

CCSBE 24th Annual Conference

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**Transacting decisions and cognitive differences:
Implications for the US-Canada softwood lumber dispute**

TRANSACTIONING DECISIONS AND COGNITIVE DIFFERENCES: IMPLICATIONS FOR THE US-CANADA SOFTWOOD LUMBER DISPUTE

This study explores the cognitive antecedents of the propensity to transact—a leading indicator of the national stock of venture formation capability and a potentially important element in proceeding toward the resolution of the present softwood lumber dispute. ANCOVA and MANOVA analysis of data from a cross-sectional sample of 417 respondents finds evidence that Arrangements, Willingness, and Ability Scripts are related to the Propensity to Transact within countries, but that differences exist between the countries in the level and content of Arrangements and Ability Scripts. Public policy and theory-building implications for the study of decisions to transact (or to resume transacting) using the cognition perspective are discussed.

The Softwood Lumber dispute has proven to be the most important trade conflict between Canada and the USA in terms of trade volumes, complexity, procedures, politicization and duration and poses a threat to the smooth operation of the NAFTA trade agreement (Gagne, 1999). Inherent in trade agreements is the structural imperative to include a dispute resolution mechanism (DRM)—strong countries seeking a DRM that only exhorts, and weak countries seeking one that binds strong and weak alike—that in NAFTA appears to be poorly suited to resolving difficulties relating to subsidies (Reisman & Wiedman, 1995: 5). Confirming this assessment are results from both the binational panel and the extraordinary challenge committee, which have both divided along national lines (Gastle & Castel, 1995: 823). This leads us to wonder whether there is a nation-based approach to transacting that affects economic relationships that affects decisions about transacting, since it is well known that disputes arising from some basis in fact usually remain unresolved for personal/cognitive reasons such as the attitudes and stance of the parties (Fisher & Ury, 1981).

The cognitive perspective in business research is receiving increased attention within the literature. First, business cognitions have been shown to vary systematically (McGrath & MacMillan, 1992; McGrath, MacMillan, & Scheinberg, 1992). Second, cognitive constructs relating to information processing biases and short-cut heuristics have been found to differentiate certain

behaviors of entrepreneurs as transaction initiators, from those of non-entrepreneurs (Baron, 1998; Busenitz & Barney, 1997; Simon, Houghton & Aquino, 1999). Third, cognition theory has begun to be used to examine arrangements, willingness, and ability scripts that are related to the venture creation decision. (Mitchell, Smith, Seawright & Morse, 2000).

This paper extends the work of Mitchell, et al. (2000, 2002) by examining differences in the content of cognitive scripts of entrepreneurs and business nonentrepreneurs within the three NAFTA countries (Canada, Mexico, USA). In the analysis, we produce a descriptive foundation that permits us to examine differences in cognitive stance between the parties to the softwood lumber dispute, upon which public policy, theory-building, and measurement improvements can be based.

BACKGROUND

The Dispute

The Canada-US softwood lumber dispute began in 1983 when US authorities first considered whether Canadian lumber exports were subsidized, the main issue being whether fees charged by provincial authorities to lumber firms to harvest trees on public lands (stumpage rights) were artificially low and constituted countervailable subsidies. Canada has insisted that this is a matter of public policy, which has nothing to do with trade and subsidization. The conflict started initially when the US authorities concluded in 1986 that stumpage rights were specific and insufficient, and, as a result, could be subject to countervailing duties. For the US, it was essential to protect a major industry, which was under direct competitive threat from unfairly subsidized exports; but for Canada, the US was arbitrarily and unilaterally deciding how provincial government should tax and manage their resource industries (Gagne, 1999).

Conceptual Foundations

Because we are investigating differences in cognitive stance between the parties to the softwood lumber dispute, the general theories of social cognition, information processing, and expertise, provide foundations for this study. Cognitions have been defined as all processes by which sensory input is transformed, reduced, elaborated, stored, recovered, and used (Neisser, 1967). Social cognition theory considers that individuals exist within a total situation or *configuration of forces* described by two pairs of factors: one being *cognition* and *motivation*, and the other being the *person* in the *situation* (emphasis in original) (Fiske & Taylor, 1984: 4-5). Individual information processing is thought to be associated with individual decision making within a total situation. A cognitive account of the manner in which decision-making information is acquired, stored, and retrieved from the long term memory of individuals is provided by information processing theory, using explanations involving knowledge structures, or scripts (Leppo & Abelson, 1986; Lord & Maher, 1990).

Information processing theory suggests that one category of individual scripts—expert scripts—allow experts to outperform others in a given domain such as business (Ericsson, 1996). Specifically, experts are expected to have more highly developed scripts, which can be accessed more readily to make more appropriate venturing decisions (Glaser, 1984; Read, 1987). These scripts are thought to result in higher degrees of self-efficacy assessment, and behavioral intent (e.g. intention to venture), and behavior (e.g. the venture creation decision) (Gist & Mitchell, 1992). Expert scripts are comprised of highly developed, sequentially ordered, action-based knowledge in a specific field (Glaser, 1984; Read, 1987), and as such may be defined as *action-based knowledge structures*. Expert scripts are distinct from and should not be confused with dramatic (Goffman, 1959), forecasting (Shoemaker, 1993), or transactional (Berne, 1976) scripts.

But not all scripts are expert scripts. Often, individuals in decision-making situations draw upon scripts that are not fully developed (e.g. novice scripts, Glaser, 1984), which accounts for information

processing-based thinking errors (Walsh, 1995). One of the problems confronting scholars who are attempting to develop a cognitive account of business transacting is the potential for confusion in differentiating expert from novice scripts (Mitchell, 1994). It is not clear what scripts experts use to make the venture creation decision, or to outperform other individual would-be entrepreneurs. The content of scripts thus becomes a focal research issue in furthering our understanding of business cognitions.

