical research on the association between national culture and entrepreneurship and suggest some future directions for scholarly inquiry.

Culture is defined as a set of shared values, beliefs, and expected behaviors (e.g., Herbig, 1994; Hofstede, 1980a). Deeply embedded, unconscious, and even irrational shared values shape political institutions as well as social and technical systems, all of which simultaneously reflect and reinforce values and beliefs. Cultural values indicate the degree to which a society considers entrepreneurial behaviors, such as risk taking and independent thinking, to be desirable. Cultures that value and reward such behavior promote a propensity to develop and introduce radical innovation, whereas cultures that reinforce conformity, group interests, and control over the future are not likely to show risk-taking and entrepreneurial behavior (e.g., Herbig & Miller, 1992; Herbig, 1994; Hofstede, 1980a). Therefore, it is important to understand the behavioral research on national culture and its potential influence on entrepreneurship.

We use a broad definition of entrepreneurship for our review of the literature. Entrepreneurship includes new-venture creation that is growth oriented and generates employment, as well as small businesses and micro-enterprises that may provide self-employment but not much employment growth (Bhide, 2000). Entrepreneurship exists

also within organizations in the form of corporate venturing, strategic renewal, and spin-offs for ideas generated within organizations (Guth & Ginsberg, 1990; Zahra & Dess, 2001). We believe that an inclusive definition of entrepreneurship helps capture a broader interpretation of the effects of culture.

METHOD FOR STUDY SELECTION

Our review focuses on the empirical rather than the extensive conceptual literature on national culture. We searched ABI-Inform/Proquest for references to culture and entrepreneurship. This database contains references for the majority of journals featuring scholarly research in business since 1971. It includes the entire collections of journals that most frequently publish entrepreneurship and cross-cultural behavioral research (e.g., *Academy of Management Journal*, *Entrepreneurship Theory and Practice*, *Journal of Business Venturing*, *Journal of International Business Studies*, and *Strategic Management Journal*, among others). In addition, we examined the reference sections of all empirical studies and many conceptual articles to identify articles not revealed by the electronic search.

We include only studies published in journals or book chapters, not working papers or conference presentations. We exclude those single-country or multi-country studies that do not directly address the issue of a culture's consequences for entrepreneurship. Our search of the literature yielded 21 empirical studies that have focused on the association between national culture and entrepreneurship. Of these, two were published in the 1980s, fourteen were published in the 1990s, and five were published in 2000. This trend indicates a growing interest in this important but complex topic.

REVIEW OF BEHAVIORAL RESEARCH

Our review of the literature revealed three broad research streams that address national culture and entrepreneurship. The first research stream focuses on the impact of national culture on the aggregate measures of entrepreneurship such as national innovative output or new businesses created. The second stream addresses the association between national culture and the characteristics of individual entrepreneurs. Within this stream of literature, researchers have examined the values, beliefs, motivations, and cognitions of entrepreneurs across cultures. The third stream explores the impact of national culture on corporate entrepreneurship. We review each stream, providing a summary of key research questions addressed, the research methods used, and the findings these studies reported.

Most behavioral studies we reviewed have been skewed toward cultural values and entrepreneurial behavior that stems from Hofstede's research. Hofstede's work has proven valuable in that it presents a concise taxonomy of significant cultural dimensions for explaining the behavioral preferences of people in business organizations. Frequently studied dimensions of culture in the context of entrepreneurship are individualism-collectivism, uncertainty avoidance, power-distance, and masculinity-femininity (Hofstede, 1980a). The definitions of these four dimensions and their expected associations with levels of entrepreneurship have been extensively covered in the literature (e.g., Herbig, 1994; Hofstede, 1980a, b; Shane, 1992). In general, researchers have hypothesized that entrepreneurship is facilitated by cultures that are high in individualism, low in uncertainty avoidance, low in power-distance, and high in masculinity. *Ceteris paribus*, the greater the cultural distance from this ideal type, the lower the average individual and aggregate levels of entrepreneurship.

National Culture and Aggregate Measures of Entrepreneurship

Only a few empirical studies have examined the association between dimensions of culture and entrepreneurship at the national or regional level (Davidsson, 1995; Davidsson & Wiklund, 1997; Shane, 1992, 1993). These studies are summarized in Table 1. Shane (1992) examined the association between Hofstede's dimensions of individualism and power-distance and national rates of innovation, concluding that individualism is positively associated and power-distance is negatively associated with national innovation rates, even after adjusting for the influence of national wealth.

Shane (1993) also investigated the association between four of Hofstede's (1980a, b) dimensions described previously and the national rates of innovation in 1975 and 1980. Shane found that uncertainty avoidance was negatively associated with innovation in both time periods. Individualism was found to be positively associated with innovation in 1975 but not in 1980. Similarly, power-distance was found to be negatively associated with innovation for the earlier period but not the later one. Masculinity had no significant association with innovation at the national level. These results indicate that the association between specific cultural dimensions (as captured by Hofstede) is not temporally stable.

Limited empirical research has also explored the association between culture and new firm-formation rates (Davidsson, 1995; Davidsson & Wiklund, 1997). Davidsson and Wiklund (1997) have proposed that cultures that promote a higher need for autonomy, a need for achievement (McClelland, 1961), and self-efficacy (Bandura, 1986) will have higher firm-formation rates, because these values reward a strong work ethic and risk taking. Davidsson (1995) examined six regions in Sweden with distinct structural characteristics, reporting systematic variation in values and beliefs as well as entrepreneurial intentions and new firm-formation rates. A complex interaction appears to exist among structural characteristics, entrepreneurial values, new firm-formation rates, entrepreneurial intentions, and beliefs concerning entrepreneurship.

