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Understanding the dynamics of new venture top management teams Cohesion, conflict, and new venture performance

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Abstract

Research conducted under the upper echelon perspective has produced consistent evidence of a relationship between top management team (TMT) interaction and firm performance. We draw upon and extend this research in an effort to explain new venture performance as a function of cohesion and conflict within the top management team. Based upon data collected from a sample of 70 new ventures, we find that TMT cohesion is negatively related to affective conflict and positively related to cognitive conflict. As expected then, we also find that TMT cohesion is positively related to new venture growth. © 2001 Elsevier Science Inc. All rights reserved.

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1. Executive summary

Despite popular legends about individual entrepreneurs, the creation and successful management of new ventures is often a team effort, shared among individuals representing a diversity of skills and experiences. As such, the success of a venture is often a reflection of

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its team's ability to meld talent and ability in a creative and coordinated fashion. As teams utilize their diversity to produce insightful yet workable strategies, while also promoting satisfaction and commitment among their members, superior venture performance will follow.

Central to the effort to meld talent and ability is the use of conflict. Paradoxically, conflict can be a catalyst for creativity and understanding as well as for animosity and resentment. The open exchange of ideas, the objective assessment of alternatives, and the rigorous contrasting of perspectives produces conflicts out of which creative ideas and solutions emerge. At the same time, such interactions may also produce anger and alienation, which can lead to disaffection and departure by the offended team members. Thus, effective teams embrace the benefits of conflict, while also avoiding its costs. Research has shown that to do this requires encouraging the cognitive dimension of conflict, while simultaneously discouraging the affective dimension.

Unfortunately, cognitive and affective conflict most often occur together, spurred on by good intentions and a lack of understanding. Thus, the dilemma for researchers and managers alike is to understand the antecedents of cognitive and affective conflict, as well as the conditions that lead one to trigger the other.

To address the issue, we offer this study of 70 new venture management teams. We examine the effects of cohesion on cognitive and affective conflict. We reason that cohesion increases constructive cognitive conflicts while simultaneously decreasing destructive affective conflicts. Because of the familiarity and comfort among their members, cohesive teams should experience lower levels of affective conflict and higher levels of cognitive conflict than their less cohesive counterparts. As a result, cohesiveness should relate positively to superior new venture performance.

Although not without some variation, the data we report support this reasoning. Thus, we conclude that cohesion is an important characteristic of successful new venture management teams and suggest that cohesion, when combined with efforts to promote free and open interaction, will lead to more effective teams and better performing ventures.

2. Introduction

Central to the upper echelon perspective is the belief that firm outcomes are a "reflection" of the characteristics and actions of a small group of managers at the top of the organization (Finkelstein and Hambrick, 1996; Hambrick and Mason, 1984). As such, an increasing number of researchers have sought to understand the inner workings of the top management team (TMT). Indeed, a rich stream of literature has developed examining TMT demography and interaction and attempting to relate specific team attributes to firm performance.

Although not as well established, a similar stream has emerged in the entrepreneurship literature. Like the earlier work, central to this line of research is the premise that, despite popular and romantic notions about individual entrepreneurs, the management of new ventures is generally a shared effort (Gartner et al., 1994). However, unlike the earlier work, this research assumes that new venture management is a special type of task and so warrants specific study of the relationships between TMTs and new venture performance (Amason et al., 1997).

We contribute to this emerging stream with the present study addressing the question: How are cohesion and decision making conflict within the TMT related to one another and, ultimately, to new venture performance? In so doing, we integrate further constructs from group theory (McGrath, 1964) and the upper echelon perspective (Finkelstein and Hambrick, 1996) into the literatures of entrepreneurship and new venture management.

3. Theoretical development

The earliest studies of new venture performance were largely anecdotal and focused on characteristics of the venture founders (Hornaday and Aboud, 1971; Palmer, 1971). More recently, researchers have examined constructs like industry structure and strategy in an effort to understand more fully the determinants of new venture success (Lambkin, 1988; McDougall, 1987; Sandberg and Hofer, 1987). From this, we have gathered that strategies are critically important. However, because of their limited resources, new ventures have a narrow range of strategies from which to choose. For example, Chaganti et al. (1989) found that new ventures had great difficulty competing on price against more established competitors. Consequently, new venture strategies often emphasize the need to be somehow unique and different from the other firms in the marketplace.

This need to differentiate creates a difficult situation for new venture TMTs who must learn to manage firms that are themselves new while simultaneously learning to manage firms that are also in some way different (Kimberly, 1979). The resulting ambiguity produces liabilities, which surpass those faced in more established firms. Stinchcombe (1965) refers to these as the liabilities of newness. While touching a variety of issues, the liabilities of newness all derive in some way from the fact that new ventures are unfamiliar and without precedent. Consequently, new venture managers must learn to rely largely upon themselves for information and for the generation of ideas and solutions.

If new ventures are to survive, they must quickly overcome these liabilities and establish for themselves the legitimacy and reduced uncertainty enjoyed by more established firms (Singh et al., 1986). As a practical matter, this means that new venture managers must learn their new jobs, learn the specifics of their new environments, and learn to deal with their new stakeholders while on the job and while utilizing new and untested social ties (Dewar and Dutton, 1986; Galbraith, 1973; McGee et al., 1995). Moreover, they must learn all this quickly and with minimal losses in efficiency and motivation. Thus, the task of the new venture TMT is largely one of creativity and learning, where the ability to produce novel and integrated solutions is an important attribute that can distinguish high performing TMTs from others.

