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**STRATEGIC COGNITIVE MAPS OF SMALL BUSINESS LEADERS**

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**Abstract**

*Cognitive maps influence organizational strategic behaviors by guiding the perceptions of key decisions makers. This paper empirically examines these maps in small business leaders who have the ability to strongly influence an organization's attributes and actions. Results demonstrate that two distinct and polar orientations develop from small business leaders' self-identity with their organization, overall assessments of external stakeholders, and general perceptions of the environment. The strategic implications of these findings suggest that small business leaders should be mindful of their own viewpoints and biases since they can greatly influence organizational behaviors and subsequent performance.*

**INTRODUCTION**

Small businesses often operate in highly turbulent and uncertain environments. In such environments, top managers and entrepreneurs leading these small businesses tend to place the complex stimuli into more simplified mental frameworks, such that interpretation and comprehension can occur (Hambrick & Mason, 1984; Starbuck & Milliken, 1988). This type of simplification process is termed sensemaking, which "...is about such things as placement of items into frameworks, comprehending, redressing surprise, constructing meaning, interacting in pursuit of mutual understanding, and patterning" (Weick, 1995:6). Cognitive maps result from sensemaking activities and aid

managers in understanding and coping with multiple situations in complex business environments (Weick & Bougon, 1986). These maps essentially guide strategic decision making concerning the actions or behaviors of their respective organizations by establishing simplified views of the organization itself, the organization's place among key stakeholders, and the state of the organization's environment (Jackson, 2000; Stubbart, 1989).

Association or identification with the organization is especially significant in the development of the strategic cognitive map, which we define here as a belief system about an organization and its approach to dealing with strategic issues. Strong

identification often occurs with organizational leaders because they tend to take ownership in the organization in which they operate (Dutton, Dukerich & Harquail, 1994); this is especially true in smaller organizations. So, when an organizational member is in a strong position to impact the organization's actions and attributes, that member can influence organizational sensemaking among other organizational members and therefore impact subsequent strategic behavior. Thus, small business leaders ultimately influence organizational behavior through the enactment of their cognitive maps. This relationship becomes more relevant within increasingly ambiguous and complex business settings that demand faster and more copious decisions.

This paper questions if small business leaders' cognitive maps can demonstrate a discernable pattern that links different perceptions of the organization from a strategic point of view. The primary issue of interest is, therefore, concerned with the conceptual maps or frameworks that exist among small business leaders and how they relate to their overall perceptions of organizational strategic behavior. We test this by analyzing several hypotheses regarding three basic strategic conceptualizations made by leaders concerning their organizations: 1) the small business leaders' view of their own organization, 2) the small business leaders' view of the key external stakeholders associated with his or her organization, and 3) the small business leaders' view of the overall task environment in which the business operates. These conceptualizations form the basis for the cognitive maps and were chosen to provide a multi-level conceptualization of the situational factors at play in determining strategic behavior.

Similar cognitive views of organizations have been established (e.g., Weick & Bougon, 1986), but little empirical work exists that focuses on the cognitive maps that leaders have of their respective organizations and their position within the environment. In response, we empirically test these perceptual components and their relationship

to the overall perceived strategic behavior of small organizations.

## COGNITIVE MAPS

Small business leaders develop a strategic cognitive map concerning their organization through perceptions of three primary forces—the individuals that make up the organization, external stakeholders, and the broader industry or environment (Covin & Slevin, 1991; Russell, 1999; Zahra, 1991). While these influences each independently impact strategic behavior in an objective fashion, they also are subject to interpretation by the individual and tend to create reinforcing mental frameworks. The following sections focus on these cognitive map components and their relationship to externally-oriented strategic behaviors discussed as “defending” and “prospecting”. We begin by establishing these strategic behavior classifications and their relevance to this study. Then, we develop hypotheses regarding the relationship of each map component to the strategic behaviors. These hypotheses lead to the development and analyses of two competing models.

### Strategic Organizational Behavior

Schendel and Hofer (1979:11) discussed strategic management as “[dealing] with the entrepreneurial work of the organization, with renewal and growth, and more particularly, with developing and utilizing the strategy which is to guide the organization's operations.” This definition treats strategy as involving two primary problems, the concern with growth, renewal and entrepreneurial work and the concern with organizational operations. Miles and Snow (1978), in a similar fashion, consider organizational strategies, structures and processes as patterns of behaviors dealing with two confines, identified as the entrepreneurial problem and the engineering problem. Of their four types, the defenders and prospectors are said to be the extremes of behaviors and traits involving engineering and entrepreneurship, respectively. Defenders are those organizations that demonstrate behaviors that are low-risk, operating in a narrowly focused domain, and

concentrating primarily on maximizing efficiency. Prospectors, on the other hand, are higher-risk, organic firms that actively seek new opportunities in an open domain.