Davidsson and Wiklund (1997) attempted to control for structural factors (small firm density; population size, density, and growth rate; unemployment level and trend, public expenditures) by creating three matched pairs of geographic regions. Unfortunately, in an attempt to control for the influence of industry and economic structure, these authors may have created pairs with little cultural variation. Consequently, only marginal effects were found for the influence of culture on new firm-formation rates. In no case were any of the values or beliefs (e.g., change orientation, need for achievement, need for autonomy, etc.) consistently associated with new firm-formation rates.

The preceding discussion shows that some evidence exists that broad cultural characteristics are associated with national levels of entrepreneurship. Specifically, high individualism, low uncertainty avoidance and high power-distance have all been found to be associated with national rates of innovation. These relationships are not consistent over time, however (Shane, 1993), and have not been systematically found with aggregate indicators of entrepreneurship (Davidsson & Wiklund, 1997).

The samples, data sources, and dimensions of culture measured in this group of studies are summarized in Table 1. Two major limitations are apparent in this research. The first is the problem of small sample sizes. The nature of survey-based data collection restricts analyses to modest sample sizes. This limitation raises some methodological issues. In these studies, analyses are limited to simple rank orderings, correlations, and regression models involving a limited set of predictors. Consequently, analyses of the influence of the various cultural dimensions have been conducted independently, even when constructs were expected to co-vary. Due to sample size limitations, these interaction effects among cultural values have not been systematically addressed (Shane, 1992, 1993).

Table 1

Studies of National Culture and Entrepreneurship at the Country Level

Authors	Research Question	Measures of National Culture	Sample	Data Source(s)	Major Findings
Shane (1992)	What is the association between national culture and national rates of innovation?	Individualism, power-distance (Hofstede, 1980)	33 countries	Cultural values based on Hofstede's (1980) results and compared with per capita rates of innovation in 1967, 1971, 1976, and 1980.	National rates of innovation are positively correlated with individualism and power distance.
Shane (1993)	What effect does national culture have on national rates of innovation?	Individualism, power-distance, uncertainty avoidance, and masculinity (Hofstede, 1980)	33 countries	Cultural values based upon Hofstede's (1980) results and compared with per capita rates of innovation in 1975 and 1980	National rates of innovation are positively correlated with individualism and negatively correlated with uncertainty avoidance and power distance.
Davidsson (1995)	What is the interaction among structural characteristics, culture, beliefs concerning entrepreneurship, and entrepreneurial intentions.?	<ul style="list-style-type: none"> An entrepreneurial values index that includes dimensions such as achievement motivation, locus of control, need for autonomy, and change orientation. Entrepreneurial beliefs: Societal contribution, financial payoff, perceived risk, social status. 	2,200 individuals; 6 regions in Sweden	Survey (cultural values measured by survey)	Scores on the entrepreneurial values index are correlated with regional rates of new-firm formation.
Davidsson & Wiklund (1995)	Controlling for economic/structural factors, is culture associated with differences in rates of new-firm formation?	<ul style="list-style-type: none"> Values: Change orientation, need for achievement, need for autonomy, Jane-mentality competitiveness Beliefs: Societal contribution, financial payoff, perceived risk, social status, workload, know-how. 	1,313 individuals; 6 regions in Sweden	Survey (cultural values measured by survey)	Cultural values and beliefs have a small but statistically significant association with regional rates of new-firm formation.

A potential solution to this problem is the identification of culturally homogeneous regions that are smaller in geographic scope than countries. Davidsson (1995) and Davidsson and Wiklund (1997) used this approach in a single country (Sweden). It is reasonable to expect that countries can be segregated into culturally homogeneous regions. It is unclear, however, whether broad cultural characterizations such as Hofstede's (1980b) can sufficiently capture the variance in culturally heterogeneous regions in a single country.

A second important issue is that the interactions between culture, institutional structure, and entrepreneurship have not been subjected to statistical analysis (Davidsson 1995; Davidsson & Wiklund, 1997). It is generally assumed that a complex relationship exists among cultural values, social institutions, industry characteristics, and behavioral outcomes such as entrepreneurship. Researchers observe that the relationships among these elements are complex and endogenous (e.g., Davidsson, 1995; Herbig, 1994); that is, social institutions, industry characteristics, and behaviors reflect and reinforce a culture's values. For example, differences in culture influence a society's legal system. Of greatest relevance here is the legal protection of intellectual property rights, which will influence investments in innovation. Similarly, it has been suggested that patterns of values and beliefs (i.e., culture) will vary systematically with variations in industrial structure. For example, countries or regions with greater industrial concentration would be expected to positively influence the presence of values supportive of entrepreneurship by increasing the legitimacy of this type of activity (Davidsson, 1995; Etzioni, 1987). Unfortunately, unless larger samples can be identified, the interdependencies between values and entrepreneurship remain indiscernible. Furthermore, such a study would require a more cogent conceptualization of anticipated interactions among culture, institutional context, and behaviors than has been presented to date.

A conceptual rationale for the relationship between national culture and national firm-formation rates is that culture influences the supportiveness of the environment so as to make it more legitimate to form a new business (Etzioni, 1987). It may also be the case that culture influences the psychological characteristics of individuals within the population so as to create a larger supply of potential entrepreneurs (Davidsson & Wiklund, 1997). Thus, culture is important because it influences the motives, values, and beliefs of individuals. This perspective has inspired the second stream of research, which we review next.

