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CROSS-CULTURAL COGNITIONS AND THE VENTURE CREATION DECISION

RONALD K. MITCHELL
BROCK SMITH
University of Victoria

KRISTIE W. SEAWRIGHT
Brigham Young University

ERIC A. MORSE
University of Victoria

Theories of social cognition, information processing, and expertise provided the foundation for a cross-cultural model of venture creation. Using data from seven countries, we found support for the cognitive model. In particular, arrangements, willingness, and ability scripts were found to be associated with the venture creation decision; some two-way interactions involving arrangements scripts were significant; and individualism and power distance were associated with willingness and ability scripts and with the venture creation decision, through interaction with arrangements scripts. Results support and extend theory and provide preliminary evidence of consistency in cognitive scripts across cultures.

In an increasingly global economy, entrepreneurs play a vital role in producing growth, because they create the border-spanning organizations that yield new jobs, increase trade, and accelerate the generation, dissemination, and application of innovative ideas (Arzeni, 1998: 18; Bates & Dunham, 1993; McDougall & Oviatt, 1997: 293). Yet in extensive research conducted over the past three decades, scholars have not reached agreement on explanations of entrepreneurial activity *within* cultures (Shane, 1996) let alone *across* cultures (McDougall & Oviatt, 1997).

Conventional wisdom suggests that the factors that influence an entrepreneur's decision to start a business—the venture creation decision—vary across countries (Muzka, de Vries, & Ullmann, 1991; Shane, Kolvereid, & Westhead, 1991), because it is easy to believe, as did Pascal in the year 1662, comparing France and Spain, that "there are truths on this side of the Pyrenees which are falsehoods on the other." In this article, we draw on the emerging cognitive perspective on entrepreneurship to argue that entrepreneurs in different cultures do not think differently in several significant respects. We argue that the multitude of apparently heterogeneous phenomena that have in the past been thought to affect the venture creation decisions of individuals in various countries may in reality form the elements of a coherent cognitive model, effectively constituting a global culture of entrepreneurship.

We base this assertion on four recent developments. First, earlier work has demonstrated that cognitions vary systematically by entrepreneurial involvement rather than by culture (McGrath & MacMillan, 1992; McGrath, MacMillan, & Scheinberg, 1992). Second, in several recent studies in the entrepreneurship literature, cognitive constructs relating to biases and heuristics have been found to differentiate certain behaviors of entrepreneurs from those of nonentrepreneurs (Baron, 1998; Busenitz & Barney, 1997; Simon, Houghton, & Aquino, 1999). Third, cognition theory has been developed to the point where three types of cognitive scripts—arrangements, willingness, and ability—have been found to be central to expert performance (Leddo & Abelson, 1986). Finally, in a conceptual framework proposed by Busenitz and Lau (1996), social, cultural, and personal variables have been related to cognition, and cognition to outcomes that include the venture creation deci-

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sion. These foundations enable the conceptualization of a model of venture creation that can be examined in a cross-cultural context.

Evidence of consistency in venturing scripts across cultures could serve to heal a fractured field by providing a foundation for a general explanation for entrepreneurial activity. Such an explanation would have implications for the development of the entrepreneurship paradigm (Kuhn, 1970) and for the encouragement and practice of entrepreneurship in the global economy. A clear understanding of the factors affecting the venture creation decision across cultures would be important to policy makers (showing them what to encourage), to practitioners (what to do better), and to researchers (what to clarify).

In response to this need, in this study we investigated individuals' venturing cognitions across borders by examining the venturing scripts associated with the venture creation decision in seven countries on the Pacific Rim.[1] To accomplish this, we defined and examined a cross-cultural cognitive model of venture creation based on the Busenitz and Lau (1996) model and thereby respond to entrepreneurship scholars' growing interest in cognition. Our study addresses two research questions: How are the venturing scripts of individuals related to the venture creation decision? And, to what extent do these scripts vary by culture?

BACKGROUND

The general theories of social cognition, information processing, and expertise provide foundations for this study. These are briefly reviewed and then applied to the specification of a cross-cultural cognitive model of venture creation.

An appeal to the social cognition theory branch of cognitive science is suggested by the nature of the research problem, which is to try to determine whether the apparently disorganized, heterogeneous phenomena that have been previously associated with the venture creation decision are in reality subject to some underlying cognitive order. Social cognition theory originally emerged to manage such problems, especially those that require an explanation of individual behavior as it is shaped by person-environment interaction. According to social cognition theory, individuals exist within a total situation described by two pairs of factors: (1) *cognition* and *motivation* and (2) the *person* in the *situation* (Fiske & Taylor, 1984: 4–5). Models used to explain individual behavior should approximate comprehensive reality (cognition and motivation and person in situation) as perceived when an individual processes information about these two factor pairs (Fiske & Taylor, 1984: 5, 16). In this manner, individual information processing is thought to be associated with individual decision making within a total situation, which suggests an extension of the social information processing perspective (Salancik & Pfeffer, 1978) to the development and justification of a research model for this study.

Information-processing theory is an attempt to explain how information is acquired, stored, and retrieved from the memory of individuals. Cognitions have been defined as all processes by which sensory input is transformed, reduced, elaborated, stored, recovered, and used (Neisser, 1967). Expert information processing theory is of particular interest to entrepreneurship scholars because it successfully accounts for the ability of entrepreneurs to transform, store, recover, and use information that nonentrepreneurs miss. According to theory, experts possess knowledge structures, or scripts, about particular domains that allow them to significantly outperform nonexperts who do not have and use such structured knowledge (Ericsson, Krampe, & Tesch-Romer, 1993; Glaser, 1984; Leddo & Abelson, 1986; Lord & Maher, 1990; Read, 1987). An *expert script* is comprised of highly developed, sequentially ordered knowledge germane to a specific field (Glaser, 1984; Read, 1987) and as such can be defined as an action-based knowledge structure. The efficacy of expert scripts has been demonstrated in a variety of fields, such as chess (Chase & Simon, 1972), computer programming (McKeithen, Reitman, Reuter, & Hirtle, 1981), law enforcement (Lurigio & Carroll, 1985), and physics (Chi, Glaser, & Rees, 1982). Expert scripts are distinct from and should not be confused with dramatic (Goffman, 1959), forecasting (Shoemaker, 1993), or transactional (Berne, 1976) scripts.

Expert scripts are most often acquired in a dynamic process (Schumacher & Czerwinski, 1992: 65) in which knowledge structures are organized in long-term memory through the iterative interrogation, instantiation, and falsification of cognitions grounded in real-world experience (Glaser, 1984). Expert scripts dramatically improve the information-processing capability of an individual (Lord & Maher, 1990) but increase the potential for "thinking errors" (Walsh, 1995). Recent entrepreneurship

[1] These Pacific Rim countries together produce $1.5 trillion in exports that arise from an economic base of approximately $15 trillion in 1997 yearly gross domestic product (GDP). This level of economic activity compares credibly to the $8 trillion GDP in the European Union 15, and $18.5 trillion GDP in the Group of Seven countries (Organisation for Economic Cooperation and Development [OECD], 1998).

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research has examined some of the consequences suffered by entrepreneurs when they use information-processing shortcuts such as scripts to deal with an entrepreneurial environment characterized by information overload, high uncertainty or novelty, strong emotions, time pressure, and fatigue. These include counterfactual thinking, affect infusion, self-serving bias, planning fallacy, and self-justification (Baron, 1998); overconfidence or representativeness errors (Busenitz & Barney, 1997); and overconfidence, illusion of control, and misguided belief in the "law of small numbers" (Simon et al., 1999). In this study we examine some of the positive effects of venturing scripts by investigating cognitions related to the venture creation decision that occur across borders.