Amidst this demanding environment, the performance of the top management team is key to success. Studies have shown that human capital is an important determinant of new venture performance (Thakur, 1999; Cooper et al., 1994; Herron and Robinson, 1993). Moreover, because new ventures lack the legitimacy, precedent, and inertia of incumbents, the performance of the top management team is especially critical (Thakur, 1999; Kamm et al., 1990). As such, researchers have argued that, in the future, the highest performing entrepreneurial firms will be those with the most outstanding top management teams

(Timmons, 1999). Of course, this is consistent with the upper echelon view that the performance of the TMT is reflected in the performance of the firm itself (Hambrick and Mason, 1984). High-performing TMTs should lead to high-performing ventures. In this paper then, we argue that because cohesion and the effective use of conflict by the TMT can facilitate better TMT performance, they may also lead to superior new venture performance.

3.1. Cohesion and conflict within the TMT

Cohesion is viewed by many as a strong predictor of group behavior (Goodman et al., 1987; Barnard et al., 1993; Bettenhusem, 1991; Festinger, 1950; Harrison, 1993; Lott and Lott, 1965) and denotes a state of social relationship among a team defined as "the degree to which members of the group are attracted to each other" (Shaw, 1981, p. 213). The members of cohesive teams exhibit higher levels of affinity and trust for one another as well as higher levels of satisfaction with and affective attraction to the group as a whole (O'Reilly et al., 1989).

Studies linking cohesion and performance are abundant. Mullen and Copper (1994), in a meta-analysis of 49 studies, found "the cohesiveness–performance effect was highly significant" (p. 210). Other examples include Keller's (1986) study of 32 project groups in large R&D organizations. He found that group cohesiveness predicted performance criteria of the group both contemporaneously and one year later, including technical quality, value to the company, and budget and schedule performance. Pelz and Andrews (1976) found project groups that were highly cohesive generated an intellectual competitiveness needed to maintain high performance.

Within new venture TMTs, cohesiveness is especially important because of the complex and ambiguous nature of the team's task. Research has shown that teams that perform well under uncertain and ambiguous conditions are highly coordinated and flexible (Daft and Lengel, 1986; Eisenhardt, 1989; Eisenhardt and Bourgeois, 1988). As Smith et al. (1994) explain, "top management teams that work well together react faster, are more flexible, use superior problem solving techniques, and are more productive and efficient than less integrative teams" (p. 432). The sort of integration that is necessary for this flexibility and efficiency is more likely to be a function of affective, interpersonal relationships than of formal, role-defined relationships (Katz and Kahn, 1978).

Cohesive teams are likely to have a stable and solid foundation of interpersonal relationships that allows them to interact in a flexible and efficient manner. Indeed, as Smith et al. (1994) explain, cohesive teams "operate as efficient clans, not needing to expend extra energy or resources on group maintenance" (p. 432). Cohesive teams are more likely to share tacit understandings and values and so move quickly in the consideration of multiple issues without having to revisit underlying assumptions and goals. All of which suggest that cohesive teams are likely to produce the synergy necessary for superior group performance while also experiencing relatively few process losses (Steiner, 1972).

In view of this, it is not surprising that research has found team tenure to be an important antecedent of high performing new venture TMTs (Eisenhardt and Schoonhoven, 1990). Cohesive teams tend to experience less turnover (O'Reilly et al., 1989). Thus, cohesive teams tend to have longer tenures. It seems likely then that the positive

relationship between team tenure and TMT performance is at least partially attributable to the fact that cohesive teams have certain interactive advantages that allow them to perform better than their less cohesive counterparts.

One area where such an interactive advantage is likely is in the use of conflict. Research has provided evidence that teams engaging in functional, task-oriented conflict tend to outperform those in which conflict is dysfunctional and personally oriented (Schweiger et al., 1989; Amason, 1996; Jehn, 1995; Schwenk, 1989). Of course, given the complex and ambiguous nature of new venture management, some amount of disagreement is inevitable. However, those teams that are able to take advantage of this disagreement by keeping it task focused and constructive should outperform those for whom the disagreement becomes personally focused and destructive.

Recent research has shown conflict to be multidimensional (Pinkley, 1990; Jehn, 1994, 1995). The cognitive dimension of conflict is considered to be generally functional and is defined as "task oriented and focused on judgmental differences about how best to achieve common objectives" (Amason, 1996, p. 127). Cognitive conflict occurs when top management team members consider a number of strategic alternatives from a variety of diverse perspectives. Because that sort of task-focused disagreement improves overall decision quality and understanding, cognitive conflict is seen as a necessary and beneficial component of effective strategic decision making (Mason and Mitroff, 1981; Schwenk, 1989). This is especially true for new ventures where ambiguity is high and where creativity is important (Amason et al., 1997).

On the other hand is the affective dimension of conflict, which is defined as personally oriented disagreement focusing on interpersonal dislikes and disaffections. Jehn (1994, 1995) concludes that it is the affective dimension of conflict that causes problems in decision making. Affective conflict causes problems not only by undermining decision quality and understanding but also by reducing satisfaction and team member affect, which leaves residual consequences that can further reduce TMT effectiveness in the future. Thus, while cognitive conflict is generally functional, affective conflict is generally dysfunctional (Jehn, 1994). Consequently, TMTs that perform well are often those that can encourage the former while discouraging the latter (Amason, 1996; Amason and Sapienza, 1997; Amason et al., 1995; Amason, 1998; Eisenhardt and Zbaracki, 1992; Eisenhardt et al., 1997, 1998).