Leddo & Abelson (1986) suggest three content areas where the decision-making cognitions of individuals might be observed. In their study, the scripts of individuals were found to emphasize the adequacy of script “entry” *arrangements* (e.g., does an artisan possess or have access to the tools of the trade and the required materials?). In later stages of a script sequence, individuals were found—while retaining their concern for arrangements—to emphasize “doing” or enacting script requirements, which implicates motivation/*willingness*, and the *ability* of individuals to carry out the main goal of the script (e.g., given tools and materials, will the artisan choose to, and be able to do the work?).

Mitchell et al. (2000) found support for this model in the business context, and especially within the field of entrepreneurship, where new transaction streams are initiated, or innovative solutions to transacting problems appear with greater regularity. They found that arrangements, willingness, and ability scripts were associated with the venture creation decision within Pacific Rim countries. Cultural values of individualism and power-distance (Hofstede, 1980) were found to be associated with willingness and ability cognitive scripts, and to be associated with the venture creation decision through interaction with arrangements scripts. They found that both willingness and ability scripts differed among individualism country groupings, and that ability scripts differed among power-distance country groupings based on Hofstede (1980).

In their 2002 study, Mitchell, et al. examined three research questions concerned with entrepreneurial cognition and culture:

1. Do entrepreneurs have cognitions distinct from those of other business people?

2. To what extent are entrepreneurial cognitions universal?
3. To what extent do entrepreneurial cognitions differ by national culture?

and in an exploratory study including 990 respondents in eleven countries found:

- in answer to question one, that individuals who possess “professional entrepreneurial cognitions” do indeed have cognitions that are distinct from business non-entrepreneurs;
- in answer to question two, support for a universal culture of entrepreneurship; and
- in answer to question three,
 - (a) observed differences on eight of the ten proposed cognition constructs, and
 - (b) that the pattern of country representation within an empirically-developed set of entrepreneurial archetypes does indeed differ among countries.

Their findings provide a foundation for further examination of the content and structure of new venture expert scripts within the context of the softwood lumber dispute, since a detailed examination and interpretation of differences (e.g. at the country and sub-scale level) was beyond the scope of their 2002 study, and was indicated in their 2002 article.

Thus, similar to their 2002 study, further light may be shed on the content and structure of business expert scripts by addressing two key limitations of that study: (1) replacing their dichotomous dependent variable—the venture creation decision, which limited the analytic tools that could be applied—with a continuously scaled variable that captures expected outcomes (self-efficacy and behavior, etc.); and (2) a relaxation of their restrictive focus on culture-based groups of countries, which limited their ability to make within- and between-country comparisons.

Our study thus extends Mitchell, et al. (2000, 2002) by examining similarities and differences in arrangements, willingness, and ability cognitions across the three NAFTA countries covered by the trade agreement that provides the operating conventions upon which the resolution of the softwood lumber dispute will be based. In this study, we address the following research questions: What

cognitive thinking structures (mental scripts) are associated with high levels of transacting expertise generally, and what scripts are unique to each country? To answer these questions we conduct a detailed examination of the script content that is specific to the decision to begin or to resume transacting. From this descriptive foundation, we are then able to evaluate the public policy and theory building implications of the findings, and identify the next steps necessary in the identification and analysis of performance enhancing business cognitive scripts.

CONCEPTUAL MODEL

The Propensity to Transact

The outcomes of cognitive processes in business, which might generally be referred to as the propensity to transact, include higher degrees of self-efficacy assessment and behavior which have been related to the likelihood to take action (Gist & Mitchell, 1992). In our study the propensity to transact as the outcome variable reflects individual's assessments of their capability to perform (Ericsson & Charness, 1994) within the business domain in terms of both the foregoing (self-efficacy), and subsequent business behavior such as actually transacting. The Propensity to Transact over time involves competence (Ericsson, 1996: 3) in effecting venturing that result from the cumulative effects of learning (Glaser, 1984; Read, 1987), practice (Ericsson, Krampe, & Tesch-Romer, 1993), and experience (Chi et al., 1982; Lord & Maher, 1990).

The propensity to transact is important, because economic outcomes depend upon the entrepreneurs taking action in the transaction initiation or resumption process (Cooper, 1993; Herron & Robinson, 1993). Furthermore, the stock of transacting propensity (e.g., that results in venture initiation) in an economy is a leading indicator of its potential for business activity (Shane, 1993, 1996).

New Transacting Scripts

New transacting scripts are action-based knowledge structures within the business domain. They are appropriately conceptualized as antecedents of the propensity to transact, rather than as dimensions or components of such expertise, because scripts are not formed as a result of expertise. In fact, the reverse is more theoretically correct (Glaser, 1984). Scripts are thought to determine whether an individual has the capability to perform at high levels (Lord & Maher, 1990). Scripts are process and content-based variables involving sequences of action and norms of behavior that lead to expert action (Read, 1987). Following Mitchell, et al. (2000) we conceptualize three scripts that are expected to lead to new or resumed transacting: arrangements, willingness, and ability.