A key study in the expert information processing literature, Leddo and Abelson (1986), provided a foundation for our research in that it furnished the basis for the conceptualization of the venture creation decision within a comprehensive reality, as required by social cognition theory, through the use of scripts as action-based knowledge structures. The 1986 study reports the results of a set of experiments in which the responses of subjects on several script-based tasks involving activities such as planning were observed. The observation of Leddo and Abelson that the action-based knowledge structures or scripts of individuals appeared to take into account comprehensive reality is consistent with social cognition theory and suggests the manner in which the total configuration of forces affects the cognitions individuals use in decision-making situations. Cognitive scripts were found to consist of information about both the situation itself and the sequentially ordered knowledge required for performance within that situation.

In the entry stage of a script sequence, the scripts of individuals were found to emphasize the adequacy of *arrangements,* such as access to tools and materials. Here, the constraints of people in given situations were shown to be part of their scripts, as suggested by social cognition theory. In later stages of a script sequence, individuals (while retaining their concern for arrangements) were found to emphasize doing, or enacting, script requirements, which implicates their motivation, or *willingness,* and their *ability* to carry out the main goal of the script. For instance, given tools and materials, will an artisan choose to, and be able to, do work? (Leddo & Abelson, 1986: 121). Evidence of these three general cognitive processes—arrangements, willingness, and ability—has previously been found in the testing of intention-based, planned behavior models of the entrepreneurial event, albeit under different labels (Krueger & Carsrud, 1993; Shapero, 1975, 1982). These include: (1) arrangements cognitions, relating to the *feasibility* of a venture, (2) willingness cognitions, relating to the *propensity to act,* and (3) ability cognitions, relating to venture *desirability* (Krueger, 1993: 5).

The Busenitz and Lau (1996) model suggests that the venture creation decision is influenced by cognition, which itself is influenced by cultural values, social context, and personal variables. By adopting Leddo and Abelson's (1986) cognition constructs (arrangements, willingness, and ability scripts), we were able to design a similar model that links culture, cognition, and the venture creation decision. Social context and personal variables are not directly examined in our study. However, the social cognition concept of comprehensive reality suggests that cognition (and motivation) are informed or shaped by person-in-situation, in a total configuration of forces. Social context and personal variables reflect person-in-situation, and these variables are indirectly captured in our model: social context informs arrangements scripts (the social context should suggest which arrangements are necessary), and personal variables inform willingness scripts (personal variables such as risk aversion or uncertainty orientation, for example, should shape cognition about willingness to venture). Ability scripts are analogous to some of the Busenitz and Lau (1996: 27) notions: (1) schemas about risks, control, start-up opportunity or benefits and (2) heuristics relating to availability, representation, overconfidence, anchoring, and other lower-order ability scripts.

CONCEPTUAL MODEL

The foregoing theory and frameworks provide a foundation for the cross-cultural cognitive model of venture creation shown in Figure 1. In brief, in our model the venture creation decision is influenced by arrangements, willingness, and ability scripts, which are in turn shaped by venturing outcomes, in an iterative but not directly recursive process of reinforcement. These scripts are influenced by cultural values, which also moderate the script–venture creation decision relationship. This model encompasses a comprehensive reality that includes social context and personal variables (although these variables are not specifically examined as antecedents of cognition in the study).

Our conceptual model is cross-sectional. Because a cross-sectional model examines iterative relationships at a single point in time, it is not possible to isolate cause and effect. It is therefore not clear which scripts are in place prior to a venture creation decision, which ones are validated or rein-

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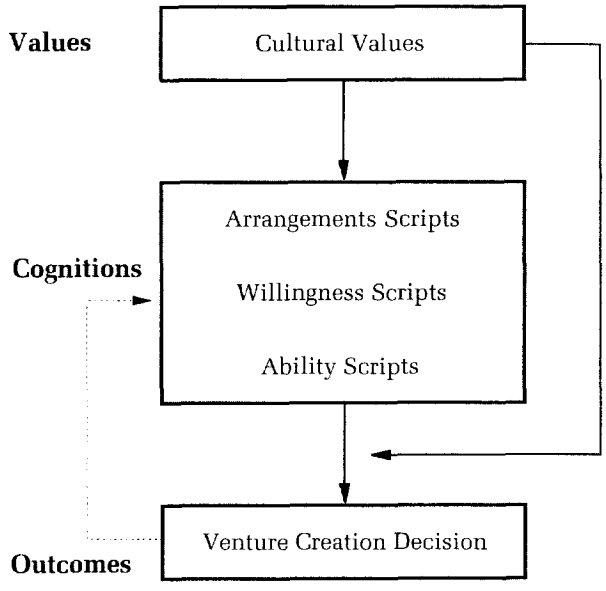
FIGURE 1
Conceptual Model



forced in the process of making the decision, or which scripts are created subsequent to a given decision or during its implementation. Thus, although we couch our hypotheses (below) in language that could imply causality, we acknowledge that the relationships are not causal, and they were not tested as such.

As Figure 1 illustrates, the venture creation decision is an outcome variable that indicates whether or not an individual has made the decision to start a venture. It is particularly relevant to cognition research as it represents a choice made at a time between intention to venture and venture creation, when scripts, having been created over time (Schumacher & Czerwinski, 1992: 72), are enacted. The venture creation decision is an appropriate focal variable for this early stage of theory development because it occurs regardless of the location, type of industry, or nature of a venture. As suggested by social cognition theory, person-in-situation and cognition and motivation factors such as the growth rate of an economy or industry, the qualifications of an entrepreneur or a venture team, and the type of business desired, are more or less taken into account as the decision is made, depending upon the arrangements, willingness, and ability scripts of the individual in question.

The venture creation decision is also appropriate from a substantive perspective. It is important to the prosperity of most countries, and the number of ventures created is often reported by governments as an indication of economic well-being. Arzeni (1998) reported, for example, that emerging firms created 450,000 jobs in the United States in 1997, or 35 percent of new jobs, and they were responsible for an important proportion of all new employment growth in Canada.

Cognitive Scripts

Arrangements scripts. Venture arrangements denote having the contacts, relationships, resources, and assets necessary to form a new venture. Arrangements scripts are the knowledge structures individuals have about the use of the specific arrangements that support their own performance and expert-level mastery in a given domain. Possession of, or access to, specific arrangements is an integral part of a script, since knowledge structures involving the appropriate use of arrangements are arrangements-specific. For instance, athletes insist on using their own golf clubs or bowling balls, because their arrangements scripts are better enacted with mastery where these specific arrangements are present. We found evidence of at least four such arrangements scripts in the entrepreneurship literature. These scripts concerned (1) idea protection (Porter, 1985; Rumelt, 1987), (2) having a venture network (Aldrich & Zimmer, 1986; Bull & Willard, 1993; MacMillan, 1983), (3) having access to general business resources (Bull & Willard, 1993), and (4) having venture-specific skills (Cooper & Dunkelberg, 1987).

Arrangements scripts about idea protection concern possession and use of specific patents, copyrights, franchise agreements, contracts, and other isolating arrangements that serve to prevent imitation (Rumelt, 1987). Arrangements scripts about venture networks concern the possession and use of essential and unique social contacts (Aldrich & Zimmer, 1986). Arrangements scripts about business resources concern the possession of, access to, and use of specific financial, human, and other assets or resources necessary for new venture formation (Bull & Willard, 1993; Glade, 1967). Finally, arrangements scripts about venture-specific skills relate to the extent to which a prospective entrepreneur recognizes and has mastered the capabilities that provide sustainable competitive advantage for a new venture (Barney, 1991).

Expert information processing theory suggests that entrepreneurs—individuals who make the venture creation decision (Low & MacMillan, 1988)—have and use appropriate arrangements scripts about idea protection, venture networks, resource access, and venture-specific skills to make venture creation decisions. Nonentrepreneurs, including business professionals, are expected to *not* have appropriate venture arrangements scripts,

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thinking instead about only the surface features (Glaser, 1984) of venture situations. The assessment of personal and situational resource constraints is understood to affect an individual's self-efficacy (Gist & Mitchell, 1992), which has been shown to be crucial for new venture formation (Krueger, 1993; Krueger & Dickson, 1993). Leddo and Abelson (1986: 121) suggested that without arrangements, expert script entry, or the decision to begin, is precluded. Without the mastery of venture arrangements scripts, prospective entrepreneurs will be less able to physically create a venture. Thus, there is conceptual support to hypothesize that:

Hypothesis 1a. Venture arrangements scripts are positively related to the venture creation decision.