Of course, the problem is that cognitive conflict can arouse interpersonal disagreements and so trigger affective conflict. Indeed, the evidence points to a strong association between cognitive and affective conflict (Brehmer, 1976; Cosier and Rose, 1977; Baron, 1988; Pelled, 1996; Pelled et al., 1999; Tjosvold, 1985). At the root of this relationship is the fact that no one really likes to be criticized or contradicted. As Pelled et al. (1999) explain "members whose ideas are disputed may feel that others in the group do not respect their judgement" (p. 7). Supporting this view is research in the area of social judgement theory showing that people are generally unable to fully articulate the rationale for their positions (Brehmer, 1976). As a result, there is a natural tendency to suspect the worst when faced with any conflict, whether cognitive or affective, and so, to respond to all conflicts as if they were personal attacks. Consequently, even when teams try to promote task-oriented, cognitive conflict, their efforts often result in personal disaffection (Schweiger et al., 1986). Moreover, once initiated, the increasing levels of affective conflict contribute to a downward spiral that

can undermine the whole decision process (Kabanoff, 1991). Most studies of cognitive and affective conflict have found the two to be highly correlated. We expect a similar pattern to emerge in new venture TMTs and so offer our first hypothesis:

Hypothesis 1: In new venture TMTs, the levels of cognitive and affective conflict experienced during decision making will be positively related.

Although we expect cognitive and affective conflict to be positively related, each will likely relate differently to cohesion. The members of cohesive teams are more likely to link satisfaction of their own needs to those of the group (Katz and Kahn, 1978). Moreover, cohesive groups are likely to share common work related values which can facilitate coordination and communication (Jehn, 1994; Smith et al., 1994). As a result, the members of cohesive teams should have greater trust and agreement about interaction norms and group processes (Nemeth and Staw, 1989). An effect of this may be that cohesion will minimize the sorts of misunderstandings and misinterpretations that can cause cognitive disagreements to degenerate into affective conflict.

The mutation of conflict from its cognitive to its affective dimension has been linked to such things as value dissimilarity (Jehn, 1994) and the absence of open and mutual interaction norms (Amason and Sapienza, 1997). Team members whose values differ at a fundamental level are more likely to have different belief structures, understandings, and priorities. As such, they may be less understanding of disagreement and dissent. Likewise, team members who are suspicious of one another's motivations and who do not trust one another to act in the best interests of the team, are likely to respond less well to disagreement. In contrast, cohesive teams are likely to be less distrustful and suspicious and so may be more tolerant of disagreement and dissent. Indeed, a sense of belonging and familiarity should promote mutual and trusting relationships, which should lead to more open and cooperative group norms. Moreover, inasmuch as cohesive team members link their own satisfaction to that of the group, they are less likely to be competitive. Research has shown that competitive norms can promote suspicion and mistrust and so reduce open and mutual interaction norms (Tjosvold and Deemer, 1980).

The presence of open and cooperative norms is essential for cognitive conflict. Recall that the ambiguity of managing a new venture provides abundant opportunity for divergent perspectives and conflicting ideas (Autio et al., 2000; Daft and Lengel, 1986; Kimberly, 1979). As such, there is significant impetus for cognitive conflict in all new venture TMTs. In the presence of such opportunity, group norms become a strong determinant of the actual level of conflict. For example, Amason and Sapienza (1997) found openness to be strongly related to cognitive conflict. They reasoned that norms encouraging frank and open discussion promoted a full airing of the substantive differences within the group. The result of such open disclosure was cognitive conflict. Thus, because cohesive teams are likely to be more open to discussion and dissent, we expect them to experience more cognitive conflict, which leads to our second hypothesis:

Hypothesis 2: In new venture TMTs, cohesion will relate positively to the level of cognitive conflict experienced during decision making.

As mentioned, the sense of familiarity and tolerance that facilitates cognitive conflict should reduce affective conflict. Indeed, many affective conflicts arise because cognitive conflicts are misinterpreted and inflamed (Brehmer, 1976; Pelled, 1996). Suspicion and mistrust can undermine cognitive conflict because they cause substantive issues to be mistaken for personal attacks (Baron, 1988). Similarly, dissimilar values and perspectives can lead to misinterpretation of reasonable criticisms, resulting in disproportionate responses. In such cases, cohesion may act as an influence to reduce affective conflict.

In essence, cohesion would serve as a strong centripetal force binding a team together in the presence of a strong centrifugal force like conflict (Hambrick, 1994). As team members disagree, the chances that misunderstanding and misinterpretation will inadvertently trigger an affective response increases. However, cohesion raises the threshold for such responses. The members of cohesive teams disagree but are less apt to take their disagreements personally. The members of cohesive teams criticize but are less apt to view that criticism with suspicion. Cohesive teams then should be more effective in embracing conflict than teams that are less cohesive because their tendency for cognitive conflict to trigger affective conflict should be substantially reduced. As such, we offer our third hypothesis:

Hypothesis 3: In new venture TMTs, cohesion will relate negatively to the level of affective conflict experienced during decision making.

Finally, those top management teams that make better use of conflict should outperform those that do not. Evidence of this has been provided through a variety of studies of cognitive and affective conflict (Amason, 1996; Cosier and Rose, 1977; Eisenhardt et al., 1997; Guetzkow and Gyr, 1954; Jehn, 1994, 1995). For example, Cosier and Dalton (1990) argue that cognitive conflict allows decision makers to see multiple perspectives, avoid hazardous decisions, and promote innovative thinking. Van de Vliert and de Dreu (1994) argue that increased conflict enhances group performance when the group focuses on task issues, when interpersonal tensions are low, and when members of the group have interdependent goals. Likewise, Amason and Schweiger (1994) provide a model of conflict in strategic decision making showing that cognitive conflict increases strategic decision quality, team consensus, and affective acceptance among team members. In a study of 48 TMTs, Amason (1996) found support for this model. Thus, there is strong evidence that cognitive conflict leads to better top management decision making and better top management decision making should, over time, lead to better organizational performance.