Arrangements scripts. Arrangements scripts are the knowledge structures that individuals have about the contacts, relationships, resources, and assets necessary to form new economic relationships. We find evidence of at least four arrangements scripts in the business and entrepreneurship literature—those concerned with: (1) idea protection (Porter, 1985; Rumelt, 1987), (2) having an appropriate network (Aldrich & Zimmer, 1986; Bull & Willard, 1993; MacMillan, 1983), (3) having access to general business resources (Bull & Willard, 1993), and (4) the possession of specific skills (Cooper & Dunkelberg, 1987). Arrangements scripts about idea protection are concerned with knowledge and use of patents, copyrights, franchise agreements, contracts, and other isolating arrangements that serve to prevent imitation (Rumelt, 1987). Arrangements scripts about creating appropriate networks concern knowledge about access to essential social contacts (Aldrich & Zimmer, 1986). Scripts about possessing or having access to resources include thoughts about controlling or having access to financial and human capital, and other business assets and resources necessary for new transaction formation (Bull & Willard, 1993; Glade, 1967). Finally, venture specific skills scripts relate to the extent to which a prospective entrepreneur

recognizes the capabilities that serve to provide sustainable competitive advantage for a new venture (Barney, 1991).

Willingness scripts. Willingness scripts are the knowledge structures that underlie (inform) the commitment to venturing into new transactions, and receptivity to the idea of starting or resuming an economic relationship. They include actionable thoughts about: (1) opportunity seeking (Kirzner, 1982; Krueger & Brazeal, 1994), (2) commitment tolerance (Ghemawat, 1991; Hisrich, 1990), and (3) opportunity pursuit (McClelland, 1968; Sexton & Bowman-Upton, 1985). Willingness scripts that focus on opportunity seeking are concerned with an openness, orientation, and drive to seek out new situations and possibilities and to try new things. Commitment tolerance scripts include thoughts about “putting your money where your mouth is” and the assumption of the risk and responsibility of new transaction 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.

Ability scripts. Ability scripts are the knowledge structures that individuals have about the capabilities, skills, knowledge, norms and attitudes required to create a venture (Bull & Willard, 1993; Herron & Robinson, 1993). At least three scripts relating to ability appear in the business literature: (1) diagnostic scripts, (2) situational knowledge scripts, and (3) opportunity recognition scripts. Transaction 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, opportunity recognition 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).

Hypotheses

Expert information processing and business theory suggest that those who are successful in creating new transaction streams might be expected to: (1) more appropriately utilize arrangements scripts about idea protection, venture networks, resource access, and venture specific skills; (2) have more highly developed willingness scripts relating to opportunity seeking, commitment tolerance, and opportunity pursuit; and (3) rely upon ability scripts to enact the “doing” of individual plans, such as in assessing the condition and potential of ventures, in drawing on and applying lessons learned in a variety of ventures, and in being able to see the need for, and to create value (Mitchell, 1994; Mitchell & Chesteen, 1995; Leddo & Abelson, 1986: 121). Individuals with less propensity to make the decision to initiate transacting, including those who may have expertise in other business domains, are not expected to have arrangements, willingness, or ability scripts that are as fully developed as those with such expertise (Glaser, 1984). As a result non-experts are less likely to possess the self-efficacy or behaviors evidenced by experts. Further, previous findings have demonstrated that some entrepreneur/non-entrepreneur cognitions vary systematically by business involvement rather than by culture (McGrath & MacMillan, 1992; McGrath, MacMillan, & Scheinberg, 1992). As higher-order human cognition constructs, arrangements, willingness, and ability scripts are expected to be important antecedents of the propensity to transact across countries and cultures, there is reason to expect that:

Hypothesis 1: Arrangements, Willingness, and Ability Scripts will be positively related to the level of the Propensity to Transact, regardless of country of origin.

Although arrangements, willingness, and ability scripts are expected to be related to transaction initiation expertise across the NAFTA countries, the relative importance of these cognitions may differ “between countries” due to differences in cultural values, norms, customs and procedures (Busenitz & Lau, 1996). Cultural values reflect the way human societies organize knowledge and social behavior

(Kroeber & Kluckhohn, 1952) into a fairly consistent, and limited, set of cognitive orientations that reflect “. . . a broad tendency to prefer certain states of affairs over others” (Hofstede, 1980: 19).

While it is well accepted that cultural values are an antecedent to human thought and behavior (Berry, Poortinga, Segall, & Dasen, 1992; Shweder, 1990), cultural values are also thought to affect business cognitions (Busenitz & Lau, 1996). Because each culture may have unique values, and norms about venture creation, new transacting scripts may be culturally specific. Thus, insofar as cultural differences exist between countries, the content (sequences and norms) of new transacting scripts may be country specific.

Arrangements, willingness, and ability scripts are also expected to differ by country because country specific political, economic, legal, technological, and social environments will determine what specific arrangements are necessary, what types of motivation and level of commitment are required, and what skills and knowledge are most relevant for venturing. Consequently, potential country effects of arrangements, willingness, and ability scripts on the propensity to transact are expected, as follows:

Hypothesis 2: The effects of Arrangements, Willingness, and Ability Scripts on the Propensity to Transact will vary by country.

Business cognition theory is not yet developed to the point where hypotheses can be made about which specific arrangements, willingness, and ability sub-scripts (e.g. idea protection; venture network, etc.) are likely to differ by country. Consequently this question is treated as empirical, and is explored in post-hoc analysis conducted at the sub-construct (factor) level. Following a description of the methodology, and hypothesis test results, an exploratory post-hoc analysis is presented. This provides a descriptive foundation for a discussion of implications for cognition and international business theory and measurement.

METHODS

Data Gathering

The hypotheses were tested using a cross-sectional sample of 417 respondents in the three NAFTA countries, all of whom had at least some business experience, and about a third of whom had started at least one venture. Consistent with the difficulty of accessing sampling frames for probability samples in international business research (McDougall & Oviatt, 1997: 303), a purposeful sampling approach was utilized. This approach relied on the combined judgment of the research team and local assistants to select, within countries, participants who reflected a range of business experiences, industries, education and ages. Respondents were business owners, entrepreneurs, mid-level employees from both public and private sectors, and in the Canada and the USA, included some business students (less than 15% of respondents were students and these were age 22 or older, and had work experience).