Related studies support these two basic strategic orientations and suggest a conservative to entrepreneurial continuum that has shown to be a useful construct in understanding strategic behavior (e.g., Covin & Slevin, 1989; Miller & Friesen, 1984; Porter, 1980). Therefore, following this precedent, but keeping with the Miles and Snow (1978) terminology, the following hypothesized relationships between cognitive map components and organizational behaviors are discussed using the engineering and entrepreneurial terms of “defending” or “prospecting” strategic behavior.

### **Organizational Strategic Identity**

Leaders establish perceptions regarding their organization’s identity based on what they believe are unique and enduring about the organization in relation to strategic decision-making. The traits or attributes that seem to be associated with the organization itself are identified and used to characterize it. The processing and interpretation of information, although actually done by individuals, is often observed at the organizational level, especially when convergence among members occurs or when strong leadership is present.

This convergence allows the members of the organization to develop collective cognitive systems and memories (Daft & Weick, 1984). The development of these cognitive systems and memories creates strong and clear beliefs on which organizational leaders base their reasoning for the purpose of the organization and as explanations for strategic actions. Once this conception of the organization has formed, how other organizational members perceive the organizational entity—particularly the organization’s top managers—is termed identity.

An organization’s identity has an impact on interpretations of issues and it motivates

decision-makers to act on those interpretations. However, other members’ perceptions of the organization do not always coincide, especially during turbulent, unstable, or ambiguous periods. Leaders’ beliefs and perceptions concerning organizational identity, although not always the same as other members or even the collective majority, are often articulated as such to ultimately become the recognized collective identity (Albert & Whetten, 1985; Kramer, 1991). This is especially true in smaller organizations or when one person (i.e., the entrepreneur) is held up as the key decision maker.

On this basis, we suggest that strategic identities can develop such that organizational members will largely identify with an engineering orientation and/or an entrepreneurial orientation. Strategic identity is given as a comprehensive term that indicates an organization’s self-identified propensity to make choices and decisions in a certain manner (Elsback & Kramer, 1996). Therefore, our first two hypotheses reflect this identity and its specific relationship to organizational strategic behavior.

*H1: An entrepreneurial identity is positively related to prospecting strategic behaviors.*

*H2: An engineering identity is positively related to defensive strategic behaviors.*

### **Stakeholder Perceptions**

The second primary influence on small business leaders’ strategic cognitive maps is their perception of key external stakeholders. Mason and Mitroff (1981) and Freeman (1984) emphasize the influence of external organizations, where due to their stake in the decisions and actions of the focal organization, may attempt to influence decisions and actions towards their own interests. Similarly, Pfeffer and Salancik (1978) support the contention that organizational acceptability and its activities are “judged” by external organizations and that the focal organization may influence acceptability for itself through power and

manipulation. Therefore, the stakeholder perceptions that are received by key decision makers (whether they are “real” or not) will influence the strategic behavior of the organization in regards to those stakeholders.

Perceptions of power and control are largely derived from an organization’s dependence on stakeholders with the environment to provide needed resources (Freeman, 1984; Pfeffer & Salancik, 1978). However, perceptions of this dependence may also be shaped by the organizational categories that are most important to individuals during decision making and social interaction (Kramer, 1991). As discussed previously, interpretation enters in as the cognitive information processing that occurs prior to action. Since interpretation must take place (Daft & Weick, 1984), interpretation on issues of power must occur.

Power is the ability to affect organizational outcomes (Mintzberg, 1983). Thus, perceptions of stakeholders who have, or can potentially gain, power can have a significant impact on organizational strategic behavior. Two critical assessments about stakeholder power are generally made (Blair & Whitehead, 1988; Freeman, 1984). These include assessing the stakeholder’s 1) potential to threaten the organization, and 2) potential to cooperate with the organization. Potential for threat is defined here as the perceived likelihood and capability of a stakeholder to act in some way that is detrimental to the organization. Cooperation, on the other hand, is the perceived likelihood and capability of a stakeholder to act in a supportive manner that can enable the organization to better manage its environment. The image of both the potential for cooperation and the potential for threat are based on two primary issues: 1) the perceived dependence of the organization on that stakeholder, and 2) the relevance of an issue to both parties.