At the same time, affective conflict is thought to negatively impact performance. Again, both theory and evidence provide support. Amason and Schweiger (1994) argue that affective conflict decreases strategic decision quality, team consensus, and affective acceptance of team members. Again, Amason (1996) found empirical support for these relationships. In addition, in an experiment with 88 teams, Jehn (1994) found that affective conflict reduced group performance, where performance was measured by the group's accuracy of problem identification, financial analysis, and recommendations to the firm. Similarly, Pelled (1996) argued that affective conflict reduces group performance because "... the hostility that characterizes affective conflict may make individuals in the group

more resistant to the task-related ideas expressed by other group members" (p. 625). Thus, there is strong evidence that affective conflict leads to dysfunctional top management decision making. Over time, such dysfunctional decision making should lead to diminished organizational performance.

Thus, the effective use of conflict, which involves the accentuation of cognitive disagreement and the attenuation of affective disagreement, leads to better decision making by the team. In turn, better decision making by the team should lead to better new venture performance. Inasmuch as we have argued that cohesion is an antecedent to the effective use of conflict, we believe that cohesion should relate positively to venture performance. Other studies too have shown the benefits of cohesion to the performance of TMTs. Cohesion in new venture TMTs is critical due to the complex and ambiguous nature of the team's task. Research has demonstrated that teams performing well under uncertain and ambiguous conditions are highly coordinated and flexible (Daft and Lengel, 1986; Eisenhardt, 1989; Eisenhardt and Bourgeois, 1988). Smith et al. (1994) found that cohesion in the TMT related directly to ROI and sales growth. Similarly, Elron (1997) finds cohesion of the TMT contributes to TMT performance on issues such as implementation of decisions and strategies, comprehensive vision, and goals. Taken together, these findings all point to a complex web of effects whereby cohesive teams interact more efficiently and disagree more effectively, without arousing the sorts of negative affections that can so undermine top management team performance. Thus, we offer our full model,[3] as shown in Figure 1, and our final hypothesis:

Hypothesis 4: Cohesion within new venture TMTs will be positively related to new venture performance.

4. Methodology

To test our hypotheses, we gathered data from the TMTs of 70 new ventures, all of which were members of the 1995 Inc. 500. The names of the TMT members and contact information were obtained from the Dun and Bradstreet Market Identifiers Database. The firms in the Inc. 500 are privately held and are not required to report information on themselves in any standardized way. Thus, we chose to define the members of the top management team as being those individuals who met at least two of three conditions. They either were founders (Kamm et al., 1990), currently held an equity stake of at least 10% (Kamm et al., 1990; Roure and Maidique, 1986; Carland et al., 1984), or were identified in some way as being actively involved in strategic decision making (Cachon, 1990; Stewart et al., 1999). In addition, Roure and Madique (1986) argued that the new venture TMT consisted of those people identified as

[3] The linkages in the model correspond to the hypotheses tested. However, the linkages between cognitive and affective conflict and new venture performance are implied, based upon previous research, and are not tested directly. As such, they are depicted with dotted lines.

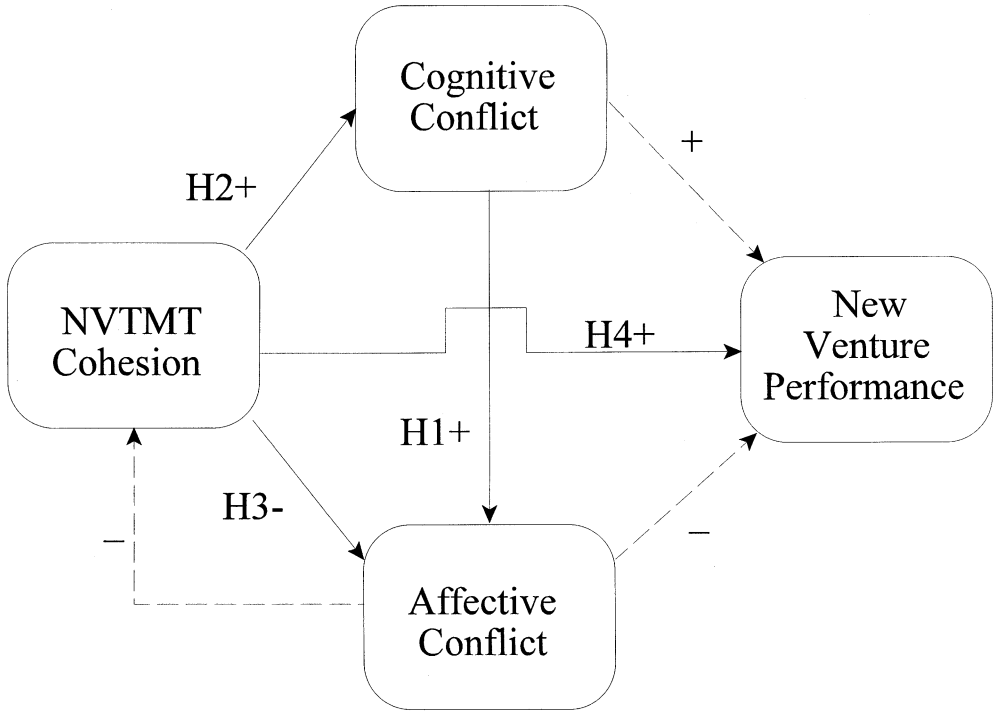


Fig. 1. Theoretical model of the effect of entrepreneurial team cohesion and conflict on new venture performance.

the CEO, President, and critical line or staff function executives. In using the Dun and Bradstreet Market Identifiers Database to identify the Inc. 500 executives, only those executives listed as either the CEO, President, or Vice President of a critical function, such as marketing, were utilized in the sample.

To crosscheck our operationalization of the TMT, the CEO or President of each firm was called and asked to identify those executives involved in TMT activities. All of the team members identified by our criteria were identified by the CEOs/Presidents as members of the firm's core strategic decision making group. Thus, we have considerable confidence in our definition of the TMT.