A self-administered, structured survey was personally delivered and retrieved from all participants by local assistants. This personal approach resulted in a 98% response rate. The instrument was pre-tested in each of the three countries (Mitchell, 1994; Mitchell and Seawright, 1995), and, to reduce the impact of translation errors, was translated into Spanish by a bilingual native of Mexico and back into English by a bilingual American. 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 pre-test.

Of the 417 respondents, 131 are from Canada, 102 are from Mexico, and 184 are from the USA. Approximately 75% of respondents are male. Respondents range in age from 22 to 71 years and the average age of respondents is 34.3 years in the Canadian sample, 31.8 years in the Mexican sample, and 34.0 years in the US sample. No significant differences were found in the mean age, sex, or past business experience of Canadian, Mexican, and US respondents. The extent of formal

education was also similar across countries. Typically, respondents held a University degree or college diploma, although the US sample had greater variability in formal education (more college diplomas and more graduate degrees represented). Respondents with greater new venture experience tended, on average, to be older than those with less new venture experience. Although age is not theoretically linked to the transacting or to venture cognitions (Reuber & Fischer, 1994), age could be an alternative explanation for level of expertise and was hence controlled for in subsequent hypothesis testing. Although the sample is not random, respondents are demographically similar in each country, and reflect the intended cross-section of business experiences, industries, education, and ages. Thus we conclude that the sample is suitable to address the research questions, at least in an exploratory fashion.

Measurement

Dependent variable. Consistent with the conceptualization of the construct, the propensity to transact was measured with five items that reflect a cognitive “comprehensive reality” that includes both self-efficacy and behavioral measures. This was accomplished using the sum of five standardized variables: (1) a self assessment of skills supporting the propensity to transact on a nine point semantic differential scale anchored by “novice” and “expert,” (2) a self rating of past transacting experience on a nine point semantic differential scale anchored by “limited” and “extensive,” (3) a dichotomous self assessment of new transaction knowledge, (4) a dichotomous activity measure of whether the respondent has started at least three successful new ventures, and (5) a second dichotomous activity measure of expertise based on a positive response to at least one of three descriptive statements: “I have started 3 or more businesses, at least one of which is a profitable ongoing entity,” or “I have started at least one business that has been in existence for at least two years,” or “I have significant career experience that makes me highly familiar with new venture

formation.” Because these items use different scale formats, they were standardized before being summed to form a continuous scale reflective of the Propensity to Transact. As evidenced by a Cronbach’s alpha of 0.81, the resulting scale exceeds Nunnally’s (1978) criteria of .70 for scale reliability in exploratory research.

Independent variables. Arrangements, willingness, and ability scripts were measured using an accepted script-scenario construction model (Read, 1987). This approach is based on the expert information processing theory premise that experts, when presented with problems or issues within their domain of expertise, will access their knowledge structures/scripts and select a response choice (cue) consistent with that script (Glaser, 1984: 99). Non-experts, being unable to access an appropriate expert script, are not expected to recognize the expert response choice and are more likely to choose a socially desirable (Crowne & Marlowe, 1964) distracter cue. Respondents were presented with paired statements and asked to select the one that describes them most closely. Both cues represent credible choices but only one indicates the existence of an expert level script.

Appropriate script and distracter cues (Appendix) were developed using expert panels, a review of the empirical business and expert theory literature (23 separate citations), and peer review (authors, 1994, 1995). Because the measurement of cognitions requires the observation of internal mental operations that are hidden from the observer, it becomes necessary to measure these mental operations using objects that represent the attributes (Posner, 1973: 92-93). The cues are therefore not the scripts, but are simply the evidence that the scripts exist. A variety of cueing formats (Read, 1987) were employed to capture the richness of cognitions that surround venturing (authors, 1994). Items and the wording of cues were refined based on these interviews, and previously noted pre-tests. Some cues, particularly those relating to arrangements scripts, were worded to reflect possession or outcomes, which also indicate the existence of the script. The cues were tested for face and external validity in

the substantive domain through interviews with practicing entrepreneurs and business non-entrepreneurs in each of Canada, Mexico, and the USA.

Script cue recognitions were scored “1” while non-recognitions were scored “0.” Because the individual items are independent pieces of evidence of the scripts, they are specified as being formative indicators (Pedhazur & Schmelkin, 1991: 54) and are added together to create interval scaled variables (Nunnally, 1978). Formative indicators define, or give rise to, the construct, but are not a reflection of it. As each item helps to define the meaning of a construct, affirmative responses to all items are not required from an individual respondent to capture construct meaning. For example, evidence of an increase in the pool of people and assets that a respondent controls (Appendix, Item 20), is one indication of a script relating to resource possession. However, a respondent may have a resource possession script that is based on the possession of other resources, and not about changes in their available pool of people and assets. 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 inter-item correlation (Howell, 1987: 121).

Consequently, principal components factor analysis was used to confirm the hypothesized dimensionality of each of the cognition constructs. Support (available from the authors) was found for the conceptualized dimensions of the Arrangements, Willingness, and Ability Scripts after five items were removed from the analysis due to low loadings on both intended and unintended constructs.