Thus, the following hypotheses are derived in relation to the strategic behaviors of prospecting or defensive behavior due to overall perceptions of opportunity or threat.

*H3: Cooperative assessments of key external stakeholders are positively related to prospecting strategic behaviors.*

*H4: Threatening assessments of key external stakeholders are positively related to defensive strategic behaviors.*

### **Environmental Perceptions**

Because environmental conditions often have a large impact on organizational performance, and behaviors and strategies (Dess & Beard, 1984; Miller & Friesen, 1984), perceptions of the environment and the uncertainty associated with current and future states of the environment can greatly influence strategic cognitive maps.

Dess and Beard (1984) suggested three dimensions of the environment which can have an influence on organizational strategies; these dimensions include munificence, dynamism, and complexity. However, complexity is not examined here for two reasons: 1) it is often defined according to environmental heterogeneity, which is irrelevant in a single industry study, and 2) it has shown to remain relatively constant and become salient only as an organization diversifies (Sutcliffe, 1994). Therefore, complexity only indirectly affects organizational information processing through structural mechanisms, which are controlled for in this study of small businesses only. Given these arguments and following previous works regarding executive perceptions (e.g., Sutcliffe, 1994), the two factors of munificence and dynamism will be considered here. Munificence is considered to be the extent to which continued growth is supported by the industry environment (Castrogiovanni, 2002). Dynamism, on the other hand, is described as an issue of overall environmental change or instability. Changing and dynamic environments often require adaptation, based on reevaluation of situations, to maintain or gain competitive advantage (McGee & Shook, 2000).

It at first seems that perceptions of munificence will likely support growth and entrepreneurial actions, while dynamism, as an agent of instability will foster more apprehensive movements and actions. However, Miller and Friesen (1984) demonstrate that a positive relationship exists between innovative activities and dynamic environments, while Zahra (1991) argues that dynamic, hostile, and heterogeneous environments intensify entrepreneurial activities. Utterback (1994) also supports this outlook arguing that dynamic environments stimulate firms to take advantage of emerging market opportunities as well as to pre-empt rivals. Thus, given previous studies' findings, and again in relation to strategic behavior, the following hypotheses suggest that perceptions of dynamism will support increased levels in both forms of strategic behavior (prospecting and/or defensive), while munificence will foster complacency and reduced levels of strategic activity.

*H5: Perceptions of munificence in the environment are negatively related to more prospecting strategic behaviors.*

*H6: Perceptions of munificence in the environment are negatively related to more defensive strategic behaviors.*

*H7: Perceptions of dynamism in the environment are positively related to more prospecting strategic behaviors.*

*H8: Perceptions of dynamism in the environment are positively related to more defensive strategic behaviors.*

## MODELING

Based on the hypotheses addressed above, two models (i.e., cognitive maps) are proposed as parsimonious explanations for certain organizational strategic behaviors regarding the cognitive perceptions of small business leaders. Control variables are included in the functions as well, although specific expectations regarding their relationship to organizational strategic behavior are not specifically addressed. The

proposed functional relationship for both forms of strategic behavior is as follows:

Prospecting Behavior =  $f(\uparrow$ Entrepreneurial Identity,  $\uparrow$  Cooperative Stake-holders,  $\downarrow$  Munificent Environment,  $\uparrow$  Dynamic Environment, Control Variables)

Defending Behavior =  $f(\uparrow$  Engineering Identity,  $\uparrow$  Threatening Stakeholders,  $\downarrow$  Munificent Environment,  $\uparrow$  Dynamic Environment, Control Variables)

## DATA AND METHODS

The sample consists of 570 firms located throughout the U.S. All firms come from a single industry—the health care industry—but these data also represent a sub-segment of the industry through restriction to a single organization type. This single organization type—the physician medical group—is utilized so that a relatively homogeneous set of undiversified organizations is obtained. Further, the health care industry is of particular use in this study because identity, image, and perceptions are of particular concern to knowledge-based service institutions where the services provided are the primary competitive advantage and asset. Also, medical group leaders are forced to be highly discretionary in their sensemaking due to the general complexity and uncertainty of the health care industry but do have the context-specific knowledge that is considered to be an essential antecedent for successful entrepreneurship (McCline, Bhat & Baj, 2000).