Firms that had been merged, acquired, gone out of business or for which the top management team could not be identified were excluded. As such, 1156 surveys were sent to the managers of 392 firms. A total of 316 surveys were returned, an initial response rate of 27.3%. However, because the unit of analysis in this study was the TMT, only those firms that provided multiple responses were retained. The final sample then included a total of 192 managers from 70 new ventures, a usable response rate of 18%. The responses per team ranged from 2 to 6 with an average of 2.74, which represents a within-team response rate of nearly 93%. Each of the 70 teams provided responses from at least 50% of their members.

Approximately 90% of the individuals in the sample were male and the average age was 38.4 years. Eighty percent were founders and 84% held equity stakes of at least 10%. Almost 90% considered themselves entrepreneurs and 40% had been involved previously in other

new ventures. In all, the firms represented a total of 42 industries. Average firm age at the time of the study was 7.75 years and ranged from 5 to 11 years. Firm size ranged from a low of 10 to a high of 900 employees, with an average of 641. However, only one firm had over 500 employees, therefore, the median number of employees was 95. The median revenue figure was US$14,500,000 and revenues ranged from a low of US$1,500,000 to a high of US$457,000,000 in the year the study was conducted. The 5-year average growth rate ranged from 516% to 25,302%, with an average growth rate of 2084%.

4.1. Measures

Cohesion was measured with a scale developed by Bollen and Hoyle (1990). We employed Bollen and Hoyle's (1990) Perceived Cohesion Scale containing six items, three of which assess the individual's sense of belonging and three of which assess the individual's feelings of morale. Responses are recorded using a five-point Likert scale. Several studies have found psychometric support for their conceptualization and measurement of perceived cohesion using these six items (e.g., Chin et al., 1999). In this study, the Cronbach's alpha coefficient for the subscales was 0.83 for morale and 0.85 for the sense of belonging.

Conflict was measured with six items adapted from Jehn's (1994) Interpersonal Conflict Scale (ICS). The ICS has been employed in a variety of settings including work groups (Jehn, 1995) and top management teams (Amason, 1996) and has been shown to effectively measure affective and cognitive conflict. Each respondent was asked to think of the most recent major strategic decision his or her firm had made and then answer questions about the level of conflict experienced during the making of that decision. Linking the responses to a common incident in this way reduces recollection bias (Podsakoff and Organ, 1986) and facilitates the combining of individual responses into team-level variables. We asked specifically for "the most recent strategic decision" so as to enhance randomization of the referenced decisions and to facilitate accurate and consistent recollections on the part of the managers within each team (Amason, 1996; Amason and Sapienza, 1997; Flanagan, 1954). Three items were used to measure cognitive conflict and three items were used to measure affective conflict. As with the measure of cohesion, factor analysis confirmed the results of previous research, and the subscale reliability coefficients were 0.79 for cognitive conflict and 0.85 for affective conflict.

For both cohesion and conflict, the mean of the individual responses within each team was used as the team-level variable. However, for both cohesion and conflict, the level of within-team agreement was assessed before the individual measures were combined to form the team-level variables (Amason, 1996; Smith et al., 1994). We assessed within-team agreement in two ways. We first used the reliability Within Groups on j number of items procedure, known as the $r_{WG(J)}$. Originally developed as a measure of within team reliability, James et al. (1993) noted that it was really a measure of within team agreement. The $r_{WG(J)}$ produces a value between 0 and 1.0, with scores above .70 denoting acceptable agreement. We also used ANOVA to test the degree of variance between the teams relative to that within the teams. A significant ANOVA would show that between-team variance was significantly greater than within-team variance, again denoting acceptable agreement.

To assess within-team agreement for cohesion, we used both the $r_{WG(J)}$ and ANOVA procedures. For feelings of morale, the $r_{WG(J)}$ was .87 and the ANOVA F statistic was 2.443

($P \leq .01$). Thus, there was acceptable agreement within the teams on the level of morale. For sense of belonging, the $r_{WG(J)}$ was .83 and the ANOVA F statistic was 2.57 ($P \leq .01$). Thus, there was acceptable agreement within the teams on the sense of belonging. For affective conflict, the $r_{WG(J)}$ was .89 and the ANOVA F statistic was 1.771 ($P \leq .01$). Thus, there was acceptable agreement within the teams on the level of affective conflict. Finally, for cognitive conflict, the $r_{WG(J)}$ was .92 and the ANOVA F statistic was 1.528 ($P \leq .05$). Thus, there was acceptable agreement within the teams on the level of cognitive conflict.

Performance was measured in two ways. Sales growth was calculated as the cumulative growth experienced by the firm during the past 5 years. Sales growth is arguably the single most important indicator of new venture performance (Chandler and Hanks, 1993; Brush and Vanderwerf, 1992) and has been included consistently in new venture performance research (Kunkel, 1991; Sandberg, 1986; Zahra, 1993). While financial reporting concerns with privately held firms have resulted in attempts to develop alternative measures of performance, even those alternative measures utilize the concept of growth (Chandler and Hanks, 1993).

We also measured profitability. However, because the firms in the sample were closely held, our ability to gather profitability data was limited to that available through Magazine Inc. However, to be included in the Inc. 500, a firm must submit 5 years of audited financial information. The sales growth measure was taken directly from this data. Information about venture profit was provided in the form of a six-level ordinal scale developed by the Inc. compilation team. The levels reflect profitability in six ranges. The scale reflects profit as a percent of sales that is (1) less than zero, (2) zero, (3) 1–5%, (4) 5–10%, (5) 11–15%, and (6) greater than or equal to 16%.