Data Analysis

The hypotheses were tested using Analysis of Covariance (H1) and Hierarchical Regression (H2), controlling for the effects of age, and for the first hypothesis, country. (Levels of the Propensity to Transact may differ by country, requiring that country effects be controlled for to properly test

Hypothesis 1.) ANCOVA is an appropriate analytic tool for testing theory at early stages of development, where research questions are more concerned with the existence of effects than with the relative strength of relationships developed in the conceptual model (Pedhazur & Schmelkin, 1991). Because ANCOVA requires categorical independent variables, the summed scales used to measure Arrangements, Willingness, and Ability Scripts were recoded into high, medium, and low categories of approximately equal size (each category had at least 20% of the responses). This was accomplished by assigning values in the midpoint of the scale to the medium category and assigning at least two values to each of the high and low categories. Three categories were chosen to minimize the loss of explanatory power in the categorization process, while maintaining groups of sufficient size to meet analytic assumptions. Although categorization decisions can influence results, the original interval scale independent variables were employed in the Hierarchical Regression analysis used to test hypothesis H2, and provide a check of the ANCOVA results.

{Insert Tables 1 and 2 about Here}

RESULTS

Hypothesis 1 was tested using ANCOVA (Table 1A). After accounting for the effects of age and country, Arrangements, Willingness, and Ability Scripts account for 50% of the variance explained (Table 1), and approximately 20% of overall variance. The main effects were all significant: Arrangements Scripts ($p=.000$), Willingness Scripts ($p=.014$), and Ability Scripts ($p=.000$), indicating strong support for Hypothesis 1: Arrangements, Willingness, and Ability Scripts are related to the level of the Propensity to Transact, regardless of Country of Origin (similar results were found using Hierarchical Regression – Table 1C, “All”). These results are consistent with Mitchell, et al. (2000), and in addition show significance for Willingness Scripts. As expected, both control variables were

also significant as covariates: Age ($p=.000$); Country of Origin ($p=.000$); but are more likely sample artifacts than substantive results.

Hypothesis 2 was tested using MANOVA (Table 1B). Similar to Mitchell, et al. (2000), mean values of Arrangements Scripts ($p=.026$) and Ability Scripts ($p=.000$) were found to be significantly different in at least two of the NAFTA countries but the mean of Willingness Scripts ($p=.120$) were not. This might suggest country differences in the content of some of the scripts for new transacting.

Evidence of differential effects of the script constructs on the Propensity to Transact is provided by post-hoc Hierarchical Regression (Table 1C), where at least one of the country level models was found to be significantly different than the all inclusive (NAFTA) model, based on Chow's test for pooling (Dillon & Goldstein, 1984). By dummy coding of country effects (Dillon & Goldstein, 1984: 247), the models were found to significantly differ with respect to Willingness Scripts. This construct was significant in the USA model at the .01 level but was not significant in the Mexican model ($p<.10$) or the Canadian model ($p>.10$). These MANOVA and Regression results indicate that while the higher order cognition constructs are related to the Propensity to Transact within the NAFTA countries, differences do exist between countries. Thus country-specific cognitions are likely to be important as the parties attempt to work together within a trading bloc—especially within the context of dispute resolution.

It is not clear from the *ex ante* tests, however, how the scripts differ among the NAFTA countries. Correlations between the sub-scales (factors) and the Propensity to Transact indicate that some Arrangements, Willingness, and Ability Scripts are more highly associated with the propensity to transact than others. We supposed that further exploratory analysis at the sub-scale level might thus be helpful in evaluating substantive results in the NAFTA countries (e.g., the potential for the propensity to transact to foster economic development), and to assist in theory building. Accordingly, we

conducted further post-hoc hierarchical regression analysis to better understand the composition of new transacting scripts within each country.

Block effects (Table 2A) indicate the contribution of each set of cognition variables, separately, beyond a base model that includes only respondent Age as an explanatory variable of the Propensity to Transact. Total effects (Table 2B) indicate which sub-scales are significant predictors of the Propensity to Transact, in a step-wise regression that examines all the blocks of variables in the same model. The block effects (Table 2A) indicate that the Arrangements and Ability Scripts blocks of variables are significant antecedents of the Propensity to Transact in each of the NAFTA countries. Arrangements Script factors explain 15% to 16% of the variance in the Propensity to Transact, beyond the base model (Age), in each of the NAFTA countries. Resource Possession is significant, at the .001 level in each of the models, and Protectable Idea and Venture Specific Skills (negatively) are significant at the .05 level in the USA model. Ability Script factors explain 8% to 12% of the variance in the Propensity to Transact beyond the base model (Age) in each country. Venture Diagnostic Ability is significant at the .01 level in each country, and Ability/Opportunity Fit is significant at the .05 and .001 levels in Canada and the USA, respectively. Willingness Script factors explain 6% of the variance in the Propensity to Transact beyond Age in the USA, but the block is not significant at the .05 level in the Canadian or Mexican samples. Seeking Focus and Commitment Tolerance are significant in the US sample at the .05 and .01 levels, respectively.

An explanation of these findings is provided by expert information processing theory. Leddo and Abelson (1986) suggest that in expert script enactment, individuals require both “entry” (arrangements) and “doing” (ability and willingness) scripts in a two-step sequence. Thus, according to theory, arrangements scripts are expected to occur first in the script enactment sequence, followed by ability and willingness scripts. The block effect findings are consistent with this theoretical expectation. Both script “entry” Arrangements Scripts, and “doing” Ability Scripts are found to be

significant in all three countries. The non-significance of Willingness Scripts in Canada and Mexico may indicate that venturing is less purposeful in these countries than in the USA. Alternatively, the conceptualization of Willingness Scripts may include a US bias (Hofstede & Bond, 1988) and might therefore not capture the full range of variance in this construct (Freeman, 1986). Venture willingness in Mexico, for example, may depend more upon interdependence, mutual responsibilities and loyalty, than upon the more individualistic notions of opportunity motivation captured in this study (DeForest, 1994: 34-35). Recent literature has also confirmed greater cultural differences between Canada and the USA than assumed previously (O'Grady & Lane, 1996: 309).