National Culture and Individual Characteristics

Several studies have examined questions concerning the relationship between national culture and entrepreneurial characteristics and traits. These studies are summarized in Table 2. These studies have focused on a diverse set of entrepreneurial motives (Baum et al., 1993; Scheinberg & MacMillan, 1988; Shane, Kolvareid, & Westhead, 1991), values and beliefs (McGrath, MacMillan, Yang, & Tsai, 1992b; McGrath & MacMillan, 1992; Mueller & Thomas, 2000; Thomas & Mueller, 2000), and cognitions (Mitchell, Smith, Seawright, & Morse, 2000).

The majority of these studies take one of two distinct approaches to the question of culture's consequences for entrepreneurship. The first group addresses the research question of whether national culture is associated with different entrepreneurial characteristics (Mitchell et al., 2000; Mueller & Thomas, 2000; Scheinberg & MacMillan, 1988; Shane et al., 1991; Thomas & Mueller, 2000). The second group seeks to determine whether entrepreneurs are similar to or different from their nonentrepreneurial counterparts across cultures (Baum et al., 1993; McGrath et al., 1992b; McGrath & MacMillan, 1992).

Several studies have also examined entrepreneurial characteristics such as motives,

Table 2
Studies of National Culture and Characteristics of Entrepreneurs

Authors	Research Question	Measures of National Culture	Sample	Data Source(s)	Major Findings
Scheinberg & MacMillan (1988)	Are the motives of entrepreneurs to start a business similar or different across cultures?	Nationality	1,402 entrepreneurs; 11 countries	Survey (culture measured in survey)	Indicators of motives represent six dimensions: need for approval, perceived instrumentality of wealth, communitarianism, need for personal development, need for independence, and need for escape. The importance of these motives varies systematically across cultures.
Shane, Kolvereid, & Westhead (1991)	Are there significant differences across culture and/or gender in reasons given for business start-up?	Nationality	597 entrepreneurs; 3 countries	Survey (culture inferred from nationality)	Reasons for starting a business reflect four underlying dimensions: recognition of achievement; independence from others, learning and development, and roles. The emphasis on each of these reasons varies systematically across countries.
McGrath & MacMillan (1992)	Across cultures, do entrepreneurs share common perceptions about nonentrepreneurs?	Three cultural regions: Anglo, Chinese, Nordic	770 entrepreneurs; 14 countries	Survey (culture measured in survey)	Across diverse cultures there is a common set of perceptions held by entrepreneurs about nonentrepreneurs.
McGrath et al. (1992b)	Is there a set of values that are held by entrepreneurs versus nonentrepreneurs across cultures?	Power-distance, individualism, uncertainty avoidance, masculinity-femininity	1,217 entrepreneurs; 1206 non entrepreneurs; 9 countries	Survey (culture measured in survey)	Across cultures, entrepreneurs score high in power-distance, individualism, and masculinity and low in uncertainty avoidance.

Table 2

Continued

Authors	Research Question	Measures of National Culture	Sample	Data Source(s)	Major Findings
Baum et al. (1993)	Does national culture moderate the association between individual needs and chosen work role (entrepreneur versus manager)?	Nationality	370 Israeli and U.S. entrepreneurs and managers	Survey (culture inferred from nationality)	Israeli entrepreneurs report higher need for achievement and affiliation and lower need for dominance than do Israeli managers. U.S. entrepreneurs do not differ significantly from U.S. managers.
Mitchell, Smith, Seawright, & Morse (2000)	Does the presence of cognitive scripts associated with venture creation decisions vary significantly across cultures?	Individualism, power-distance	753 entrepreneurs and non-entrepreneurs; 7 countries	Survey (culture inferred from nationality)	Individualism and power-distance are associated with entrepreneurial cognitive scripts and the venture creation decisions.
Mueller & Thomas (2000)	Do entrepreneurial traits vary systematically across cultures?	Individualism, uncertainty avoidance	1,790 students; 9 countries	Survey (culture inferred from nationality)	Cultures high in individualism are correlated with an internal locus of control. Cultures high in individualism and low in uncertainty avoidance rate highest on a measure of entrepreneurial orientation (innovativeness plus internal locus of control).
Thomas & Mueller (2000)	How prevalent are four key entrepreneurial traits (innovativeness, locus of control, risk taking, energy) across cultures?	Power-distance, uncertainty avoidance, individualism, masculinity	1,790 students; 9 countries	Survey (culture inferred from nationality)	Entrepreneurial traits (internal locus of control, risk taking, high energy levels) decrease as cultural distance from the U.S. increases.

values, and beliefs across cultures (Mitchell et al., 2000; Mueller & Thomas, 2000; Scheinberg & MacMillan, 1988; Shane et al., 1991; Thomas & Mueller, 2000). Scheinberg and MacMillan (1988), for example, report the results of a survey of entrepreneurs in 11 countries. These authors found that entrepreneurial motives factor into six dimensions: need for approval, perceived instrumentality of wealth, communitarianism, need for personal development, need for independence, and need for escape. They found also that entrepreneurs from each country emphasize each dimension differently. When grouped by the motives of “money as means” and communitarianism, three distinct clusters of countries were apparent. Scoring high on the money as means and low on the communitarian motives were respondents from Australia, Great Britain, the United States, and Finland. Scoring low on both dimensions were Sweden, Denmark, and Norway. Scoring high on both dimensions were China, Italy, Puerto Rico, and Portugal.