In addition to these variables, we also collected information on firm size and age. Size was measured as the number of employees. To correct for large variations, we used the natural log of the actual values. We also included TMT size. These variables were used as control measures in our analysis of firm performance.

Because our measures of cohesion and conflict were perceptual and were collected using a single survey, we first performed a procedure to control for common method variation. This procedure, described by Amason (1996), Amason and Sapienza (1997) and Smith et al. (1983) involves randomly splitting each TMT into two groups. In teams with an even number of members the randomly split subgroups are equal in size. In teams with an odd number of members, the extra member is assigned randomly to one subgroup or the other. Then, the independent variables, morale and sense of belonging in our case, are taken from one subgroup while the dependent variables, cognitive and affective conflict in our case, are taken from the other subgroup. The actual variables are still the mean of the subgroup responses and the analysis is still performed at the team level. However, because the independent and dependent variables responses are provided by different individuals from within each team, the relationships between them are free of response–response biases such as common method variation (Podsakoff and Organ, 1986).

The actual hypothesis tests were conducted in a variety of ways. Hypothesis 1, proposing a relationship between affective and cognitive conflict was examined using the zero order correlation. The hypotheses linking cohesion and conflict (Hypotheses 2 and 3) were tested

simultaneously using structural equations modeling (SEM). SEM was utilized to capture the simultaneous effects of belonging and morale cohesion as they relate to cognitive and affective conflict. Hypothesis 4 examining new venture performance was tested using hierarchical regression. We chose to use regression to test the final hypothesis because our dependent variables, sales growth and profitability, are not constructs measured by reflective indicators, as required by SEM.

5. Results

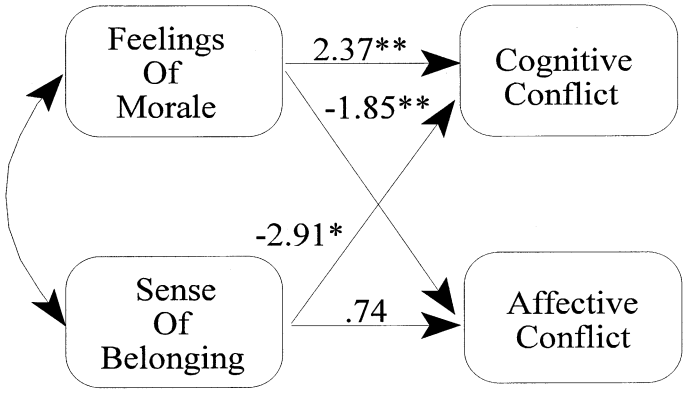
Table 1 presents the zero-order correlations and descriptive statistics for the variables. Among the several interesting relationships represented in the table is the positive relationship between cognitive and affective conflict (r=.56). This is consistent with the findings of others and offers support for Hypothesis 1. Also of interest is the relationship between the dimensions of cohesion (r=.53). This finding, too, is consistent with the findings of Bollen and Hoyle (1990) and suggests the presence of two related constructs. The belonging dimension of cohesion is negatively related to both cognitive (r=−.23) and affective conflict (r=−.42) and the morale dimension is negatively related to affective conflict (r=−.24). While preliminarily, these results offer some initial support for our general proposition that cohesion and conflict within the TMT are related to one another and, ultimately, to new venture performance.

Fig. 2 provides an illustration of the structural paths described in Hypotheses 2 and 3 and the corresponding t values for the coefficients for those paths. In addition, Table 2 contains the SEM statistics designed to assess the overall degree of fit between the model and the data. These statistics suggest that the model fits the data quite well. The χ^2 statistic is 10.97, with a P value of .43 suggesting no significant difference between the data and the model. The goodness of fit (GFI), adjusted goodness of fit (AGFI), and normed fit (NFI) indices are 0.90, 0.86, and 0.88, respectively, and the root mean square residual (RMSR) is 0.08. In addition, as evidenced by the significant R^2's for each set of indicators, presented in Table 2, a substantial portion of the variation in the indicators is accounted for by the latent variables. Thus, when taken together, these indices provide solid support for our model.

Given the global acceptability of the model, we used it to test the next two hypotheses. Hypothesis 2 stated that, in new venture TMTs, the level of cohesion would be positively related to the level of cognitive conflict experienced during decision making. Similarly, Hypothesis 3 stated that, in new venture TMTs, the level of cohesion would be negatively related to the level of affective conflict experienced during decision making. An examination of the structural path coefficients, depicted in Fig. 2, shows that both dimensions of perceived cohesion were significantly related to cognitive conflict. However, contrary to our expectations, the relationship between cognitive conflict and sense of belonging was negative. Thus, Hypothesis 2 received only partial support. As predicted, feelings of morale was negatively related to the level of affective conflict. However, sense of belonging was unrelated to affective conflict. Thus, Hypothesis 3 also received partial support.

Table 1
Correlation matrix of the team level variables

	Mean	Std	Growth	Sales	Profit	Age	Employees	Size	Cognitive	Affective	Belong	Morale
Growth	2416	3483	1.00									
Sales	50619	84158	.29	1.00								
Profit	3.38	1.40	− .04	− .20	1.00							
Firm Age	7.75	2.74	− .03	.23	− .10	1.00						
Employees	641	3463	.04	.24	− .22	.08	1.00					
Team Size	5.02	2.27	.13	.39	− .18	.14	.55	1.00				
Cognitive	2.78	0.47	.08	.27	.13	− .04	.03	.12	1.00			
Affective	2.37	0.58	− .04	− .10	.02	.01	− .09	.02	.56	1.00		
Belong	4.48	0.51	− .30	− .06	.17	− .24	− .11	− .17	− .23	− .42	1.00	
Morale	4.07	0.84	.01	.10	.17	− .23	.06	.10	− .12	− .24	.53	1.00



*p<.01; **p<.05; ***p<.10

Fig. 2. Structural equation model of entrepreneurial team dynamics, empirical relationships, and *t* values for LISREL path coefficients.