Total effects of the Script constructs were examined in Stepwise Regression (Table 2B) to isolate the Script factors salient to each country. Resource Possession Scripts are found to be significantly related to the propensity to transact in all three NAFTA countries ($p < .01$). Venture Diagnostic Ability Scripts are significant in the USA and Mexican models, at the .05 level, but not in the Canadian model, while Ability/Opportunity Fit Scripts are significant in the USA and Canadian models, at the .05 level, but not in the Mexican model. With greater statistical power, Protectable Idea Scripts may also have been significant in the USA model ($p = .055$). Venture Specific Skills continue to be significant only in the USA model ($p = .011$), and in an unexpected direction, perhaps indicating that venture expertise requires generalist rather than specialist skills in the USA. Lastly, the willingness factor, Seeking Focus, is significant only in the USA model.

These results further support the idea that different types of Arrangements, Willingness, and Ability Scripts are important in different countries. The finding that some scripts are significant when block effects are considered but not when total effects are considered may indicate interaction effects among the script constructs. Social cognition theory, however, suggests that interactions between ability, willingness and arrangements scripts may be critical to script enactment since enactment requires a total configuration of forces (both entry and doing scripts) (Fiske & Taylor, 1984: 4-5).

Arrangements scripts are therefore necessary for enactment of the venture creation decision but they are not likely to be sufficient. Without willingness scripts, there may not be sufficient motivation to enact arrangement scripts. Without ability scripts, there may not be sufficient skill to enact arrangement 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). Interaction effects were explored, post-hoc, using ANCOVA (controlling for age and country effects). None of two-way interaction effects were significant but the three-way interaction between Arrangements, Willingness, and Ability Scripts was significant ($p < .027$), beyond the significant main effects; consistent with social cognition theory.

In particular, the United States showed significant differences between Willingness Scripts, whereas Canada and Mexico did not. With respect to our research question (whether there is a nation-based approach to transacting that affects economic relationships that affects decisions about transacting), we sought to better understand the exact nature of such within country differences by conducting above-noted post-hoc regression analyses. The *post hoc* analyses prove most useful in improving our understanding of present stances in the dispute, as well as in creating suggestions for how to improve the dispute resolution mechanisms (DRM) in NAFTA.

Specifically, we find that the United States differs from Canada and Mexico in the significance of each higher-order construct. In the case of Arrangements Cognitions, Resource Possession ($p = .055^1$) is positively related to the Propensity to Transact, and Venture Specific Skills, ($p = .011$), is negatively related, whereas these constructs were not significant at all in our examination of the samples from Canada and Mexico. In the case of Willingness Cognitions, Seeking Focus ($p = .036$) is also positively related to the Propensity to Transact, while not being the case in Canada or Mexico. Additionally with respect to Ability Cognitions, both Mexico and the United States show significance

in Venture Diagnostic Ability ($p=.003$ in both samples), whereas Canada does not. These results have significant implications for making improvement in NAFTA DRMs.

DISCUSSION

In this study we set out to explore the cognitive antecedents of the propensity to transact within the NAFTA trading bloc, and between the participant countries: Canada, Mexico, and the USA. Arrangements, Willingness, and Ability Scripts were found to be important across the NAFTA countries but differences were found to exist in the relative importance of the scripts between countries. *Post hoc* exploratory analysis successfully identified the nature of some of these differences and their substantive importance. In this section of the article we first discuss the limitations of the study that qualify our results, and then proceed to develop the theoretical implications of our observations for the study of business, international business, and cross-cultural business cognitions.

Limitations and Qualifications

The implications of this study should be considered in light of study limitations. First, this study is exploratory in nature in that it applies relatively new theory, and examines new constructs in a business research context that is still in the early stages of development. Despite this, and the need for further measurement refinement, the study was successful in conceptualizing and measuring key transaction cognitions and in demonstrating their utility. Second, the study utilized a purposeful sample. However, we do not believe that this materially impinges upon the results as respondents in each country were demographically similar and reflect a cross-section of business experiences, industries, education levels, and ages. Use of a cross-sectional sample may even make the hypothesis tests conservative, as some venture cognitions may be industry specific. Finally, the focus of the study on the propensity to transact limits the generalizability of the findings to this particular domain. While the focus on the propensity to transact is a useful starting point for the development of a cognitive

¹ Approaching significance.

theory of venturing, venture success—of which the propensity to transact is but a leading indicator—remains a highly interesting dependent construct worthy of attention in future research.

Implications for Policy

In this study—given Fisher and Ury's (1981) suggestion that disputes arising from a particular negotiating situation usually remain unresolved for personal/ cognitive reasons (such as the attitudes and stance of the parties)—we have examined whether there is a nation-based approach to transacting that affects economic relationships that affects decisions about transacting. The results from both the binational panel and the extraordinary challenge committee of NAFTA, which have both divided along national lines, have suggested that this line of inquiry might be useful to better understand.

Our finding that resource possession and a seeking focus are US-based cognitions that are positively related to the propensity to transact, while in Canada they are not, might explain why Canada's policy argument falls on deaf ears in the US: the parties being dramatically less capable of seeing the other's point of view regarding either the necessary arrangements, or the basis for willingness (Table 2B). Furthermore, our finding a negative relationship (Table 4B) on venture specific skills confirms the likelihood of this type of selective blindness: the likelihood of the US having a propensity to transact (or to resume transacting) diminishes as venture specific skills (e.g., forestry management arguments for low stumpage fees) increase.