Shane et al. (1991) also studied the reasons given for start-ups across samples of entrepreneurs from three countries. This research identified four factors (need for independence, recognition, learning, and roles) that were consistent with those reported by Scheinberg and MacMillan (1988). Also, Shane et al. (1991) reported significant national differences for the first three of these motives. In both of these studies, the reported motives appeared to be consistent with other conceptualizations of national cultural values. For example, the motives reported by Scheinberg and MacMillan (1988) have conceptual overlaps with Hofstede’s dimensions of masculinity and collectivism.

Rather than examining motives for starting a business, Thomas and Mueller (2000) asked whether traits associated with entrepreneurship differ systematically with cultural distance from the United States. The participants in this study were students of business, economics, and engineering across nine countries. The traits examined were innovativeness, locus of control, risk-taking propensity, and energy level. Thomas and Mueller (2000) found that as cultural distance increased, internal locus of control, risk taking, and energy levels decreased.

In a second study, Mueller and Thomas (2000) explored the association between two entrepreneurial traits (locus of control and innovativeness) and Hofstede’s dimensions of individualism and uncertainty avoidance. They found that internal locus of control was dominant in individualistic cultures and that innovativeness and internal locus of control were prevalent in cultures high in individualism and low in uncertainty avoidance. These findings led Mueller and Thomas (2000) to conclude that cultures high in individualism and uncertainty avoidance are supportive of entrepreneurship.

Mitchell et al. (2000) examined whether cognitive scripts associated with venture-creation decisions vary across cultures. The cognitive scripts included knowledge arrangements (e.g., knowledge concerning protectable ideas and access to resources), willingness (e.g., tolerance for commitment and motivation), and ability (e.g., situational knowledge, opportunity recognition), and were associated with the venture-creation decision both individually and in interaction with one another. Furthermore, Mitchell et al. (2000) provided preliminary evidence that these scripts were themselves associated with cultural values of individualism and power-distance. The direction of association, however, was not consistent across specific scripts. For example, Mitchell et al. (2000) reported that a script describing knowledge of appropriable ideas was negatively associated with individualism and positively associated with power-distance. In contrast, a script describing knowledge of access to resources was positively associated with individualism and negatively associated with power-distance. Both findings represented cognitive scripts that were supportive of entrepreneurship.

Overall, these studies identify a number of entrepreneurial characteristics that appear to be influenced consistently by national culture. In particular, there is strong evidence that self-reported reasons for starting a business vary systematically with variations in culture along dimensions of individualism, power-distance, and masculinity (Scheinberg

& MacMillan, 1988; Shane et al., 1991). Some evidence exists that cultural values such as individualism and uncertainty avoidance are significantly related to traits such as internal locus of control, risk taking, and innovativeness, which are associated with entrepreneurship (Mueller & Thomas, 2000; Thomas & Mueller, 2000). Finally, evidence exists that cognitive scripts that are related to entrepreneurship are also associated with individualism and power-distance (Mitchell et al., 2000), suggesting a complex interaction between cognition and cultural values. The studies reviewed in this section provide two key insights into the role of national culture. The first implication is that in the context of entrepreneurship, theories of motivation are culture bound in that different cultures emphasize different motivational needs. The second implication is that national culture is likely to influence national or regional rates of entrepreneurship by creating a larger supply of potential entrepreneurs.

An important methodological issue is the difficulty of determining to what extent statements of motives are simply restatements of cultural values; that is, studies that investigate broad motivational needs are likely to find cultural differences because these are closely related to the underlying cultural values (Baum et al., 1993; Scheinberg & MacMillan, 1988; Shane et al., 1991). Needs such as communitarianism, independence, and autonomy all reflect the dimension of individualism-collectivism. Similarly, achievement, recognition, and the instrumentality of wealth reflect the dimension of masculinity-femininity. This reflects a considerable methodological difficulty of making empirical distinctions between national culture and individual behavior. As Davidsson and Wiklund (1997) note, from some perspectives, culture *is* behavior. The problem of mono-method bias is particularly salient in this context in that surveys are used to obtain data on both culture and behaviors (Scheinberg & MacMillan, 1988; McGrath & MacMillan, 1992; McGrath et al., 1992a, b).

Comparison of Characteristics between Entrepreneurs and Nonentrepreneurs

In a second group of studies, researchers investigated whether entrepreneurs differed from nonentrepreneurs regardless of culture (Baum et al., 1993; McGrath et al., 1992b; McGrath & MacMillan, 1992). This research extended earlier studies within cultures that compared the characteristics of entrepreneurs and nonentrepreneurs (e.g., Brockhaus, 1980). Baum et al. (1993) compared the motivational needs of entrepreneurs and managers in the United States and Israel, noting that regardless of role, Israelis reported higher need for affiliation, lower need for achievement, higher need for both autonomy and dominance, reflecting expected national cultural differences. In comparison to U.S. entrepreneurs, Israeli entrepreneurs had higher scores on both need for affiliation and need for autonomy. Baum et al. reported also that need differences between the two groups were small within the United States but were amplified in Israel, where managers exhibited a higher need for dominance and a lower need for affiliation than their entrepreneurial counterparts.

McGrath et al. (1992b) compared entrepreneurs to nonentrepreneurs in 13 countries. They reported that entrepreneurs were consistently higher in power-distance, individualism, and masculinity and lower in uncertainty avoidance when compared to career professionals. McGrath and MacMillan (1992) examined whether entrepreneurs across cultures viewed nonentrepreneurs as an "out-group." These authors identified value statements that distinguish entrepreneurs from nonentrepreneurs regardless of national culture. For example, in comparison to others, entrepreneurs believed in taking the initiative and controlling their own destiny, were willing to take charge and direct others, and were positively oriented toward adaptation and change.