These data were originally collected with a questionnaire delivered to the single key person within the organization—the top manager or CEO, of which many were also physicians. The original response rate was 27 percent, but this secondary sample is composed of only 570 of the initial 865 respondents because of our limitations to small firms, which we define as less than or equal to 100 physician full-time equivalents (FTEs). The medical groups ranged in size from three FTE physicians to 100 FTEs, with most firms being very small in size (less than 10 FTEs). The use of FTE physicians is the industry's accepted measurement of size and

is more appropriate for medical groups than some of the more commonly used variables such as total employees, amount of sales, or size of capital investment used by researchers. Descriptive statistics, correlations, and reliability alpha scores for the utilized variables can be seen in Table 1.

### **Strategic Identity Variables**

The variables used to determine strategic identity were taken from a portion of the questionnaire arranged in scales ranging from Strongly Disagree (1) to Strongly Agree (5), with the exception of one question which ranges from Low Risk and Moderate Return (1) to High Risk and High Return (2). These questions (seen in Table 2) are based on the strategic orientation dimensions utilized by Tan and Litschert (1994). Means of five responses were each then taken to produce a single scaled variable representing an engineering or entrepreneurial identity; any missing values were replaced with the group mean.

### **Stakeholder Perception Variables**

The variable used as "Threat Perception" is derived from the question, "What is the potential of each stakeholder to threaten your organization?" This question was scaled from Very Low (1) to Very High (5) and independently measures the threat potential of four *different* external stakeholder groups. These four key external stakeholders include 1) Hospitals, 2) Competitors (other Medical Groups), 3) Managed Care Organizations, and 4) Integrated Delivery Systems/ Networks. One might expect that the various types of external stakeholders would elicit differentiated responses. However, as evidenced by the alpha scores shown in Table 1, we find that respondents simplified their sensemaking to view external organizations rather broadly. As such, a single combined variable is used in the model testing to give an overall variable that indicates stakeholder image in terms of potential to threaten. In this way, an overall perception of key external stakeholders as more or less threatening could be tested.

A similar variable was used for "Cooperation Perception" and is scaled identically to the stakeholder threat construct. It independently measured the cooperative potential using the same four stakeholder groups as before and also using a mean score to give an indication of an overall perception of the stakeholders' potential to cooperate.

### **Environment Variables**

The two categorizations used in this study for the environment include munificence and dynamism (i.e., turbulence). The dynamism variable was arranged in a 7-point scale where respondents were asked to circle the number that best characterizes the external environment of their respective organization. Endpoints were labeled "Stable" (1) and "Turbulent" (7). The second variable was taken from the approximated percentage of managed care in the region, as reported by the respondent. Previous work in the health care industry supports the use of managed care as a proxy for environmental munificence because increased levels of managed care alter reimbursement patterns and restrict patient care (e.g., Trauner & Chestnutt, 1996). Because managed care in the mid-1990s was often seen as undermining the ability of physician organizations to operate independently, we expect that the less managed care influenced in the region, the more munificent the perception. Thus, percentage scores were inverted to give a proxy for environmental munificence.

### **Organizational Strategic Behavior Variables**

The final key variables used in this study are the strategic behaviors exhibited by the organization. Similar to the stakeholder perception constructs, actions regarding the four key external organizations were used to represent the overall strategic behaviors of the organization. These questions differ however, because they ask for strategic actions taken in regards to each of the four external stakeholders.

**Table 1 - Descriptive Statistics and Correlation Coefficients<sup>a</sup>**

Variables	Mean	StdDev	1	2	3	4	5	6	7	8	9	10	11	12
1. Entrepreneur Identity	3.000	.661	(.641)											
2. Engineer Identity	3.514	.663	.389***	(.670)										
3. Threat Perceptions	2.922	.928	-.045	-.106*	(.753)									
4. Cooperaton Perceptions	3.128	.773	.078†	.099*	.063	(.721)								
5. Minifecence (log of 1/%MC) b	28.345	23.531	.028	-.035	-.125***	-.030	---							
6. Dynamism	4.630	1.684	-.013	-0.152***	.280***	.026	-.102*	---						
7. Prospecting Behavior	2.061	.753	.094*	.026	.232***	.228***	-.072†	.164***	(.675)					
8. Defending Behavior	2.356	.955	.088*	.078	.329***	.047	-.073†	.215***	.636***	(.825)				
9. Size (log # FTEs) b	19.103	21.011	-.031	-0.092*	.115**	-.027	-.031	.091*	.256***	.161***	---			
10. Academic Practice	.104	.306	-.061	-.201***	.117**	.091*	.024	.041	.113**	.026	.141***	---		
11. Gender of Respondent	.528	.500	.020	-.005	-.060	.071	.045	.057	.028	-.007	-.055	-.047	---	
12. Age of Respondent	45.030	7.317	-.019	.000	-.059	-.068	.024	-.045	-.095*	-.137***	.047	-.060	.009	---