Willingness scripts. Venture willingness is commitment to venturing and receptivity to the idea of starting a venture. Willingness scripts are the knowledge structures that underlie (inform) this commitment. They include actionable thoughts about (1) opportunity seeking (Kirzner, 1982; Krueger & Brazeal, 1994), (2) commitment tolerance (Ghemawat, 1991; Hisrich, 1990), and (3) venture opportunity pursuit (McClelland, 1968; Sexton & Bowman-Upton, 1985). Willingness scripts that focus on opportunity seeking are concerned with an openness, orientation, and drive toward seeking out new situations and possibilities and trying new things. Commitment tolerance scripts include the inclination to "put your money where your mouth is" and to assume the risk and responsibility of new venture creation. Opportunity motivation scripts are concerned with "getting on with the task" and the belief that missing an opportunity is worse than trying and failing.

Entrepreneurs are expected to have more highly developed scripts relating to opportunity seeking, commitment tolerance, and opportunity pursuit than business nonentrepreneurs, which clarifies understanding of the true nature of the venture creation decision and its associated risks. Willingness scripts permit entrepreneurs to experience less risk than business nonentrepreneurs because these scripts reduce uncertainty (Heath & Tversky, 1991; Krueger, 1993). Without willingness, script doing/enactment is precluded (Leddo & Abelson, 1986: 121) because prospective venturers will not have the motivation or commitment to make venture creation decisions (Krueger, 1993: 5). Willingness scripts such as the foregoing are thought to be associated with new venture formation (Busenitz & Lau, 1996; Krueger & Carsrud, 1993; Shapero, 1975, 1982). Consequently,

Hypothesis 1b. Venture willingness scripts are positively related to the venture creation decision.

Ability scripts. Venture ability consists of the knowledge structures or scripts that individuals have about the capabilities, skills, knowledge, norms, and attitudes required to create a venture (Bull & Willard, 1993; Herron, 1990). At least three scripts relating to ability appear in the entrepreneurship literature: (1) venture diagnostic scripts, (2) situational knowledge scripts, and (3) ability–opportunity fit scripts. Venture diagnostic scripts concern the ability to assess the condition and potential of ventures and to understand the systematic elements involved in their creation (Krueger & Carsrud, 1993). Situational knowledge scripts involve the ability to draw on lessons learned in a variety of ventures and apply those lessons to a specific situation (Cooper & Dunkelberg, 1987; Stuart & Abetti, 1990). Finally, ability–opportunity fit scripts concern the ability to see ways in which customer and venture value can be created in new combinations of people, materials, or products (Glade, 1967; Kirzner, 1982).

Both the expert information processing and social cognition literatures suggest that ability scripts will be related to the venture creation decision. Leddo and Abelson (1986: 121) found that ability scripts were necessary for the enactment of individual plans: the doing of expert functions. Further, in the assessment of person-in-situation, individuals are expected to have a higher degree of self-efficacy when their ability cognitions are more highly developed (Gist & Mitchell, 1992). Ability scripts include the capability to assess the condition and potential of ventures, to draw on and apply lessons learned in a variety of ventures, and to be able to both see the need for and carry out creation of value by matching opportunity and capability, and hence gain self-efficacy in making the venture creation decision. Thus,

Hypothesis 1c. Venture ability scripts are positively related to the venture creation decision.

Combined effects. Leddo and Abelson (1986) suggested that script enactments, such as making a venture creation decision, require both entry (arrangements) and doing (willingness and ability) scripts in sequence:

> These privileged functions we label Entry and Doing; the former occurs early in the script, and the latter near the end. Entry presupposes the success of script entry *arrangements*. . . . Doing presupposes the actor's *willingness* and the *ability to carry out*

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the action serving the main goal of the script. (Leddo & Abelson, 1986: 121; emphasis added)

Thus, arrangements scripts are thought to have primacy in that they are of concern earlier in the performance sequence. Social cognition theory, however, suggests that interactions between ability, willingness, and arrangements scripts may be critical to expert performance in a total configuration of forces (both entry and doing functions). Arrangements scripts are therefore necessary for enactment of the venture creation decision, but they are not sufficient. Without willingness scripts, there may not be sufficient motivation to use arrangements scripts. Without ability scripts, there may not be sufficient skill to use arrangements scripts. Willingness scripts without ability scripts may result in venture creation decisions, but these ventures are not likely to last very long (a "rockets to oblivion" phenomenon). Thus, arrangements, willingness, and ability scripts are thought to be necessary, but individually not sufficient, for expert outcomes. Therefore,

Hypothesis 1d. The two-way interaction between arrangements scripts and willingness scripts is positively related to the venture creation decision.

Hypothesis 1e. The two-way interaction between arrangements scripts and ability scripts is positively related to the venture creation decision.

Hypothesis 1f. The two-way interaction between willingness scripts and ability scripts is positively related to the venture creation decision.

Cultural Values

Cultural values concern the way human societies organize knowledge and social behavior (Kroeber & Kluckhohn, 1952) into a fairly consistent set of cognitive orientations that reflect "a broad tendency to prefer certain states of affairs over others" (Hofstede, 1980: 19). In this sense, cultural values may be viewed as problem-solving cognitions (Kluckhohn, 1951; Rokeach, 1972). Because there are a limited number of common problems that societies face, and also a limited number of known responses (Kluckhohn & Strodbeck, 1961), prior research has defined cultural values along a few dimensions. One conceptualization that has been used often in the entrepreneurship literature (e.g., Busenitz & Lau, 1996; McGrath, MacMillan, Yang, & Tsai, 1992) comes from Hofstede (1980), who identified four cultural values that can be used to describe a given culture: power distance, individualism, uncertainty avoidance, and masculinity.

Two of these cultural value dimensions are particularly relevant to the scripts that influence the venture creation decision: individualism and power distance. Individualism represents a preference for acting in the interests of the self and immediate family as opposed to the interests of the group or collective. Individualism may affect venturing scripts by influencing the nature of an individual's recognition of, and response to, opportunity. For example, entrepreneurs in an individualistic society may have scanning and decision scripts tailored to finding opportunities that they, personally, can take advantage of; these opportunities would involve individual vision, expertise, decisions, and control structures. Entrepreneurs in a collective society may have scanning and decision scripts tailored to opportunities that a group or consortium can take advantage of; these opportunities would involve coordination, collaboration, and group decision and control structures.

Power distance refers to the acceptance of inequality in power and authority between individuals in a society. Power distance may influence venturing scripts by shaping an individual's perspective on the availability of opportunities to venture. For example, in high-power-distance countries, people in the lower classes may view venturing as something that only the elite do, and hence they do not develop scripts for scanning for or evaluating opportunities. In addition, these individuals may not have access to the experiences or resources that promote the development of venturing scripts, as these may be restricted to the elite.

The two other dimensions, uncertainty avoidance and masculinity, may also be relevant to the venture creation decision but were not examined in this study. Uncertainty avoidance has been shown to be problematic in assessing Asian cultures (Hofstede & Bond, 1988). Masculinity has been the target of reconceptualization (McGrath, MacMillan, Yang, & Tsai, 1992), leaving its application to the Pacific Rim countries in our study unclear.