This second group of studies highlighted some consistent differences between en-

Table 3

Studies of National Culture and Corporate Entrepreneurship

Authors	Research Question	Measures of National Culture	Sample	Data Source(s)	Major Findings
Kogut & Singh (1988)	Is national culture associated with choice of entry mode?	Cultural distance, uncertainty avoidance	506 entry decisions; 13 countries	Secondary data (cultural values based on Hofstede's indices)	Cultural distance is positively associated with a preference for joint ventures over acquisitions. Uncertainty avoidance is positively associated with preference for joint ventures and greenfield sites over acquisitions as an entry mode.
Morris, Davis & Allen (1994)	Does individualism influence corporate entrepreneurship consistently across cultures?	Individualism	502 firms: USA = 252; South Africa = 225; Portugal = 25	Survey (cultural values measured in survey)	There is an inverted-U-shaped association between individualism and corporate entrepreneurship in U.S. and South African organizations.
Shane (1994a)	Is there a relationship between national culture and preferences for innovation-championing strategies?	Individualism, uncertainty avoidance; power-distance	937 managers; 24 countries	Survey (cultural values based on Hofstede's indices)	Low individualism is associated with championing styles that appeal to group norms; uncertainty avoidance is related to championing that adheres to rules and procedures; high power-distance is related to championing styles that emphasize monitoring strategies.
Shane (1994b)	Is national culture associated with choice of entry mode?	Power-distance (indicating trust)	1977 n = 86 industries (2-digit SIC); 1982 n = 166 industries; 52 countries	Secondary data (cultural values based on Hofstede's indices)	Trust, indicated by low power-distance is associated with a preference for licensing versus foreign direct investment.

Table 3

Continued

Authors	Research Question	Measures of National Culture	Sample	Data Source(s)	Major Findings
Shane (1995)	What is the relationship between uncertainty acceptance and four innovation-championing roles?	Uncertainty avoidance	4,405 individuals, born in 68 countries, who work in 43 organizations.	Survey (cultural values based on Hofstede's indices)	Individuals in cultures low in uncertainty avoidance indicate a preference for the network facilitator, transformational leader, organizational maverick, and organizational buffer types of championing roles.
Shane & Venkataraman (1996)	How does national culture influence preferences for renegade championing versus rational championing strategies?	Individualism, uncertainty avoidance; power-distance	3,020 individuals; 28 countries	Survey (cultural values measured in survey)	Managers in cultures high in individualism prefer renegade championing styles; those high in uncertainty avoidance prefer a rational championing style; those high in power-distance prefer a renegade style.
Geletkanycz (1997)	Is culture associated with top executive commitment to the strategy status quo?	Individualism, uncertainty avoidance, power-distance, long-term orientation	1,540 executives; 20 countries	Survey (cultural values based on Hofstede's indices)	Uncertainty avoidance and power-distance are negatively associated with commitment to leadership and strategy status quo. Individualism is positively associated with commitment to the leadership and strategy status quo.
Makino & Neupert (2000)	Is national culture associated with choice of entry mode?	Power-distance; uncertainty avoidance	289 firms (158 Japanese, 131 American)	Secondary (cultural values based on Hofstede's indices)	The propensity to choose joint ventures versus wholly owned subsidiaries varies significantly between Japanese and U.S. firms, reflecting differences in power-distance and uncertainty avoidance.
Steensma, Marino, & Weaver (2000)	Are cultural values associated with a preference for cooperative strategies?	Individualism, masculinity, uncertainty avoidance	1846; 7 countries	Survey (cultural values based on Hofstede's indices)	Entrepreneurs from countries scoring high on femininity, collectivism, and uncertainty avoidance favor cooperative strategies.

trepreneurs and nonentrepreneurs across cultures. First, entrepreneurs as a group appeared to be similar in their beliefs, and this finding appeared to be consistent across cultures. Second, when compared with nonentrepreneurs, entrepreneurs appeared to report higher scores in power-distance, individualism, and masculinity and lower scores in uncertainty avoidance (McGrath et al., 1992b). Note, however, that Baum et al.'s (1993) results were inconsistent with the findings McGrath and colleagues reported (McGrath et al., 1992b; McGrath & MacMillan, 1992). There was some evidence of an interaction between entrepreneurial values and national culture. More studies comparing entrepreneurs to nonentrepreneurs across cultures are needed to enable us to draw firm conclusions about a national culture's influence on entrepreneurial characteristics.

National Culture and Corporate Entrepreneurship

The literature on national culture and corporate entrepreneurship is more diverse and less integrated than studies reviewed earlier. A single empirical study has directly addressed this important question (Morris, Davis, & Allen, 1993). Several studies, however, examine the association between national culture and outcomes such as choice of entry mode (e.g., Kogut & Singh, 1988; Makino & Neupert, 2000; Shane, 1994a), preferences regarding innovation-championing styles (Shane, 1994b, 1995; Shane & Venkataraman, 1996), preferences for cooperative strategies (Steensma, Marino, & Weaver, 2000), and executive commitment to the strategic status quo (Geletkanycz, 1997). Each of these outcomes has significance for our understanding of corporate entrepreneurship. In this section we briefly review these studies, which are summarized in Table 3.