When we add to this picture the implications of our tests of the importance of diagnostic ability to the propensity to transact (Table 2B), we find that the existence of a positive relationship in the US (and Mexico), and no relationship in Canada further exacerbates the cognitive divide: Canadians appear to be less concerned about the health of their businesses, than about the health of their macro policy. This less-entrepreneurial stance can explain why US negotiators are adamant advocates for policies that impact individual businesses (and are thereby subject to and more greatly influenced by

intense lobbying pressure, for example), while Canadians seem willing to sacrifice individual businesses to preserve policy under the name of principle.

Implications for Further Research

Theory building progresses no faster than measurement (Nunnally, 1978) because conceptualization depends upon the capability of researchers to measure predicted phenomena. This study contributes to theory building by providing both new concepts and new measures. New concepts are proposed in the application of cognition constructs of Arrangements, Willingness, and Ability proposed by Leddo and Abelson (1986) to the business domain. New measures of these constructs are developed using a script cue recognition approach that uses a formative indicators measurement logic (Howell, 1987: 121; Nunnally, 1978; Pedhazur & Schmelkin, 1991: 54) to allow the sampling of script cues (Nunnally, 1978) rather than the full enumeration of script cues. This approach, which might be characterized as a macro-based alternative for measuring cognition relative to the micro physiological response approach used in cognitive psychology (Posner, 1973), offers a practical way to measure latent cognition constructs and to operationalize cognitive models (e.g., Busenitz & Lau, 1996).

Implications for business theory. The usefulness of theory building research may be judged by its capability to resolve some of the present theoretical difficulties in a field (Popper, 1979: 47). Although existing business theory does explain some phenomena (e.g. the behavior of venture capitalists under various conditions (Hall & Hofer, 1993; Manigart, Wright, Robbie, Desbrieres, & DeWale, 1997)), there are other phenomena that existing theory is yet unable to explain: such as when an entrepreneur might appear or engage in business (Bull & Willard, 1993: 183), or why some founder CEOs succeed while others fail (Willard, Kreuger & Feeser, 1992). Further, the fields from which existing business theory has been drawn each impose domain-based limitations on theory development. For example, economics provides elegant theory, but it is difficult to operationalize in

the case of individual entrepreneurs (Baumol, 1993). Psychology provides a rich analysis of individual characteristics, but psychology-based studies do not consistently relate individual characteristics to performance outcomes because they appear to be case-specific and suffer from lack of replication (Brockhaus & Horowitz, 1986; Sexton & Bowman-Upton, 1991). Strategy-based business research provides the tools to explain performance outcomes, but has had difficulty in linking these to the influence of the entrepreneur (1986; Kunkel, 1991; MacMillan & Day, 1987; Sandberg, 1986).

In this study, we have developed and tested the idea that expertise in new venture formation is a function of identifiable scripts, which vary in composition within countries, but which act together to affect the propensity to transact regardless of country. Implicit in these findings is the idea that researchers may no longer be constrained to view the economic, psychological, and strategic performance views as competitive explanations for business. For example, many economists recognize that economics is a psychological science (Marshall, 1920; Simon, 1979: 493) and have suggested cognitive explanations for economic phenomena (Arrow, 1982: 5). Our exploratory findings suggest a preliminary model that relates the business arrangements, willingness, and ability scripts to likely economic results (venture expertise and subsequently, economic development). These findings suggest that entrepreneurs appear and form ventures (Bull & Willard, 1993) based upon the presence of appropriate venture scripts, and that an explanation for the success of some founder CEOs but not others (Willard et al., 1992) might be found in expertise-based business theory. An expert script explanation might therefore be useful in effecting an understanding of deeper commonalities among the research findings of the various so-called competitive streams in the field. Our findings point to the additional research needed to further explore the manner in which the business expertise construct does reconcile the economic, psychological, and strategy-based streams in business research.

Implications for international business theory. Within international business research, new theoretical frameworks are needed 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 of business by: showing similarities in the new venture arrangements, willingness, and ability scripts of entrepreneurs across cultures and by identifying some of the specific differences within cultures.

These results show support for a cognitive perspective of business that explains the propensity to transact across borders (McDougall & Oviatt, 1997: 293) using information processing constructs. Further, the results suggest the existence of shared meaning in a cross-cultural venturing community, which would facilitate international venturing and global start-ups (Oviatt & McDougall, 1995). This suggests that the multitude of apparently heterogeneous phenomena that have in the past been thought to affect the venturing intentions and outcomes, may form the elements of a coherent cognitive model across countries that still illuminates and acknowledges differences in cognitive models within countries. Researchers who wish to further organize and clarify empirical results in international business research should carefully consider transaction cognition constructs and research as the source of potentially unifying theory. International business research is also advanced by the creation of measures that allow the operationalization of cross-cultural cognitive models of venture formation (e.g., Busenitz & Lau, 1996) and facilitate larger sample studies that may be more able to capture the range of variance in independent variables (Freeman, 1986).