It is well accepted that cultural values are an antecedent to human thought and behavior (Berry, Poortinga, Segall, & Dasen, 1992; Shweder, 1990). Busenitz and Lau (1996: 31) contended that cultural values are important in influencing entrepreneurial cognition. Individualism is expected to influence arrangements scripts because collective societies often limit private property and the protection of individual ideas and tend to prohibit private access to resources. Individuals may thus fit their arrangements scripts to the level of private access to resources. Individualism may also influ-

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ence willingness scripts, since the laws and norms of collective societies often restrict or put limitations on personal wealth and other economic outcomes of ventures, which might discourage individual commitment and motivation to venture. Alternatively, entrepreneurs in collective societies may develop different types of willingness scripts that are more socially based. Individualism is also expected to influence ability scripts. In societies where economic activity is primarily collective, there may be fewer opportunities for individuals to develop venturing capabilities and skills, since venturing tasks are likely distributed among many participants. There may be less opportunity to observe and diagnose ventures since access to decision makers, rationales for decisions, and decision outcomes in collective ventures may be more difficult to identify than in individual-based ventures. Finally, there may be fewer stories of individual venture success or failure, and published accounts of such success and failure are more likely to be influenced by ideology in collective societies, limiting situational knowledge. These differences are expected to influence the type and level of arrangements, willingness, and ability scripts. Therefore,

Hypothesis 2a. Individualism is related to arrangements, willingness, and ability scripts.

Power distance is also expected to influence the level and nature of arrangements, willingness, and ability scripts. In high-power-distance countries, resources and knowledge structures associated with the use of resources may be more readily acquired by those with power, thus influencing arrangements scripts relating to resource possession. In these countries, who you know and their positions or statuses tend to count more than their capabilities. Thus, arrangements scripts relating to venture networks are likely different than in low-power-distance countries, where networks are based to a greater extent on capability. Similarly, venture-specific skills may be less important in high-power-distance countries, where the elite or politically connected tend to "look after their own." Willingness scripts, such as commitment tolerance, are more likely possessed by those socialized to power, and those outside the economic or political elite are likely to be sensitized to different types of opportunities and thus have different seeking scripts. Ability scripts, such as venture situational knowledge, are more likely to occur in individuals who—as a result of social hierarchy—have entree to the practice arena in which individuals gain ability scripts. Similarly, ability–opportunity fit scripts are likely different for those in and out of the elite. Therefore,

Hypothesis 2b. Power distance is related to arrangements, willingness, and ability scripts.

Although cultural values are expected to have a direct effect on cognition *within* cultures, they might also be expected to influence the manner in which certain cognitions (by country) relate to the venture creation decision *across* cultures (Lonner & Adamopoulos, 1997: 62). Because each culture may have unique values and norms about venture creation, culture may also be expected to moderate the relationship between cognitive scripts and the venture creation decision. That is, the specific arrangements, willingness, and ability scripts associated with the venture creation decision are expected to differ by culture. However, entrepreneurship cognition theory has not developed to the point where we are able a priori to identify the specific aspects that are likely to vary, and why. Accordingly, we treated this as an empirical issue, and suggest:

Hypothesis 3. The relationship between cognitive scripts and the venture creation decision is moderated by cultural values.

METHODS

Sample

To allow assessment of whether there is a cognitively based structure to the seemingly unstructured (disorganized) phenomenon of venture creation across cultures, the setting chosen for study had to meet three criteria: (1) recognizable economic coherence and importance, (2) individuals who both did and did not make venture creation decisions, and (3) heterogeneity across cultures. Using these criteria, we chose seven countries on the Pacific Rim for the setting of our study: Canada, the United States, and Mexico (constituting the North American Trade Agreement [NAFTA] bloc, China and Japan (major non-NAFTA economies), and Australia and Chile (representing emerging participants in Pacific Rim trade).

Data were collected from 753 respondents in the seven countries, all of whom had at least some business experience and/or training and about a third of whom had started ventures. Given the difficulty of accessing sampling frames for probability samples in social science research (Pedhazur & Schmelkin, 1991) and in international entrepreneurship research in particular (McDougall & Oviatt, 1997: 303), we used a purposeful sampling approach. This approach relied on the combined judgment of the research team and local assistants to select, within countries, potential respondents who reflected a range of business experiences, in-

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dustries, education, and ages but who were nevertheless similar across individualism and power distance country groupings (e.g., Hofstede & Bond, 1988). These respondents were identified in one of two ways: through local chambers of commerce and small business development centers, or through contacts provided by local business schools. Respondents were business owners, entrepreneurs, midlevel employees from both public and private sectors and, in the United States and Canada, some were business students (individuals age 22 or older, with work experience).

A pretested, self-administered, structured survey was personally delivered to and retrieved from all participants by local assistants. This personal approach resulted in a 98 percent response rate (only a small number of the surveys were refused). Pretests were conducted in the United States, Canada, and Mexico (Mitchell, 1994; Mitchell & Seawright, 1995). We took care to translate the instrument in a fashion meaningful to individuals in each culture. A native of each country who spoke English as a second language was selected to translate the instrument from English into the native language. One of the authors talked through each question with the native assistant to develop a shared understanding. After the survey was translated, a native English speaker who spoke the given non-English language translated the instrument back into English. Where discrepancies arose, both translators and one of the researchers met to reconcile the differences. This double-translation approach was also used in the Mexican pretest. However, even with the care taken to translate the survey instrument, it is still limited by its origin in the North American research tradition, using theory and methods derived from predominantly Western journals (Hofstede, 1994).

Of the 753 respondents, 315 were from North America, 179 were from Central and South America, 201 were from Asia, and 58 were from Australia. Table 1 shows characteristics of the sample. Approximately 75 percent of the respondents were men, and approximately 30 percent of them had made a venture creation decision. Respondents ranged in age from 22 to 71 years, and this range was consistent across countries and the venturer and nonventurer subgroups. No significant differences were found on mean age, formal education, or past business experience in country groups based on power distance, but the Chili/Mexico grouping had a higher proportion of female respondents. In country groups based on individualism, no significant differences were found in mean age or sex. However, respondents in the Mexico/Japan grouping reported significantly higher past business experience than respondents in other culture groupings, and respondents from the Chili/China grouping had less formal education (typically, some college or university instead of an undergraduate degree). Further, respondents who had made a venture creation decision were found to be significantly older than business nonventurers (mean age of 39 vs. 32), and they reported greater past business experience (mean of 6.5 on a 10-point scale, compared to 4.2). Thus, although the sample is not

TABLE 1
Sample Characteristics

Variable[a]	United States	Canada	Australia	Mexico	Chile	Japan	China	Total
Sample size	184	131	58	147	32	53	148	753
Venture creator	31%	46%	21%	46%	31%	11%	10%	30%
Business nonventurer	69%	54%	79%	54%	69%	89%	90%	70%
Percentage of men	76	77	69	65	69	94	78	75
Venture creator	86	85	83	73	70	100	100	82
Business nonventurer	71	70	65	58	68	94	76	71
Mean age	34	34	38	32	40	43	32	34
Venture creator	40	43	40	34	46	48	35	39
Business nonventurer	31	27	37	30	37	43	32	32
Age range	22–69	22–71	22–62	22–64	26–64	24–63	22–57	22–71
Venture creator	22–69	22–71	32–50	22–58	28–64	35–63	27–44	22–71
Business nonventurer	22–68	22–55	22–62	22–64	26–53	24–62	22–57	22–68
Mean business experience	4.6	4.8	4.9	5.5	4.8	5.8	4.2	4.8
Venture creator	6.4	7.1	7.3	5.8	5.6	6.3	6.4	6.5
Business nonventurer	3.8	2.9	4.3	5.2	4.4	5.6	4.3	4.2

[a] Business experience was measured on a self-reported ten-point scale anchored by "limited" and "extensive." No significant differences were found in mean age, education, or past business experience between power distance country groupings. No differences were found in mean age among the individualism country groups, but respondents from Chili/China had less formal education than did other country groups, and respondents from Mexico/Japan reported greater past business experience.

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random, and country subsamples are not identical, the country groups are nevertheless quite similar in demographic characteristics and reflect a range of business experiences, education, and ages suitable for our addressing the research questions, at least in an exploratory fashion. Although age and business experience are not theoretically linked to venturing scripts or venture creation (Reuber & Fischer, 1994), differences in age and business experience could be considered alternative explanations for observed relationships and hence were incorporated as control variables (covariates) in hypothesis tests. Missing values on these covariates reduced the usable sample to 677 respondents (see the footnote to Table 5).