Several studies have examined the association between culture and entry mode into new markets, an important entrepreneurial process (Kogut & Singh, 1988; Makino & Neupert, 2000; Shane, 1994a). These studies have compared entry modes with different monitoring requirements and hypothesized that culture influences the choice of mode through perceived transaction costs. They indicate that firms in uncertainty-avoiding countries will prefer joint ventures over acquisitions because of their lower uncertainty concerning management of this organizational type (Kogut & Singh, 1988). Firms in low power-distance (high trust) cultures have less need for monitoring and therefore prefer licensing to direct investment (Shane, 1994b).

Japanese firms (moderate power-distance, high uncertainty avoidance) usually prefer wholly owned subsidiaries to joint ventures, whereas American firms (low power-distance, low uncertainty avoidance) prefer joint ventures to wholly owned subsidiaries (Makino & Neupert, 2000). Note some discrepancies in the results between the Makino and Neupert study and the findings reported by Kogut and Singh (1988), probably reflecting idiosyncrasies of the two countries in the Makino and Neupert study. Similarly, Steensma et al. (2000) examine how culture influences preference for cooperative strategies. They find that managers in feminine countries that are also low in individualism and high in uncertainty avoidance exhibit a preference for cooperative strategies. This finding is consistent with Kogut and Singh and has particular relevance to the promotion of cooperative strategies in more masculine, individualistic, and uncertainty-accepting cultures (including the United States). Entry into new markets, including venturing abroad, is an important strategic choice in the context of corporate entrepreneurship (e.g., Guth & Ginsberg, 1990). Therefore, the need exists for more research that utilizes multivariate techniques to examine the complex interrelationships among dimensions of culture and the various choices of entry mode while controlling for institutional and economic factors.

Studies have explored preferences regarding innovation-championing styles (e.g., Shane, 1994b; Shane, 1995; Shane & Venkataraman, 1996). These studies provide

consistent evidence that Hofstede's cultural dimensions are associated with championing styles. Uncertainty-accepting countries exhibit a preference for organizational mavericks and buffers in contrast to uncertainty-avoiding cultures, which prefer champions who adhere to organizational rules and procedures and have a rational style (Shane, 1994b, 1995; Shane & Venkataraman, 1996). In collectivist cultures, champions who appeal to group norms are preferred (Shane, 1994b), whereas in individualistic cultures renegade champions are preferred (Shane & Venkataraman, 1996). Innovation champions are important for speeding the product-development process and therefore represent one mechanism by which organizations may increase innovation and therefore entrepreneurship (Burgelman, 1983).

Geletkanycz (1997) examines the association between culture and top executive commitment to the strategic status quo. This question is of interest in the present context in that strategic renewal is an important component of corporate entrepreneurship (Zahra, Ireland, Gutierrez, & Hitt, 2000). Geletkanycz reports that both uncertainty avoidance and power-distance are negatively associated with commitment to the strategic status quo; interestingly, the results were the reverse of the hypothesized directions of these relationships.

Morris et al. (1993) examined the association between the cultural value of individualism and entrepreneurship within organizations. They hypothesize that at the extremes of the individualism-collectivism continuum there will be relatively low levels of entrepreneurship. These authors propose that at moderate levels of individualism, corporate entrepreneurship will be highest. Their results support this association in samples of firms in the United States and South Africa, but not in the highly collectivist culture of Portugal.

To summarize, though only a single study has examined corporate entrepreneurship through the lens of national culture, there is much research that speaks to issues of significance to this body of knowledge. Table 3 summarizes the research methods used in these studies. The strength of research in this area is the common use of large samples and multiple countries. Further, within the area of corporate entrepreneurship, the heavy reliance on Hofstede's indices of cultural dimensions is less of a concern than in the literature on individual entrepreneurship. This is because Hofstede's indices were constructed and validated within the context of large formal organizations (Hofstede, 1980a,b; Hofstede & Bond, 1984). Studies that address national culture and attributes of corporate entrepreneurship such as strategic renewal, spin-offs, entry mode, and innovation reveal a strong influence of national cultural factors.

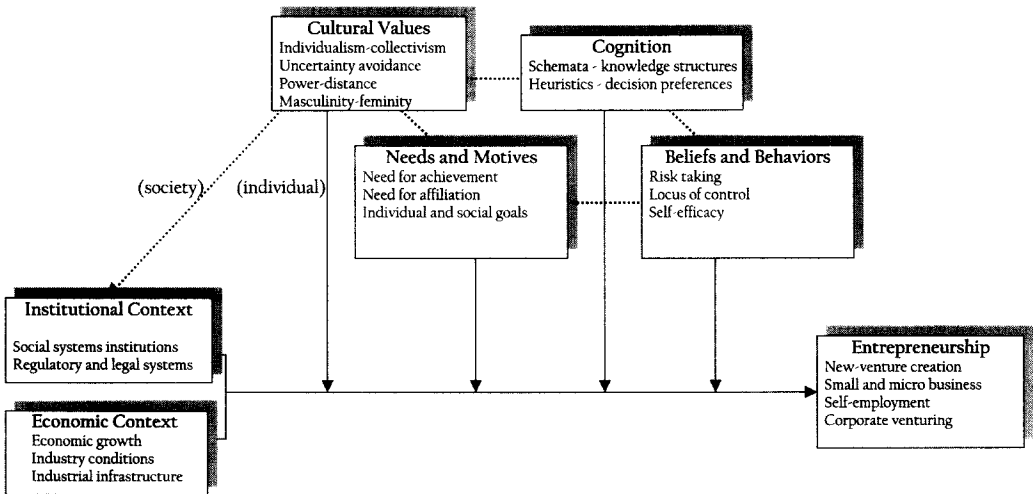
A MODEL OF NATIONAL CULTURE AND ENTREPRENEURSHIP

The relationships among studies reviewed are illustrated in a model of the association between culture and entrepreneurship (Figure 1). The model suggests that national culture is captured in different forms in behavioral research. The four forms suggested in Figure 1 include needs and motives, beliefs and behaviors, cognition, and cultural values (societal and individual levels). We derived these four forms or manifestations of culture from our preceding review of empirical studies. Also, the interrelationship among the cultural variables reflects the conjoint influence of cultural characteristics.

