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Exploring the Cognitive Nature of Boards of Directors and Its Implication for Board Effectiveness

Bongjin Kim
University of Texas at San Antonio
Department of Management
1600 North Loop 1604 West
San Antonio, Texas 7824
Tel: 210-458-1309
Fax: 210-458-5783
E-mail: bkim@utsa.edu

Mark Suazo
University of Texas at San Antonio
Department of Management
1600 North Loop 1604 West
San Antonio, Texas 78249
Tel: 210-458-4318
Fax: 210-458-5783
Email: mark.suazo@utsa.edu

John E. Prescott
University of Pittsburgh
Katz Graduate School of Business
246 Mervis Hall
Pittsburgh, PA 15260
Tel: 412-648-1573
Fax: 412-648-1693
E-mail: prescott@katz.pitt.edu

*Department of Management,
University of Texas at San Antonio,
San Antonio, TX 78249, U.S.A*

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Bongjin Kim
University of Texas at San Antonio
Department of Management
1600 North Loop 1604 West
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Fax: 210-458-5783
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Email: mark.suazo@utsa.edu

John E. Prescott
University of Pittsburgh
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246 Mervis Hall
Pittsburgh, PA 15260
Tel: 412-648-1573
Fax: 412-648-1693
E-mail: prescott@katz.pitt.edu

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Abstract

In this paper we propose a theoretical framework that emphasizes the development of a shared mental model (SMM) of a board of directors and its impact on board effectiveness and suggest that the accuracy and scope of the SMM in a board will moderate the relationship between a board's SMM and board effectiveness. Also, we examine the impact of task and relationship conflict on the development of a SMM. Finally, we examine three board attributes (board size, CEO duality, and the proportion of outside directors on a board) as antecedents to the development of conflict among board members.

Key words: Boards of directors, corporate governance, shared mental models

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Despite the importance of board roles in organizations, boards have not always lived up to expectations. There may be many reasons for boards not performing to their potential, such as poor member composition, inappropriate board size, and ineffective incentive systems (e.g., Daily, 1995; Hillman, Canella, & Paetzold, 2000; Hubbard & Palia, 1995; Lorsch, 1989; Raviv, 1985). We suspect that board members often have simply not been prepared to function as an effective team. We suggest that research on corporate boards should be reoriented to focus more on examining underlying knowledge structures (e.g., mental models) of boards as teams as an indication of board effectiveness and as a precursor to firm performance. Since the outcomes that boards produce are entirely cognitive in nature (Forbes & Milliken, 1999), we believe that the study of the underlying knowledge structures of boards will allow for a better understanding of board outcomes by explaining how members of effective boards function. Specifically, we contend that shared knowledge structures of the board influence board effectiveness and performance.

It is a widely accepted assumption in the strategic management literature that the task of all decision-making groups is to produce consensus from the initial preferences or thoughts of its members (Whyte, 1989). For instance, Floyd and Wooldridge (1992: 27) stated that “successful execution [of strategy] means managers acting on a common set of priorities.” That is, the consistent and successful execution of strategy is achieved through the development of some shared understanding (e.g., a shared mental model).

The idea of a shared mental model (SMM) is based on the aggregation of group members’ individual mental models (Cannon-Bowers, Salas, & Converse, 1993). An individual’s mental model is described as the individual’s perception of reality or task (Brunswik, 1956; Klimoski & Mohammed, 1994). In the case of a board of directors the focus is on the board

member's mental model of the firm's governance task. The aggregation of individual mental models of governance tasks leads to our conceptualization of a board's SMM. Hence, we define a board's SMM as the extent to which the individual board members' mental models of corporate governance overlap.

Despite the implied importance of a SMM in board activities as a strategic decision-making group (Forbes & Milliken, 1999), there has been little work conducted exploring whether SMMs do in fact influence board effectiveness. Prior research has been less interested in the cognitive aspects of boards and instead focused mainly on structural attributes of the board and its relationship to board effectiveness and firm performance. Prior studies have shown inconsistent findings between structural attributes and firm performance; researchers have reported a positive, negative, or no relationship between structural attributes and firm performance (e.g., Dalton, Daily, Ellstrand, & Johnson, 1998; Dalton, Daily, Johnson, & Ellstrand, 1999). These mixed findings allude to the lack of a clear understanding of board effectiveness in organizations and call attention to a potential benefit to study the cognitive aspects of boards.