Measurement

Venture creation decision. The venture creation decision was measured with a dichotomous variable (coded yes/no) based on a positive response to either one of two questions: "I have started three or more businesses, at least one of which is a profitable ongoing entity" and "I have started at least one business that has been in existence for at least two years." These questions capture the conceptual meaning of the construct, in that they reflect a completed venture creation decision and a reasonable experiential period in which venturing scripts could develop, be validated, and mastered.

Script variables. The degree of mastery of the arrangements, willingness, and ability scripts appropriate for venture creation can only be measured indirectly by inference or by observing objects that represent the attributes under study, since scripts, as internal mental operations, are not directly observable (Posner, 1973: 92–93). One accepted approach based on expert information processing theory is to use a script-scenario construction model (Glaser, 1984; Read, 1987). In this approach, the existence and degree of mastery of scripts is inferred from respondent selection of paired response choices, one that represents expertise or script mastery, and one that does not (Mitchell, 1994). Experts, when presented with problems within their domain of expertise, are expected to access their knowledge structures/scripts to select the response choice (cue) consistent with that script (Glaser, 1984: 99). Nonexperts, being unable to access an appropriate script, are more likely to choose a socially desirable (Crowne & Marlowe, 1964) distracter cue. The cues are not the scripts, but when selected, simply provide evidence regarding the likely existence and mastery of a script.

Arrangements, willingness, and ability scripts were measured using this paired script cue approach. Appropriate script and distracter cues were developed using expert panels, a review of the empirical entrepreneurship and expert theory literature (23 separate citations), and a review by the lead author's doctoral dissertation committee (please see Mitchell [1994]). Some cues, particularly those relating to arrangements scripts, were worded to reflect possession, access to, or influence over the specific resources integral to the script. The cues were tested for face and external validity in the substantive domain through interviews with practicing entrepreneurs and business nonentrepreneurs in the United States, Canada, and Mexico. Further, various cueing formats (Read, 1987) were employed within constructs to capture the richness of the scripts that surround venture creation decisions (Mitchell, 1994). The items and the wording of cues were refined on the basis of these interviews and a series of pretests conducted in the United States, Canada, and Mexico. The refined items are listed in the Appendix.

Selection by respondents of script cues consistent with expert mastery was coded 1, and selection of distracter was coded 0. Because the individual items are independent pieces of evidence of the scripts, they are formative indicators (Pedhazur & Schmelkin, 1991: 54), and we added them together to create interval-scaled variables (Nunnally, 1978). Formative indicators define, or give rise to, a construct, but are not a reflection of it. Since each item helps to define the meaning of the construct, affirmative responses to all items are not required from an individual. For example, an increase in the pool of people and assets that a respondent controls (Appendix, item 20) is one indication of mastery of a script relating to arrangements. However, a respondent may have an arrangements script that is based on the masterful use of other resources without reference to changes in the available pool of people and assets. Also, since formative indicators are independent components of a construct, they may not be highly correlated. Consequently, it is inappropriate to expect unidimensionality at the construct level, and it is inappropriate to assess reliability at the item level with Cronbach's alpha, which is based on interitem correlation (Howell, 1987: 121).

As is appropriate with the use of independent formative indicators (Pedhazur & Schmelkin, 1991: 54), we used principal components factor analysis (using a minimum eigenvalue of one and varimax rotation) to confirm the hypothesized dimensionality of each of the cognition constructs. As reported in Table 4, support was generally found for the conceptualized dimensions of the cognitive script constructs. In addition to the three conceptualized

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ability dimensions, three items (11, 40, 48) formed a unique factor that was labeled "opportunity recognition." Some items were found to load on unintended factors, and some items were found to have high cross-loadings. Because items were summed into scales, however, these anomalous results do not adversely impact the study. They do, however, provide guidance for the future refinement of the measures at the subscale level. Consistent with the exploratory nature of the study, construct validity is further evidenced by the correlations among the modeled cognition constructs (Table 2) and among the conceptualized script dimensions (Table 3), which are significantly less than unity.

The cultural value dimensions of individualism and power distance were measured with Hofstede's (1980) ordinal assessment for six of the countries included in the analysis. As China was not part of Hofstede's sample, we approximated China scores using the results of McGrath, MacMillan, Yang, and Tsai's (1992) study, which included both Taiwan (which was included in the Hofstede study) and China. In the 1992 study, China was found to have a similar score to Taiwan on the individualism dimension, and its score on power distance differed from Taiwan's in relation to the United States. We used this relationship between the United States, China, and Taiwan to position China within the three groups defined for our study. Given the high correlation of these constructs in the context of Pacific Rim countries ($r = -.85$, Table 2), we examined individualism and power distance separately to avoid multicollinearity.

Data Analysis

Hypotheses were tested in an exploratory manner. We considered the study to be exploratory and theory building in nature because it involved using constructs and measures that were new in this research setting to test theory that is relatively new to the entrepreneurship literature. Analysis of variance (ANOVA) is the appropriate analytic tool for testing theory at early stages of development, when research questions are more concerned with the existence of relationships than with their strength (Pedhazur & Schmelkin, 1991).

To examine the relationship between arrangements, willingness, and ability scripts and the venture creation decision, the summed scales used to measure arrangements, willingness, and ability scripts were recoded into high, medium, and low categories. We accomplished this by assigning at least two values at the midpoint of the scale to the medium category and at least three values to each of the high and low categories. This approach, adopted to minimize the loss of explanatory power in the categorization process, resulted in similar group sizes (of at least 26 percent of the total respondents each).

For tests of the hypotheses relating to cultural values, individualism and power distance were recoded into high, medium, and low country groupings on the basis of the proximity of country scores in Hofstede's (1980) table of individualism/power distance and in light of the need for groups to be big enough to analyze. The United States, Canada, and Australia comprised the high-individualism group, Japan and Mexico the medium-individualism group, and Chile and China the low-individualism group. The power distance groups included the United States, Canada, and Australia (low), Japan and China (medium), and Chile and Mexico (high).

RESULTS

General factorial analysis of variance (Table 5) was used to examine the relationships among arrangements, willingness, and ability scripts and the venture creation decision, as posited in Hypotheses 1a–1f. Together, the three cognitive script variables explain 13 percent of the variance in the venture creation decision (after age and experience covariates are accounted for). Although modest when

TABLE 2
Means, Standard Deviations, and Correlations for Modeled Constructs

Variable	Mean	s.d.	1	2	3	4	5
1. Individualism	58.07	29.32					
2. Power distance	53.02	16.13					
3. Arrangements scripts	3.33	1.48	−.06	.06			
4. Willingness scripts	4.88	2.14	−.00	.05	.18***		
5. Ability scripts	4.18	1.99	−.07	.15***	.37***	.26***	
6. Venture creation decision	0.30	0.46	.08*	.05	.27***	.16***	.24***

* $p < .05$
*** $p < .001$

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TABLE 3
Means, Standard Deviations, and Correlations for Conceptualized Script Dimensions

Variable	Mean	s.d.	Correlations		
			Individualism	Power Distance	Venture Creation Decision
Arrangements scripts					
Protectable idea	0.65	0.74	−.22***	.17***	.07
Resource access	0.56	0.50	.27***	−.20***	.15***
Resource possession	1.77	0.89	.04	−.05	.28***
Venture-specific skills	0.34	0.47	−.19***	.27***	.06
Willingness scripts					
Seeking focus	2.21	1.18	−.02	.06	.13***
Commitment tolerance	1.93	1.14	.13***	−.07*	.13**
Opportunity motivation	0.73	0.76	−.16***	.15***	.06
Ability scripts					
Situational knowledge	0.60	0.69	−.16***	.13***	.05
Opportunity recognition	1.77	0.91	.02	−.05	.13***
Ability fit	0.99	0.87	−.21***	.34***	.15***
Venturing diagnostic ability	1.05	0.91	.15***	−.05	.20***

* $p < .05$
** $p < .01$
*** $p < .001$

compared to other social science research results, this explanatory power is reasonably good for exploratory research in the relatively new international entrepreneurship domain, where little has been explained (Busenitz & Lau, 1996), and it suggests that the cognitive perspective on entrepreneurship might be fruitfully applied in future research.