Culture, in various forms, is depicted as a moderator of the relationship between contextual factors and entrepreneurial outcomes. The moderating role of culture highlights that national culture acts as a catalyst rather than a causal agent of entrepreneurial outcomes. Though some studies find significant relationships between national culture and entrepreneurial outcomes, the model suggests that cultural characteristics transform and complement the institutional and economic contexts to influence entrepreneurship.

Figure 1

A Model of Culture's Association With Entrepreneurship



The economic and institutional contexts are key drivers of entrepreneurship and economic development (Leff, 1979). Economic context includes industrial infrastructure, economic growth, and capacity for innovation as important determinants of entrepreneurial activity (e.g., Furman, Porter, & Stern, 2002; Nelson, 1993). Recent behavioral research in entrepreneurship suggests that institutions play an important role in entrepreneurial activity. For example, Bruton and Ahlstrom (2002) compare the roles of venture capitalists in different economic contexts. Similarly, George and Prabhu (2000, 2002) highlight the role of developmental financial institutions in fostering entrepreneurship in emerging economies through lending policies and prioritization of national industrial-development goals. Clearly, the economic and institutional contexts play a causal role in creating a climate for innovation and entrepreneurship.

Social institutions are believed to reflect and reinforce cultural values. Cultural values in a society are likely to shape their institutions, linking to contextual factors in the model (Figure 1). However, individuals may have different degrees of the cultural values captured in Hofstede's dimensions (e.g., Baum et al., 1993; McGrath et al., 1992a). Therefore, individual cultural values are expected to moderate the institutional context-entrepreneurial outcomes relationship.

Other moderators included in Figure 1 are needs and motives, beliefs and behaviors, and cognition. Our review reveals substantial work that addresses the role of these factors on entrepreneurial activities as well as differences between entrepreneurs and nonentrepreneurs in these characteristics. Little work, however, addresses these cultural characteristics as portrayed in the current model. The role of cultural characteristics as an important influence on the relationship between economic and institutional contexts and entrepreneurial activity is a research area that merits further scholarly inquiry.

Addressing Methodological Issues

Though Figure 1 provides a broad overview of the potential patterns of relationships between national cultures, contextual factors, and entrepreneurial outcomes, it raises some significant methodological issues that future research needs to address. To date, the studies have been diverse in both focus and design. They have examined motives, values,

beliefs, and cognitions and compared entrepreneurs with other entrepreneurs; samples of students across countries; and, less frequently, entrepreneurs with nonentrepreneurs across cultures. Of the eight studies in this area, only three included both entrepreneurs and nonentrepreneurs (Baum et al., 1993; McGrath et al., 1992b; Mitchell et al., 2000).

Today, we know more about what entrepreneurs have in common than what distinguishes them from nonentrepreneurs. At present, some studies emphasize the similarities of entrepreneurs across cultures in terms of values and beliefs (e.g., McGrath & MacMillan, 1992; McGrath et al., 1992b), whereas others point to potential systematic differences (e.g., Baum et al., 1993; Scheinberg & MacMillan, 1988). Subtle differences in the research question lead to divergent results (Table 2). Future research should attend to these fundamental issues of research design to resolve these inconsistencies. It should identify both the similarities and differences among entrepreneurs from different cultures and between entrepreneurs and nonentrepreneurs across cultures, using a common conceptual framework. Such a conceptual framework is essential to provide a strong foundation for the development of our understanding.

A second significant methodological issue arises from the interdependent nature of the relationships between cultural values, individual values, and beliefs (Figure 1). Because culture represents an aggregation of individual values and beliefs, it is not surprising that measures of cultural values are correlated with measures of individual values. Consider, for example, the focus on the prevalence of individual characteristics that are supportive of entrepreneurship (Mueller & Thomas, 2000; Thomas & Mueller, 2000). These studies analyzed student responses that revealed that countries similar to the United States in Hofstede's dimensions would have entrepreneurial traits (innovativeness, external locus of control, and risk taking). Note, however, the similarities between the measures of individual values and the broader dimensions of cultural values: innovativeness represents willingness to deviate from group norms (i.e., individualism); external locus of control reflects the value of masculinity; risk taking reflects low uncertainty avoidance. Similar arguments can be made with respect to motives and beliefs. These studies fall into the tautology trap: aggregate values (culture) are likely to predict individual values that are consistent with them.

Given the problem of making distinctions between cultural values and individual values and beliefs, studies that examine characteristics such as cognitive scripts, schemata, or heuristics (Mitchell et al., 2000; see also Busenitz & Lau, 1997) have much potential for future research. Questions regarding knowledge structures (scripts) are conceptually removed from questions of values. For example, in Mitchell et al. (2000), an example of a resource possession script is "I presently (a) control acquisition or expansion funds in an ongoing business, or have my own funds available for venturing; or (b) will need to raise financing for my venture from third parties." Such questions appear to be far removed from cultural values. A second benefit is that the cognitive model represents a coherent conceptual framework around which future research can be organized and integrated. Further, the cognitive approach also provides an opportunity for identification of useful interventions, if the goal is to increase entrepreneurial activity. Rather than pointing out that collectivist, uncertainty-avoiding countries are expected to be less entrepreneurial, the cognitive approach enables us to identify those schemata and scripts that are present or absent within a culture.