<sup>a</sup> Standardized Beta Coefficient (2-tailed significance)

<sup>b</sup> Descriptive given prior to transformation

†p = .10

\*p = .05

\*\*p = .01

\*\*\*p = .001

**Table 2 - Questions Used for Strategic Identity Construct Development**

<b>Entrepreneur Identity Construct:</b>
1. We are willing to sacrifice short-term profitability for long-term goals.
2. In making strategic decisions, we constantly seek to introduce new services or new products.
3. Whenever there is ambiguity in government regulation, we will move proactively to try to take a lead.
4. We search for big opportunities, and favor large, bold decisions despite the uncertainty of their outcomes.
5. In making strategic decisions, we tend to focus on investments that have high risk and high return (rather than low risk and moderate return).
<b>Engineer Identity Construct:</b>
1. In making strategic decisions, we emphasize planning techniques and information systems.
2. In analyzing situations, we evaluate possible consequences thoroughly and obtain alternatives.
3. We seek opportunities that have been shown to be promising.
4. We emphasize the use of cost control systems for monitoring performance.
5. We constantly modify our operating systems and technology to achieve efficiency.

For both the prospecting strategic behaviors and the defending strategic behaviors, the mean responses from the four reference stakeholders were used. The stakeholders include 1) Hospitals, 2) Competitors (other Medical Groups), 3) Managed Care Organizations (MCOs), and 4) Integrated Delivery Systems/Networks (IDS/Ns).

The prospecting behavior construct was taken from the question, "To what extent does your organization spend time and other resources to *involve* each of the following stakeholders in your decision making?" Responses were scaled from Very Little (1) to Very Great (5). This variable was to represent an outgoing and opportunistic pattern of external activity. The defending behavior was utilized for its focus on defense and was similarly scored with the question slightly altered to read, "To what extent does your organization spend time and other resources to *defend* itself against potentially threatening actions from each of the following stakeholders?" Each of these constructs serves as a proxy for the overall strategic behaviors of the organization.

### Control Variables

Before empirically testing and analyzing the hypotheses discussed above, additional factors that may influence the relationship

must be addressed. By controlling for potentially influential factors, a more accurate assessment and interpretation of the data can be done. Organizational context variables and individual respondent characteristics have been known to play a significant role in many similar studies.

**Organizational Size.** Competitive behavioral differences between large and small organizations have shown to exist, even within a common industry (Chen & Hambrick, 1995). Therefore, we include size as a control variable, even though our sample is already restricted to smaller organizations. Again, the size of the organization was determined in the study by the number of full-time-equivalent (FTE) physicians in the medical group. The FTE measurement variable does not directly demonstrate the actual number of persons working in the medical group, which may be five to seven times as large as the total number of FTEs; this is due to the administrative and support personnel (e.g., nurses, receptionists) needed for each additional FTE physician.

**Academic Practice.** Organizational type, independent of size, may also have an impact on perceptual differences. To examine this, we look at differences between academic practices and those not associated with an

academic-based medical school. While most academic practices are large and exhibit similarities to large firms, academic practices exhibit differences great enough in and of themselves to warrant separation from the size characteristic. Approximately 15 percent of the respondents indicated that their organization was an academic practice.

**Respondent Characteristics.** Two respondent characteristics are included in the analyses as control variables: gender and age. Gender is included because differences exist among men and women in leading and managing behaviors. Further, their choice and execution of competitive strategy may reflect differences in belief structures or cognitive maps (Walsh & Fahey, 1986). Similarly, the age of the respondent has the potential to impact decisions and strategic orientations because values and attitudes tend to differ with age.

## RESULTS

The hypotheses were tested using stepwise regression analyses to determine if the influencing factors proposed for each organizational strategic behavior related to the dependent variables in the expected ways. Stepwise regression was used to facilitate an unbiased choice on the part of the researchers and to parsimoniously account for the possible influence of the many independent variables. The results of the stepwise regressions demonstrate that the hypotheses were generally supported; these results are shown in Table 3 and discussed in the following paragraphs.