In support of Hypotheses 1a and 1c, significant main effects were found for arrangements scripts ($p = .003$) and ability scripts ($p = .019$), but not for willingness scripts ($p = .258$). Also, a significant interaction effect was found for arrangements and willingness scripts ($p = .033$), supporting Hypothesis 1d. Support was not found for Hypotheses 1e and 1f, as the interaction effects involving ability scripts ($p = .131$ with arrangements; $p = .549$ with willingness) were not significant. This finding provides evidence in support of Leddo and Abelson's (1986) premise that arrangements scripts are a privileged function (1986: 121), in that doing-related scripts (willingness) presuppose entry scripts (arrangements). The finding that willingness scripts are only significant in the interaction with arrangements scripts (Table 5, lower portion) and that this effect is not significant when only main effects are considered (Table 5, upper portion) adds credence to the precedence relationships suggested by Leddo and Abelson (1986).

We used multiple analysis of variance (MANOVA) to examine hypothesized relationships relating to cultural values. The significant multivariate *F*-statistics for both individualism and power distance ($p = .001$) indicate that cultural values do affect cognitive scripts, as theory suggests (Table 6). Specifically, willingness and ability scripts differ between at least two individualism country groupings ($p = .001$ and $p = .005$, respectively). Ability scripts ($p = .000$) differ between at least two power distance country groupings. Although extensive examination and interpretation of differences at the country and subscale level is perhaps warranted for theory development, such a process is beyond the scope of this study, and we simply report the observed differences in the footnote to Table 6.

Given the theory advanced in support of Hypothesis 2, our finding that culture affects cognitive scripts is not surprising. What is somewhat surprising is that arrangements scripts did not significantly differ across the individualism or power distance culture groupings ($p = .459$ and $p = .323$), and willingness scripts did not significantly differ across power distance groupings ($p = .078$). This finding may suggest that there is some commonality in the levels of arrangements scripts and, to some extent, willingness scripts, across cultures. However, an exploratory examination of relationships at the subscale level (Table 3) is illuminating. Arrangements scripts concerning protectable ideas and venture-specific skills are highly correlated with individualism and power distance, but the direction of the associations is opposite to that of the scripts concerned with resource access. This pattern suggests that differences in some arrangements scripts may be observed across cultures. Intuitively, it makes sense that arrangements scripts

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TABLE 4
Factor Analysis Results[a]

Variable		Factor 1	Factor 2	Factor 3	Factor 4
Arrangements scripts		**Protectable Idea**	**Resource Possession**	**Venture-Specific Skills**	**Resource Access**
V18	Resource possession		.51	.59	
V20	People and asset network		.84		
V45	Network utilization		.44	−.52	.37
V35	Patent protection	.82			
V14	Other protection	.77			
V47	Venture vs. general skill set			.72	
V36	Venture network accessibility				.92
	Percentage of variance explained	20.8	17.7	15.9	13.9
Willingness scripts		**Seeking Focus**	**Opportunity Motivation**	**Commitment Tolerance**	
V41	Comfort in new or familiar situations	.62			
V33	Action orientation	.61			
V37	Open to possibilities or settled	.67			
V38	Action orientation	.50			
V7	Risk orientation		.71		
V12	Time values		.78		
V31	Commitment values			.73	
V28	Investment values			.47	
V32	Investment orientation			.65	
	Percentage of variance explained	20.6	13.2	11.8	
Ability scripts		**Situational Knowledge**	**Ability/ Opportunity Fit**	**Opportunity Recognition**	**Venturing Diagnostic Ability**
V16	Normative knowledge base	.69			
V29	Success attribution	.62			
V48	Opportunity recognition		.33	.54	
V11	Problem recognition			.70	
V40	Venture success scripts			.61	
V4	Time investment criteria	−.30	.67		
V44	Locus of investment criteria	.34	.67		
V42	Venture vs. business knowledge base	.37	.31		−.26
V9	Diagnosis from specific situations		.31		.66
V19	Delineation of knowledge base				.70
V27	Awareness of venture situations	.38			.35
	Percentage of variance explained	15.4	11.0	10.0	9.4

[a] Cross-loading items were not removed from the analysis because summed scales were appropriate at this stage of theory testing. Loadings of less than .25 are suppressed.

are common to an international culture of venture expertise but that specific arrangements scripts will differ across countries and cultures. Similar subscale differences are observed for willingness and ability scripts (Table 3), suggesting a need for further refinement of cognition theory as it is applied to questions of entrepreneurial scripts and a need for research at a lower level of abstraction.

In our examination of Hypothesis 3, we found partial support for the moderating effect of cultural values (Table 7). As evidenced by a significant interaction effect (p = .000), individualism was found to moderate the relationship between arrangements scripts and the venture creation decision. Power distance was also found to moderate the relationship between arrangements scripts and the venture creation decision (p = .005). Individualism and power distance did not moderate the relationship between ability scripts and the venture creation decision (p = .166, p = .059, respectively)

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TABLE 5
Results of Analysis of Variance: Venture Creation Decision

Variable	*F*	*df*	*p*
Direct effects			
Main effects			
Arrangements scripts	6.4	2	.002
Willingness scripts	2.5	2	.080
Ability scripts	7.2	2	.001
Covariates			
Age	30.3	1	.000
Experience	36.0	1	.000
Overall R^2	.23		.000
Main effects R^2	.10		.000
Interaction effects			
Main effects			
Arrangements scripts	6.0	2	.003
Willingness scripts	1.4	2	.258
Ability scripts	4.0	2	.019
Covariates			
Age	29.3	1	.000
Experience	36.8	1	.000
Two-way interactions			
Arrangements × willingness	2.6	4	.033
Arrangements × ability	1.8	4	.131
Willingness × ability	0.8	4	.549
Overall R^2 [a]	.26		.000
Main effects R^2	.13		.000

[a] The change in R^2 (.26 − .23 = .03) is significant at the .05 level (based on Miller's *F*-test). Controlling for the effects of differences in general business experience necessitated dropping 76 cases with missing values from the analysis. The resulting 677 cases include 184 U.S. cases, 131 Canadian cases, 58 Australian cases, 102 Mexican cases, 23 Chilean cases, 32 Japanese cases, and 147 Chinese cases.

or the relationship between willingness scripts and the venture creation decision ($p = .185$, $p = .420$, respectively). However, the moderating effect of power distance might have been significant for willingness scripts and the venture creation decision ($p = .059$) with greater statistical power in the study. These findings, although mixed, further support the privileged position of arrangements scripts and suggest that the influence of arrangements scripts on the venture creation decision differs across groups of Pacific Rim countries. How these arrangements scripts differ is an important question requiring future investigation.

DISCUSSION

This study was undertaken to answer two research questions: First, how are the venturing scripts of individuals related to their venture creation decisions? And second, to what extent do these scripts vary by culture? To address these questions, we based a cross-sectional, cross-cultural, cognitive model of venture creation on social cognition and expert information processing theory and tested it in seven Pacific Rim countries. The study is limited by the early stage of development in theory and measures, by the sampling frame, and by reduction in statistical power through the use of categorical variables in the ANOVA and MANOVA analyses. Further, because of the cross-sectional nature of the study, the testing of causal links between the cognitive script variables and the venture creation decision was not possible. Accordingly, some caution is warranted in the interpretation of the results of this one exploratory study. Our results are somewhat conservative, however, since the study did not examine the effects of regional economic, industry, or venture type, or of other contextual influences on the nature of the cognitive scripts used in the analysis. Thus, less variance may have been explained than might otherwise have been possible.