A third significant methodological issue, which relates to the majority of studies reviewed so far, is reliance on Hofstede's indices (Baum et al., 1993; Mitchell et al., 2000; Mueller & Thomas, 2000; Shane et al., 1991; Shane, 1992, 1993; Thomas & Mueller, 2000). Hofstede's dimensions were originally developed in the context of formal organizations. They are broadly defined and do not directly address aspects of culture that are most significant to entrepreneurship (Busenitz, Gomez, & Spencer, 2000). Further, there is some evidence that country scores on these dimensions are not

static but may change over time (McGrath et al., 1992b). An independent measure of cultural values is highly desirable. An ideal measure would examine aspects of culture that relate to entrepreneurship and go beyond normative aspects of culture to consider institutional dimensions (e.g., Busenitz et al., 2000).

Busenitz et al. (2000) attempt to address the overly generalized view of culture that results from a strong emphasis on Hofstede's dimensions. These researchers present a three-dimensional measure of "country institutional profiles" that include the regulatory, cognitive, and normative aspects that are expected to influence levels of entrepreneurship across cultures. An advantage of this approach is the explicit recognition that country differences involve more than the normative aspect of culture. Also, by developing a measure that focuses solely on factors influencing entrepreneurship, they avoid the generality that has limited the prescriptive benefits that can be derived from Hofstede's dimensions. Such a measure is not without its limitations, however; in particular, the factor structure was not found to be consistent across countries, indicating that the three-dimensional model may be country (and possibly culture) specific. The advantages of developing such a measure, if the data are gathered independently, include the elimination of mono-method bias, the acknowledgment that culture is malleable (McGrath et al., 1992b), and a greater relevance to entrepreneurship.

Corporate entrepreneurship has received considerable attention in previous research (Zahra, 1991, 1993). With regard to culture and corporate entrepreneurship, a weakness is the lack of integration of earlier studies in this area. An interesting phenomenon that requires further attention is the observation that a culture may be supportive of cooperative strategies (e.g., Steensma et al., 2000) but not strategic renewal (e.g., Geletkanycz, 1997). Thus, depending on which aspect of corporate entrepreneurship one examines, different results are likely to be observed. A second issue is whether incremental product or process innovation is considered as important to corporate entrepreneurship as are radical innovations. Although some cultures appear to facilitate radical innovation (Shane, 1992), others may be more appropriate for continuous incremental innovation (e.g., Herbig, 1994). Both of these issues suggest that in the future, investigators should put considerable thought into the choice of measure of corporate entrepreneurship. An important question has yet to be addressed: How do national culture and organizational culture interact to influence corporate entrepreneurship?

Though the intent of this article is to review extant behavioral research in this domain, it is important to note that this review does not include studies from the broader social science disciplines such as sociology and economics. For example, researchers have done substantial work relative to social structural issues and the factors affecting women and minority entrepreneurship in different economic environments, issues that could clearly be culturally based (Aldrich, Reese, & Dubini, 1989; Boyd, 2000; Reynolds & White, 1997). Women's studies and sociology provide a fertile ground that would help to substantively inform behavioral research. Similarly, behavioral studies in entrepreneurship can draw from a substantial body of literature in economics. Leff (1978, 1979) suggested a need to study the uncertainty and risk-bearing features of entrepreneurship, which affect the capacity for investment and innovation. Along these lines, the role of different organizational forms such as business groups play an important role in entrepreneurship and growth in many emerging economies (Khanna, 2000). Similarly, corporate entrepreneurship underlying renewal processes such as privatization that may have clear institutional and cultural bases are important directions for future research (Zahra et al., 2000).

CONCLUSIONS AND FUTURE DIRECTIONS

Although conceptual arguments about a culture's consequences for entrepreneurship have been made for at least 70 years (e.g., Schumpeter, 1934; Weber, 1930), empirical

evidence has only recently begun to emerge. Of the 21 empirical studies of culture's consequences reviewed here, 18 were published within the last 10 years. Throughout this article we have noted significant issues for consideration in future research. We summarize these issues here.

1. Researchers should give greater attention to the interactions among cultural dimensions and the simultaneous influence of cultural, regulatory, and industry characteristics on aggregate entrepreneurship.
2. An independent measure of cultural values that are relevant to entrepreneurship needs to be developed. This measure will mitigate mono-method biases and explicitly recognize that culture is malleable and temporally unstable.
3. Larger sample sizes and more sophisticated multivariate analyses are necessary for future studies of culture and aggregate measures of entrepreneurship.
4. The cognitive approach requires further development with the aim of providing an understanding of the association between culture and those cognitive scripts and heuristics associated with entrepreneurship.
5. A comprehensive theoretical model of the association between culture and different outcomes of entrepreneurial behavior (e.g., new-venture creation, corporate entrepreneurship, self-employment) that explicitly recognizes the multiple dimensions of this outcome needs to be developed.
6. We must examine the interaction between national and organizational cultures and their joint effect upon corporate entrepreneurship.

We believe that these six issues represent pressing tasks for scholars of entrepreneurship who are interested in a national culture's consequences. Our understanding of these consequences for entrepreneurship has progressed rapidly over the last 10 years. We hope that this review will contribute to the continued progress by encouraging researchers to further explore these interesting and complex issues.

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