Our final hypothesis stated that cohesion would be positively related to new venture performance. We tested this hypothesis with hierarchical regression, the results of which are provided in Table 3. In the first step of the analysis, we developed models predicting sales growth and profitability from the control variables. In the second step, the conflict variables were entered into the model to test the direct effects of cognitive and affective conflict on the performance variables. While we did not specify hypotheses regarding these relationships, the model shown in Fig. 1 indicated implied relationships. We then developed a third model, including the two cohesion variables. This was done to assess the effects of cohesion on performance while controlling for these other influences. We tested both dimensions of cohesion together inasmuch as they occur together. This also allows us to test each, while controlling the effects of the other. While the correlation among our predictors may introduce some multicollinearity, the effect of that multicollinearity is to inflate the standard error of our predictors. As such, the presence of any multicollinearity

Table 2
LISREL model of cohesion and conflict relationship

Measures		Incremental fit		Parsimonious fit	
df	Absolute fit (chi-square)	GFI	RMSR	NFI	AGFI
50	10.97 ($P<.43$)	0.90	0.08	0.88	0.86
Dependent variable	R^2				
Affective conflict	0.35				
Cognitive conflict	0.28				

Estimated using a covariance matrix and maximum likelihood estimation.

Table 3
Hierarchical regression analysis predicting new venture performance

Dependent variable (variables entered per step)	Sales growth (β)	Profit (β)
Step 1: control variables		
Firm age	− 147.10	− 0.03
No. of employees (LOG)	1862.89**	− 0.09
Team size	− 69.40	− 0.09
Control model F ratio	2.03	0.88
Control model R^2	0.08	0.04
Step 2: conflict effects		
Firm age	− 139.91	− 0.02
No. of employees (LOG)	1862.89**	− 0.24
Team size	− 64.10	− 0.09
Cognitive conflict	306.25	0.67
Affective conflict	− 303.18	− 0.25
Conflict effects F ratio	1.21	0.96
R^2	0.08	0.07
R^2 change	0.00	0.03
Step 3: cohesion effects		
Firm age	− 223.38	− 0.02
No. of employees (LOG)	1574.46**	− 0.38
Team size	− 163.66	− 0.08
Cognitive conflict	445.41	0.71
Affective conflict	− 1406.86**	− 0.11
Sense of belonging	3284.33*	0.18
Feelings of morale	816.41	0.35
Main Effects F ratio	2.62**	1.21
R^2	0.23	0.12
R^2 change	0.15*	0.05

* $P < .01$.
** $P < .05$.

would not bias our significance tests (Belsey et al., 1980). In addition, a scan of the correlation matrix provides little evidence of multicollinearity (Hair et al., 1995). Given that the direction of the relationship is consistent with our expectations, the actual test of the hypothesis is the significance of the increase in R^2 between the two models, which is the proportion of variation in performance attributable to cohesion.

As can be seen in Table 3, the control models produced R^2's of .08 for growth and .04 for profitability. Neither model was significant. In the second step of this analysis, cognitive and affective conflict were added to the sales growth model and the profit model. The addition of the conflict variables did not produce a significant change in the explained variance in either model. We then added cohesion in the third step of the analysis. The R^2 for profitability changed to .12, a nonsignificant change. However, the R^2 for the sales growth model improved a total of .15 to .23, a significant change ($P < .05$). Tests of the individual coefficients showed that the bulk of this relationship was attributable to the sense of belonging, which, as expected, was positively related

to sales growth ($P < .01$). Thus, Hypothesis 4 was partially supported in the case of sales growth.

In light of these results, it is also worth noting that there was a strong negative relationship between affective conflict and sales growth ($P < .05$). While this finding confirms earlier work, it also provides support for our general supposition that affective conflict is negatively related to performance and that cohesion is negatively related to affective conflict. As a result, cohesion among the TMT is positively related to new venture performance.

6. Discussion

Our intent with this study was to better understand the relationship between TMT cohesion, conflict, and new venture performance. Research adopting an upper echelon perspective has shown consistent and strong linkages between TMT characteristics, TMT dynamics, and organizational performance (Amason, 1996; Bantel and Jackson, 1989; Hambrick and D'Aveni, 1992; Keck, 1997; Judge and Miller, 1991; Michel and Hambrick, 1992; Murray, 1989; Weirsema and Bantel, 1992). Although typically performed on larger and older organizations, this work has direct implications for the study of new ventures. Indeed, it is altogether likely that new venture managers are disproportionately more important to the success of their firms than are the managers of existing firms because of the unique threats associated with trying to be simultaneously both new and different (Kimberly, 1979; Singh et al., 1986) and because of the absence of any precedent or inertia upon which new ventures can rely. Thus, new venture TMTs are important subjects for study.

As expected, we confirmed what others have reported, that cognitive and affective conflict during decision making are positively related. This seems to further support the contention that attempts to stimulate cognitive conflict may backfire and produce interpersonal disagreement and disaffection (Amason and Sapienza, 1997; Schwieger et al., 1986). However, we also found that cohesion (feelings of morale) was negatively related to affective conflict. When taken together, this suggests that cohesion may increase cognitive conflict while minimizing affective conflict. Indeed, this would place cohesion the same category as other centripetal forces like group norms of openness and mutuality, which Amason and Sapienza (1997) found efficacious in reducing affective conflict.