We hypothesized that entrepreneurial identity (Hypothesis 1), cooperation potential (Hypothesis 3), environmental dynamism (Hypothesis 5), and environmental munificence (Hypothesis 7) would serve as predictors of prospecting behavior; three of the four variables were found to support the stepwise-derived model. In addition to entrepreneurial identity, cooperation potential, and dynamism, a threat perception is also positively related, but munificence is not. Perhaps when considering "involving" another organization in any alliance or joint effort, the potential for threat becomes more

prevalent and needs increased attention from organizational leaders. Blindly trusting on the basis of cooperative potential may be somewhat one-sided. Alternatively, increases in threat potential may force organizations to ally themselves with others for power and protection, so that collaboration with some stakeholders becomes a way of defending against others. Also, the lack of significance with the munificence variable may demonstrate that active strategic behaviors are only pursued when munificence is only moderate or uncertain. In other words, if resources are not readily available, prospecting may be a way to procure those resources needed for organizational survival.

For defending strategic behavior, our hypotheses were largely supported as well. Engineering identity (Hypothesis 2), threat potential (Hypothesis 4), and environmental dynamism (Hypothesis 8) demonstrated positive relationships. However, as with prospecting behavior, munificence showed no significant relationship. Thus, Hypothesis 6 is not supported.

Organizational size, as with many studies in management and entrepreneurship, proved to be very influential. Results show that with increased organizational size, the level of strategic behavior of both types increased. This seems to suggest that larger organizations, perhaps, are more able to influence their external stakeholders and more actively pursue prospecting and defensive strategies. Very small organizations may be more reactionary or selective in their strategic behaviors.

Similarly, the age of the respondent is negatively related to taking action. Perhaps younger leaders have more risk tolerance, and thus are more open to taking strategic actions in regard to their external stakeholders.

Overall, the hypotheses were largely supported by the analyses. Only Hypotheses 5 and 6, which argued for a negative relationship between Munificence and the strategic behaviors, were not supported.

Table 3 - Results of Stepwise Multiple Regression Analyses

Dependent Variable	Independent Variables	MultR	RSq	AdjRSq	SE	B	Beta	T	Sig T
<b>Prospecting Behavior</b> (N=519)	<i>Variables in Equation</i>	.423	.179	.170	.689				
	Size (log of #FTEs)					.178	.031	5.827	.000
	Cooperation Perception					.202	.039	5.140	.000
	Threat Perception					.144	.035	4.153	.000
	Entrepreneur Identity					.111	.046	2.423	.016
	Age of Respondent					-.010	.004	-2.301	.022
	Dynamism					.038	.019	2.044	.041
	<i>Variables not in Equation</i>								
	Gender							1.110	.267
	Academic Practice							1.895	.059
Engineer Identity							.627	.531	
Munificence (log of 1/%MC)							-.706	.480	
<b>Defending Behavior</b> (N=520)	<i>Variables in Equation</i>	.421	.177	.169	.871				
	Threat Perception					.299	.044	6.790	.000
	Age of Respondent					-.018	.005	-3.501	.001
	Dynamism					.078	.024	3.138	.001
	Engineer Identity					.209	.058	3.591	.000
	Size (log of #FTEs)					.120	.039	3.101	.002
	<i>Variables not in Equation</i>								
	Gender							.496	.620
	Academic Practice							-.160	.873
	Entrepreneur Identity							1.638	.102
Cooperation Perception							.282	.778	
Munificence (log of 1/%MC)							-.330	.742	

**DISCUSSION & CONCLUSIONS**

A two-dimensional split in cognitive mapping by small business leaders is demonstrated. Within each model, an overall pattern or cognitive map seems to exist. An entrepreneurial identity, outlook of the environment as dynamic, and perception of stakeholders in terms of their potential for cooperation are each related to more prospecting firm behaviors. Essentially, this entrepreneurial dimension presents a more positive, assertive, and optimistic perspective.

However, a perception of threat from external stakeholders is also an important aspect of this cognitive map, while munificence is not. The second model demonstrates that an engineering identity, dynamic environment perceptions, and a perception of stakeholder threat are related to more defending behaviors. This dimension exhibits a more negative, protective, and foreboding perspective by the small business leader.