In prior business and entrepreneurship research, the three more general cognitive processes identified in the expert information processing literature (arrangements, willingness, and ability scripts) have been included in intention-based, planned behavior models of the business event, albeit under different labels (Krueger & Carsrud, 1993; Shapero, 1975; Shapero & Giglierano, 1982): (1) cognitions related to the feasibility of the venture, (2) cognitions related to the propensity to act, and (3) cognitions related to venture desirability (Krueger & Carsrud, 1993: 5). Leddo & Abelson (1986: 121) generalize these three processes for any type of expertise and suggest that they occur in a

cognitive sequence in the mind of an individual: with arrangements (script “entry”) scripts occurring before willingness-ability (script “doing”) scripts. Thus, our extension and refinement of the Busenitz and Lau (1996) model employs expert information processing theory to attain compliance with the “total situation” requirement of social cognition theory, thereby suggesting a modification of the model wherein the “social context” and “personal variables” constructs ought now to be included *within* the overall cognition construct. This produces a modified model that retains venture outcomes as consequent to cognition, leaving only cultural values as an antecedent construct, and—through parsimony—suggesting a further step toward operationalization.

Conclusion

In conclusion, this research has added to both the business and the information processing literatures focused on the composition of cross-country transaction cognitions. Further, it contributes to our understanding about the likely quantity and quality of business in NAFTA countries—especially as it bears on the most important trade relationship: that of trade in softwood lumber. This investigation is timely since individuals, firms, and governments affected by the relatively new NAFTA trading bloc are intently focused on the formative transacting process and can benefit from an awareness of similarities and differences in new venture cognitions across member countries. Specifically, better-designed, and as indicated from our study, more contextually responsive dispute resolution mechanisms (Reisman & Wiedman, 1995), appear to be necessary.

As perhaps an even more reliable leading indicator than new venture formations themselves, the assessment of the decisions to transact in a country offers evidence about the reservoir of business talent within that country, as well as evidence suggesting likely differences in the quantity and quality of that talent. A deeper understanding of these differences is also important to individuals who engage in economic activity in different countries because there is a need to know which settings truly require similar skills, and which do not (Peterson et al., 1995: 430). Although this research is exploratory, we

believe the results will make these stakeholders more aware of similarities and differences in transaction cognitions, which may advance the collective economic interests of the NAFTA countries (Hill, 1997; Hisrich et al., 1996).

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TABLE 1
HYPOTHESIS TESTS

A. Hypothesis 1 - ANCOVA

	MS	F	p.
Covariates	654	93.4	.00
Age	1269.0	181.0	.000
Country	100.9	14.4	.000
Main Effects	148.2	21.2	.00
Arrangements	145.2	20.7	.000
Willingness	30.2	4.3	.014
Ability	105.7	15.1	.000

Note. Model $R^2 = .51$; Age $R^2 = .62$; Country $R^2 = .06$
Arrangements = Arrangements Scripts, etc.

B. Hypothesis 2 – MANOVA

	Multivariate F		Univariate F's	
	Wilkes	Lambda p.	F	p.
Country Effect	.945	.000		
Arrangements			3.69	.026
Willingness			2.12	.120
Ability			8.88	.000

C. Hypothesis 2 – Hierarchical Regression

	All	CAN	MEX	USA
Age (Base model)	.56 ^{***}	.64 ^{***}	.32 ^{***}	.63 ^{***}
Cognition Model				
Arrangements	.24 ^{***}	.28 ^{***}	.25 ^{**}	.21 ^{***}
Willingness	.11 ^{**}	.03	.16 ^a	.14 ^{**}
Ability	.23 ^{***}	.18 ^{**}	.17 ^a	.21 ^{***}
Age	.46 ^{***}	.54 ^{***}	.28 ^{**}	.48 ^{***}
R^2 (Base model)	.31 ^{***}	.41 ^{***}	.10 ^{***}	.40 ^{***}
ΔR^2	.17 ^{***}	.14 ^{***}	.15 ^{***}	.16 ^{***}

Note. Standardized Beta Coefficients reported; * $p < .05$; ** $p < .01$
*** $p < .001$; ^a $p < .10$; at least one of the country models significantly differs, at the .01 level, from the all inclusive model, based on Chow's test ($Q=6.67$). Dummy coding of country effects found a significant difference in the beta coefficients for Willingness Scripts between the models.

TABLE 2
POST-HOC TESTS

A. Block Effects	Canada			Mexico			USA			B. Full Model Stepwise	Canada		Mexico		USA	
	ΔR^2	B	p.	ΔR^2	B	p.	ΔR^2	B	p.		B	p.	B	p.	B	p.
Age (Base)	.41**	.64	.000	.10	.32	.001	.39**	.63	.000	.42	.000	.25	.004	.45	.000	
Arrangements Scripts	.16***			.16***			.15***									
Resource Possession		.42	.000		.36	.000		.36	.000	.41	.000	.31	.006	.28	.000	
Protectable Idea		.06	.351		.15	.102		.12	.015					.09	.055	
Venture Network		.05	.418		-.03	.757		.07	.171							
Venture Specific Skills (Age)		-.01	.898		-.05	.588		-.11	.034					-.12	.011	
(Age)		.44	.000		.23	.019		.49	.000							
Willingness Scripts	.02			.06 ^a			.06**									
Seeking Focus		.02	.771		-.01	.873		.14	.012					.10	.036	
Opportunity Motivation		.04	.567		.15	.126		-.03	.490							
Commitment Tolerance (Age)		.12	.080		.16	.102		.20	.001							
(Age)		.63	.000		.30	.000		.58	.000							
Ability Scripts	.08***			.12**			.11***									
Venture Diag. Ability		.20	.003		.32	.001		.23	.000			.27	.003	.15	.003	
Ability/Opport Fit		.16	.019		.04	.692		.24	.000	.13	.027			.20	.000	
Situational Knowledge (Age)		.11	.105		.08	.372		-.01	.908							
(Age)		.63	.000		.32	.000		.53	.000							
										$\Delta R^2 =$.16***		.12**		.17***	

Note. ^a p < .10; * p < .05; ** p < .01, *** p < .001