To illustrate this effect more directly, we performed a median split using the two dimensions of cohesion. We divided the sample into high and low groups for belonging and for morale. In each of these groups we then examined the correlation between cognitive and affective conflict. While the high- and low-morale groups displayed similar correlations (high morale=.54; low morale=.59), the high and low belonging groups were quite different. The correlation between cognitive and affective conflict in the low belonging group was .69, while the correlation in the high belonging group was .44. Using Fisher's z transformation (Cohen and Cohen, 1983), we determined that this difference was significant ($P < .067$). Of course, this suggests that the belonging dimension of cohesion acts to prevent the tendency of cognitive conflict to arouse affective conflict. Thus, teams whose members experience a high sense of belonging should be better able to manage conflict than teams with a lower sense of

belonging. Moreover, as depicted in our regression results, that ability to manage conflict effectively is related to superior new venture performance.

Of course, this seems to support research emphasizing the value of TMT tenure in new ventures (Eisenhardt and Schoonhoven, 1990; Roure and Maidique, 1986). It does so because there is strong evidence that longevity and tenure are positively related to cohesiveness (Katz, 1982; Pfeffer, 1983; O'Rielly et al., 1989; Smith et al., 1994). Indeed, this seems to suggest that, as teams continue to work together, they grow closer and gain greater knowledge of each others' skills, abilities, and personal idiosyncrasies. This closeness facilitates venture performance by providing operational efficiencies and trust which insulate the team from the sort of process losses that often occur in teams performing complex tasks (Steiner, 1972).

Thus, we believe we add two new pieces to the growing body of knowledge on new venture TMTs. First, we provide some additional theoretical detail to the existing explanations of how experience and tenure may improve TMT dynamics. The strong and negative relationship between cohesion and affective conflict suggests that teams that experience affective conflict may be less cohesive. As we know, less cohesive teams experience higher turnover. Thus, it may be that affective conflict incites team members to leave or at least withdraw from meaningful TMT interactions. The result of this avoidance is less effective decision making and a less effective TMT. However, in the absence of affective conflict, teams interact more effectively and so stay together longer, during which time they tend to exhibit higher levels of decision making effectiveness.

Our second contribution is in extending upper echelon theory into the study of new ventures. The upper echelon perspective fits best into the arena of new ventures, which are themselves crucibles where managerial choice drives organizational performance most directly. New ventures are little affected by history, inertia, and precedent. Indeed, while the bulk of TMT research has been conducted on existing large firms, primarily because of the ready availability of secondary data, the richest and most interesting studies of TMTs are likely to involve new ventures.

Despite its strengths and these contributions, however, we should be cautiously mindful in our interpretations and in the inferences we draw. Like all studies, this work has limitations. For instance, our sample, while adequate, is small. Seventy firms is but a fraction of the thousands of new firms that spring to life each year. Moreover, our sampling frame of the Inc. 500 all but insured that our 70 firms would be unlike the majority of new firms in terms of success. Clearly, we have sampled only from the top of the distribution. Yet, we must weigh these limitations against the benefits they provide. Studies of team dynamics require the collection of rich primary data. Such data is hard to gather from very large samples of firms. By looking at a smaller group, we were able to perhaps gather more detailed information. In addition, less successful firms are often less willing to provide information and so often exclude themselves from consideration. By focusing on successful firms, we again increased the amount of information we could collect and use. Thus, while not without limitations, this work represents a fair tradeoff in terms of the data gathered and presented.

We also recognize that the relationship between cohesion and conflict is, in all likelihood, a reciprocal one. As we have shown, cohesion relates negatively to affective conflict. However, over time, the presence of affective conflict will likely produce lingering resentment and avoidance, one result of which would be reduced cohesion. Indeed, we

illustrate such reciprocation in our theoretical model (see Fig. 1). However, because of the specific temporal sequence implied by our measures, we were able to test only the relationship of cohesion to affective conflict. The cohesion measure is fully retrospective, while the measure of conflict is specific to a recent decision. Thus, we relate cohesion in a general and historical sense, to conflict in a specific and recent event, which suggests a specific causal ordering. For this reason also, it is the retrospective measure of cohesion that we relate to organizational performance.

Regarding performance, we clearly expect it to be affected by conflict. This too we illustrate in our theoretical model. However, we did not specifically hypothesize or test a relationship between conflict and performance, again due to our measures. Our conflict scales relate specifically to a single, recent decision. However, our performance measures are financial and so incorporate past actions up to the point where the measures were recorded. While we expect conflict to relate to financial performance, the conflict experienced during a recent decision episode would likely have little impact on retrospective financial data. Moreover, inasmuch as it is the cumulative effect of conflict over time that affects performance, the relationship between the conflict in any one specific decision and historical financial performance would likely be a weak one. Thus, so as not to mislead, we chose not to hypothesize a direct relationship between conflict and performance. Nevertheless, we did test the relationship in our regression analysis and did, in fact, find that with cohesion controlled, there is a significant negative relationship between affective conflict and sales growth. Thus, as we would expect, the relationship between conflict and performance appears to be robust.

We are mindful of results that did not support our model. In our structural equations analysis, the sense of belonging dimension of cohesion produced a negative, significant relationship with cognitive conflict. These results are somewhat counterintuitive, raising the question: How would a form of cohesion work to decrease cognitive conflict? One possible explanation lies within the groupthink (Janis, 1982) literature. As groups become highly cohesive, and in the presence of a dominant leader, group members, may in fact, withhold useful ideas that may contradict popular opinion in order to maintain their positive status in the group. This suggests that entrepreneurs may need to actively encourage cognitive conflict among the entrepreneurial team members to create a norm of acceptance for new ideas.

Finally, we would like to conclude by inviting other scholars to join us in our efforts to extend the upper echelon perspective further into the study of new ventures. Indeed, if we are correct in reasoning that new ventures are an especially appropriate and interesting venue for the study of top management teams, then it would stand to reason that some of the most interesting work in the study of upper echelons is yet to be conducted.

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