Given these patterns, it seems that leaders of small businesses do develop cognitive maps of their organization and its place among stakeholders and the environment. Additionally, these maps are related to the overall strategic behaviors of the organization. Generally, small business leaders seem to be either 'negativists' or 'positivists' in their production and utilization of cognitive maps, specifically in regard to organizational strategic issues. This seems to support recent theories and empirical studies on opportunity recognition, which show that opportunity-friendly or threat-dominated cognitive structures develop based on the perceptions of constructed opportunities, or lack thereof, and perceptions of desirability and feasibility (Krueger, 2000).

Of course, limitations in the data and methods exist, which restrict the generalizability of these findings. A key limitation in this study is the unavailability of variables that may have an impact on the dependent variables or serve as confounding variables. Primarily, it is difficult to account for institutional forces or regional forces that may impact the behavior of organizations. Since we are focusing on managerial perceptions, we can only surmise that these perceptions actually impact decisions that, in turn, impact behavior. By focusing only on perceptions, we do not explicitly take into account these other forces, but we emphasize the single sector and industry as controlling for most of these external forces. Additionally, since all data used here come from a single questionnaire, there may be measurement error attributable to the method rather than the constructs.

Despite these limitations, we feel the findings reflect real mapping styles exhibited by small business leaders. One related theoretical perspective that may lend support and insight into these findings is regulatory focus theory (Higgins, 1998). Regulatory focus theory (RFT) has recently been suggested as a useful theory in the entrepreneurial process literature because it utilizes two key orientations—promotion and prevention—to account for entrepreneurial success (Brockner, Higgins & Low, 2004).

Promotion-focused orientations tend to produce more alternatives to problems through creativity and invention (Brockner et al., 2004), be more open to change (Lieberman et al., 1999), and value speed and quantity of output (Forster, Higgins & Bianco, 2003). In contrast, prevention-focused orientations value stability, feasibility assessments, quality, and diligence (Brockner et al., 2004; Forster et al., 2003). Generally speaking, RFT suggests that each orientation is more useful than the other in different situations, but that the presence of both types of focus in an entrepreneurial endeavor leads to the best chance of success.

Clearly, the bipolar findings of this study seem to mirror some of the postulations put forth by Higgins and colleagues regarding RFT (e.g., Brockner et al., 2004; Forster et al., 2003; Higgins, 1998). So, what we previously discussed as positive or negative cognitive maps may be a direct reflection of the promotion- and prevention-focused orientations of RFT. However, the internalization of RFT may limit such labels to the individual level, rather than the strategic perceptions of the organization. Therefore, the transfer process of individual-level psychological orientations to organizational identity and environmental perceptions becomes a key area for future research. Some research in this area has already taken place. Crossan and colleagues have recently applied organizational learning theories and perspectives to strategic leadership and cognition (e.g., Crossan & Berdrow, 2003; Vera & Crossan, 2004).

The bi-polar orientation of RFT and the findings of this study are supported by previous research. However, this study extends such research in that it identifies some of the key ways cognitive orientations or maps are developed, particularly in how they view external organizations and environments. Further, this study demonstrates how cognitive maps specifically relate to certain organizational behaviors, rather than specific contexts. For instance, Khandualla's (1977) study discusses an entrepreneurial style and a conservative style. Similar findings are found in Covin and Slevin (1989), where hostile and benign

environments support different strategic postures—entrepreneurial versus conservative. While these two strategic styles show to be more effective in different environments, the recognition of the orientations or maps within a common industry and task environment is the key to our study. Additionally, our study extends these findings to demonstrate that this bi-polar orientation is not limited to multi-industry studies, but exists in very selective, single industries. We also see that the decisions and actions that any small business leader takes are related to these cognitive biases and may serve to hinder appropriate strategic action or appropriate levels of organizational learning (Vera & Crossan, 2004).

Assuming the health care industry is one of high levels of hostility, where risk and stress are high and the environment itself is competitive, political, and fraught with technological changes, firm success would likely side with the entrepreneurial orientation and more organic structures (Covin & Slevin, 1989). However, many firms in this study behave more defensively and are more engineering-oriented than entrepreneurial. The leaders of these small firms may not readily recognize the biases present in their perceptions and this recognition may be the first step to the identification and utilization of alternative strategic options for the firm. Thus, managerial implications are that organizational leaders of smaller firms should be aware of their own propensity for polar mapping patterns and be receptive to alternative viewpoints and strategic actions.

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