Despite these limitations, the study was successful in demonstrating that cognitive scripts explain a significant amount of variance in venture creation decisions, that at least some cultural values are related to certain of these scripts, and that in some cases, cultural values also moderate the cognition–venture creation decision relationship. Although we were unable to test causality in this study, the results are consistent with theory that suggests that entrepreneurs in different cultures look first to arrangements scripts to evaluate potential entry into the venture creation decision process, and only then utilize doing-related scripts. We further found that the pervasive influence of arrangements scripts is unaltered by the cultural values of individualism and power distance, which moderate the relationship between arrangements scripts and venture creation decisions. In contrast, ability scripts and, to some extent, willingness scripts appear to be impacted by individualism and power distance cultural values, suggesting much more cultural permeability in the enactment (doing) portion of the venture creation script. This finding is consistent with the wide variety of venturing practices that can be observed across borders. These results have implications for and contribute to social cognition, expert information processing, and entrepreneurship research.

Social cognition theory is now being used to assess the impact of the ways that people think on decision making (Walsh, 1995). The controversy in expert information processing theory over the role of innate individual differences has not yet been resolved, nor have the types of acquired cognitive mediating mechanisms that are similar across do-

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TABLE 6
Direct Effects of Cultural Values: Multiple Analysis of Variance[a]

Variable	Multivariate *F*	Univariate *F*		
		Arrangements Scripts	Willingness Scripts	Ability Scripts
Individualism	4.0 (.001)	0.8 (.459)	7.4 (.001)[b]	5.3 (.005)[c]
Power distance	3.6 (.001)	1.1 (.323)	2.6 (.078)	9.3 (.000)[d]

[a] Values are Wilks's lambdas, with *p*-values in parentheses.
[b] Country group 1 (Chile/China) was significantly lower on willingness scripts than group 2 (Mexico/Japan) or group 3 (U.S./Canada/Australia);
[c] Country group 2 (Mexico/Japan) was significantly higher on ability scripts than group 1 (Chile/China) or group 3 (U.S./Canada/Australia);
[d] Country group 3 (Chile/Mexico) was significantly higher on ability scripts than group 1 (U.S./Canada/Australia) or group 2 (Japan/China). The smallest country grouping (Chile/Mexico) had 179 cases.

TABLE 7
Moderating Effects of Cultural Values: Analysis of Variance

Variable	*F*	*df*	*p*
Individualism			
Main effects			
Arrangements scripts	3.5	2	.030
Willingness scripts	1.3	2	.258
Ability scripts	8.0	2	.000
Interaction effects			
Arrangements × individualism	5.4	4	.000
Willingness × individualism	1.6	4	.185
Ability × individualism	1.6	4	.166
Covariates			
Age	32.2	1	.000
Experience	38.5	1	.000
Overall R^2	.27		.000
Main and interaction R^2	.14		.000
Power distance			
Main effects			
Arrangements scripts	3.3	2	.037
Willingness scripts	1.2	2	.300
Ability scripts	8.3	2	.000
Interaction effects			
Arrangements × power distance	3.8	4	.005
Willingness × power distance	1.0	4	.420
Ability × power distance	2.3	4	.059
Covariates			
Age	29.9	1	.000
Experience	37.7	1	.000
Overall R^2	.27		.000
Main and interaction R^2	.14		.000

mains been fully explored (Ericsson, 1996). We find support in the venturing context for the Leddo and Abelson (1986) notion that arrangements, willingness, and ability scripts are constructs central to an explanation of the decision to organize and that arrangements and ability scripts are similar across cultures in their effects on the venture creation decision. We nevertheless find differences across cultures in the levels and nature of willingness and ability scripts that focus attention upon the innate versus acquired issue in expert information processing theory.

Within entrepreneurship research there exists a real and continuing need for additional theory building (MacMillan & Katz, 1992). Within international entrepreneurship research, especially, there is a need for new theoretical frameworks that "might help to organize and clarify the seemingly disparate mass of empirical results" about key outcomes (McDougall & Oviatt, 1997: 302). In this article, we expand the emerging cognitive perspective on entrepreneurship to argue that scripts not only explain behavioral differences between entrepreneurs and nonentrepreneurs (Baron, 1998; Busenitz & Barney, 1997; Simon et al., 1999) but also explain similarities in venture decision making among entrepreneurs across cultures. We find that the multitude of apparently heterogeneous phenomena that have in the past been thought to affect the venture creation decision of individuals in various countries may in reality form the elements of a coherent cognitive model. Risk taking, for example, has been suggested as a personality trait that influences the venture creation decision, but with equivocal results (Brockhaus, 1980). A cognitive explanation would suggest that the use of expert arrangements, willingness, and ability scripts reduces uncertainty, thereby reducing risk. Therefore, what has been thought of as risk-taking behavior may in reality be a manifestation of particular scripts (Heath & Tversky, 1991). Our exploratory findings of consistency in entrepreneurial scripts across cultures (at least at the macro level) establishes additional empirical foundations for a cross-cultural cognitive theory of entrepreneurship, offering help in healing a fractured field. For

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example, our findings suggest possibilities for the resolution of some theoretical difficulties that have arisen as resource-grounded strategic explanations have competed with personalistic theories of the entrepreneur to explain new venture performance (Herron, 1990; Sandberg, 1986).

This study further contributes to the field of entrepreneurship by illustrating one approach to the measurement of unobservable scripts. Description of the underlying structure of preliminary scales to measure arrangements, willingness, and ability scripts provides a foundation for further scale development as researchers proceed to assess recently developed cognitive models of entrepreneurship. Our findings of differential cognitive effects at the subscale level (based on simple correlation analysis) also suggest a need to capture more dimensions in the domain of arrangements, willingness, and ability scripts in order to more fully understand these effects. Nunnally (1978) suggested that theoretical progress proceeds no faster than do improvements in measurement methods. Our study is a modest contribution to this effort.

Our findings also have relevance in the substantive domain. For policy makers who are seeking the sources of long-term comparative advantages and disadvantages within specific countries (Barney, 1991; Porter, 1990) and who try to encourage or discourage particular behaviors, it is clear that venture creation decisions are made in light of arrangements scripts (however they are defined within a country). Thus, previous suggestions that the role of policy making is to improve the efficacy of the transacting environment are reinforced (Mitchell, 1992). For Pacific Rim entrepreneurs themselves, it is useful to know that, contrary to the conventional wisdom, their counterparts in the other countries represented here take arrangements into consideration as they make the venture creation decision, although, as discussed in the Results section, they do so in unique ways. Further, similarities in cognitive scripts across cultures provide a foundation and impetus for global start-ups (Oviatt & McDougall, 1995).

Where do these findings lead the cognition, entrepreneurship, and international entrepreneurship literatures? Our results invite cognition researchers to add one more field of expertise to the others that demonstrate the veracity of scripts/knowledge structures for explaining expert performance. Future researchers may productively address such questions as, What are the mechanics of script development in entrepreneurs? Are entrepreneur scripts similar to or different from those in other domains? Is entrepreneurial expertise susceptible to the creation of an expert system around it? Does the script cue measurement technique resolve operational difficulties in cognition research in unstructured and information-rich cognition environments (VanLehn, 1989)?

In view of the findings in this study, we now see the need for the entrepreneurship literature to move forward in the clarification and analysis of likely performance-enhancing scripts for the use of both practicing and potential entrepreneurs. As noted earlier in the article, the entrepreneurship literature contains many entrepreneurial cognition–based studies that emphasize or explain extraordinary behaviors of entrepreneurs (e.g., Baron, 1998; Busenitz & Barney, 1997; Simon et al., 1999). The introduction of expert information processing theory to the entrepreneurship literature (Mitchell, 1994; Mitchell & Chesteen, 1995; Mitchell & Seawright, 1995) that has been confirmed and extended in this study suggests a path toward the further analysis and explanation of the high-performance behaviors of entrepreneurs as well. Should replication and validation continue to show positive results, the power of expert information processing theory (e.g., Glaser, 1984) to suggest clear maps for the education of future entrepreneurs represents a major stride toward resolving the "Can entrepreneurship be taught?" question, and it suggests fruitful directions for future research in the area of entrepreneurship education. Further, as also noted earlier in this article, our results confirm other work that has identified three quite similar cognitive factors that relate to entrepreneurship intentions. This raises the possibility of an underlying order in economics-based scripts and suggests the need for a rigorous theoretical investigation of the principles that explain this seemingly stable finding.

For the international entrepreneurship literature, our study suggests several specific questions that are in need of investigation. To what extent do cross-border scripts lead to cross-border organizations? Oviatt and McDougall (1995) suggested that the likelihood of global start-ups is higher where individuals have prior international exposure. How does this finding relate to our suggestion that there may exist a global, more universal culture of entrepreneurship? Another area where further investigation is called for is determining the extent of the cross-border cognitive map. Where are there similarities and differences? Do the differences have a theoretical order in the same way that the similarities appear to? Finally, we see a real need to investigate the extent to which cross-border scripts lead to globalization in general. Can the cognitive view of international entrepreneurship provide additional theoretical and empirical links between the information revolution and globalization process?

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To conclude, our theory and methods, given their facility to resolve anomalies, simply relate previously unconnected issues, overcome theoretical difficulties, and be more easily tested (Popper, 1979: 46–48), offer new paths for research and for understanding venture creation decisions in a cross-cultural setting. Specifically, the task of improving the psychometric validity of script cue measures holds promise for the explanation of more variance in cross-cultural cognition models. Theoretically, the domain of the higher-order constructs of arrangements, willingness, and ability scripts needs to be enriched through the inclusion of more dimensions and examination at a lower level of abstraction. Practically, our findings suggest that cross-cultural differences may not be as pronounced as previously believed and that similarities across cultures may in fact be driving globalization—which, coincidentally, seems to accelerate with every improvement in information technology. To improve understanding of the enablers and disablers of venture creation, researchers might productively investigate the impact of the similarities that we identified, and the potential new framing of differences.

With the rise of the global economy and the information age, international entrepreneurship—value creation that spans national borders (McDougall & Oviatt, 1997: 293)—has gained momentum, certainly faster than have the social science explanations for its intricacies. Yet, as Winston Churchill is reputed to have said, "It would be an inconvenient rule, if before anything could be done, everything had to be done." In this spirit, we, along with other scholars, have begun to propose models of global entrepreneurship that take the powerful theoretical engines provided by recent advances in the study of social cognition (Fiske & Taylor, 1984; Gist & Mitchell, 1992; Walsh, 1995) and information processing (Leddo & Abelson, 1986; Lord & Maher, 1990) and combine them with work in cross-cultural entrepreneurship (Busenitz & Lau, 1996; McGrath, MacMillan, & Scheinberg, 1992; McGrath, MacMillan, Yang, & Tsai, 1992; Mitchell & Seawright, 1995, 1998; Shane, 1996). The result is an exciting new field with myriad opportunities for scholarship that is based in the study of the border-spanning organizations that offer the promise of growth, new jobs, increased trade, and innovation for a new millennium. Our results suggest an outline for addressing at least some of these opportunities.

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APPENDIX
Questionnaire Items[a]

This questionnaire helps you to identify your personal approach to getting involved with a new business. Please CIRCLE THE LETTER (a) OR (b) TO SHOW THE ANSWER WHICH DESCRIBES YOU MOST CLOSELY.

Arrangements Scripts

Protectable idea

14. My new venture is/will be: a) protected from competition by patent, secret technology or knowledge; or b) based on a product or service with no "barriers to entry."
35. My new venture is/will be: a) protected from competition by franchise or other territory restrictions; or b) based on a product or service which may experience a lot of competition.

Venture network

36. I could: a) raise money for a venture if I didn't have enough; or b) provide an investor with a lot of very good ideas for a new venture.
45. I: a) can often see opportunities for my plans to fit with those of other people; or b) rarely find that results match what I expect.[b]

Resource possession

18. 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.
20. In the last 3 years: a) the size of the pool of people and assets I control has grown; or b) I have not extended my business control over people or assets.

Venture-specific skills

47. I am very: a) good at a specialty that is in high demand; or b) well-rounded, with broad expertise in a variety of areas.

Willingness Scripts

Seeking focus

33. Would you say you are more: a) action oriented; or b) accuracy oriented.
37. Do you want things: a) open to the possibilities; or b) settled and decided.
38. I have: a) enormous drive, but sometimes need others' help to complete projects; or b) a high respect for service, generosity, and harmony.
41. Are you more comfortable in: a) new situations; or b) familiar territory.

Commitment tolerance

28. If you had additional money to put to work, would you put it into a venture: a) where you have a "say," even if there is no track record; or b) managed by those you trust, who have a proven track record.
31. I don't mind: a) being committed to meet a regular payroll if it means that I can have a chance at greater financial success; or b) giving a little of the value I create to the company that hired me.
32. I am looking for a: a) place to invest my resources; or b) better way to manage my resources.

Opportunity motivation

7. When investing in a new venture, I think it is worse to: a) wait too long, and miss a great opportunity; or b) plunge in without enough information to know the real risks.
12. Is it worse to: a) waste your time thinking over an opportunity; or b) commit time and money to a cause that may not succeed.

Ability Scripts

Ability/opportunity fit

4. If asked to give my time to a new business I would decide based on how this venture fits: a) into my past experience; or b) my values.
42. I feel more confident: a) that I know a lot about creating new ventures; or b) in my overall business sense.[c]
44. When I see a business opportunity I decide to invest based upon: a) how closely it fits my "success scenario"; or b) whether I sense that it is a good investment.
48. I often: a) see ways in which a new combination of people, materials, or products can be of value; or b) find differences between how I see situations and others' perspective.[d]

Venturing diagnostic ability

9. When confronted with a new venture problem I can: a) recall quite vividly the details of similar situations I know about; or b) usually figure out what to do, even if it is by trial and error.
11. When someone describes a problem with a new business I: a) recognize key features of the problem quickly, and can suggest alternatives from examples I can cite; or b) use my instincts to suggest questions which should be asked to solve the problem.[d]
19. New ventures, small business, and entrepreneurship: a) are distinctly different disciplines; or b) have much in common, especially the need for sharp guesswork.
27. I am more: a) aware of many new venture situations, some which succeeded, and others which failed, and why; or b) familiar with my own affairs, but keep up on business in general.[c]

Venture situational knowledge

15. It is more important to know about: a) creating new ventures; or b) business in general—staying diversified.
29. New venture success: a) follows a particular script; or b) depends heavily on the pluses and minuses in a given situation.
40. The new venture stories I recall: a) illustrate principles necessary for success; or b) are a telling commentary on the foibles of human nature which can rarely be predicted.[d]

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[a] The instructions and items are presented verbatim. Item numbers correspond to the variable numbers in Table 4.

[b] This item loaded on resource possession and venture-specific skills.

[c] These items cross-loaded on situational knowledge.

[d] These items formed a unique factor, opportunity recognition.

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Ronald K. Mitchell, holder of the Francis G. Winspear Chair in Public Policy and Business at the University of Victoria, received his Ph.D. from the University of Utah. His research interests focus on increasing individual economic independence in society—both domestically and internationally—through the study of entrepreneurship, the exploration of stakeholder theory, and the development of transaction cognition theory.

Brock Smith is an associate professor in the Faculty of Business at the University of Victoria. He received his Ph.D. from the University of Western Ontario. His research interests include entrepreneurship, marketing strategy, and relationship marketing.

Kristie W. Seawright is an assistant professor in the Marriott School of Management at Brigham Young University. She received her Ph.D. from the University of Utah. Her research interests include international operations management and entrepreneurship.

Eric A. Morse is an assistant professor in the Faculty of Business at the University of Victoria. He received his Ph.D. from Texas Tech University. His principal areas of research interest are entrepreneurial strategy, sustainability of the entrepreneurial venture, and corporate venturing.

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