The members of a board are highly interdependent and effective board performance is unattainable without task contributions from each member and successful interaction among the board members (Forbes & Milliken, 1999). When the members of a board organize their knowledge of tasks, roles, goals, and abilities in a similar fashion, they share mental models. The SMM construct may help to explain what separates effective from ineffective boards by suggesting that in effective boards, members have similar or compatible knowledge, and that they use this knowledge to guide their coordinated behavior. When board members share knowledge, it enables them to interpret signals in a consistent or coordinated manner, make

compatible decisions, and take appropriate actions. Thus, the SMM construct has the potential to be a valuable diagnostic variable in making predictions about a board's likely effectiveness. Such predictions would enable shareholders or stakeholders to identify a board's problems and provide insight into how to address them.

We examine the influence of SMMs on board effectiveness, and provide a framework that describes and interconnects variables that influence the SMM of the board-board effectiveness link (We provide a theoretical framework in describing the dynamics of board process and interconnecting the variables influencing SMMs of the board.). Thus, we attempt to contribute to the corporate governance literature by conceptually linking SMMs of the board to board effectiveness which has received little attention in prior research on boards of directors. Given the fact that board research has failed to establish any clear consensus on direct relationships between board attributes and board effectiveness (Daily & Schwenk, 1996; Dalton et al., 1998; Dalton et al., 1999; Johnson, Daily, & Ellstrand, 1996), our study of indirect relationships has the potential to expand and refine our understanding of board dynamics. The study of a SMM of the board and other factors affecting it presents an important extension to knowledge about board dynamics.

THEORETICAL BACKGROUND

Mental Models

Research on individual and group cognition has grown rapidly over the past few decades, and the concept of knowledge structures lies at the heart of this research (Walsh, 1995). A knowledge structure is a mental model that individuals impose on an information environment (e.g., a task environment) to give it form and meaning. A mental model is generally defined as a “mechanism whereby humans generate descriptions of system purpose and form, explanations of

system functioning and observed system state, and predictions of future system states” (Rouse & Morris, 1986: 360). Whereas an individual’s mental model reflects the individual’s perception of reality or task (Brunswik, 1956), the team mental model is a shared group-level mental representation. As such, SMMs are “knowledge structures held by members of a team that enable them to form accurate explanations and expectations for the task, and in turn, to coordinate their actions and adapt their behavior to demands of the task and other team members” (Cannon-Bowers et al., 1993: 228).

Research on cognition reveals that when a group of individuals is brought together, each with their own knowledge structure about a particular task environment, some kind of emergent collective knowledge is likely to exist (e.g., Mohammed, Klimoski, & Rentsch, 2000; Weick & Roberts, 1993; Walsh, 1995). In such a setting, “cognition is almost always collaborative” (Levine, Resnick, & Higgins, 1993: 599). That is, the group-level representation of a task environment acts like an individual’s knowledge structure. Researchers have labeled the group-level knowledge structure a collective cognitive map (Axelord, 1976), a team mental model (Cannon-Bowers & Salas, 2001; Klimoski & Mohammed, 1994), a shared mental model (Mathieu et al. 2005), collective cognition (Langfield-Smith, 1992), a hypermap (Bryant, 1983), a dominant logic (Prahalad & Bettis, 1986), and a negotiated belief structure (Walsh & Fahey, 1986). Since we view that all are mutually substitutable labels, we will use the term ‘shared mental model (SMM)’ throughout the remainder of this paper.

The notion of a SMM was originally introduced to account for the fluid, implicit coordination frequently observed in effective teams and advance the understanding of how teams function in complex, dynamic, and ambiguous situations (Cannon-Bowers & Salas, 1990). Thus, the concept of a SMM has been used as an explanatory mechanism in a variety of disciplines

over the years to help explain team functioning (Wilson & Rutherford, 1989). The general argument of the SMM literature is that team effectiveness will improve if team members have an adequate shared understanding of the task, team, and situation (Mohammed & Dumville, 2001). That is, team effectiveness depends on the emergence of shared knowledge representations or mental models (e.g., Cannon-Bowers, et. al., 1993).

Recent studies have suggested that the extent to which members in a team share a common mental model may constitute an important influence on team processes and performance (Kraiger & Wenzel, 1997; Mohammed, Klimoski, & Rentsch, 2000). Although the view that SMMs benefit team effectiveness is not new (Cannon-Bowers, et. al., 1993; Klimoski & Mohammed, 1994; Weick & Roberts, 1993; Walsh, 1995), there has been a recent upsurge of interest in SMMs and their impact on team performance (Cannon-Bowers & Salas, 2001; Ensley & Pearce, 2001; Lim & Klein, 2006; Marks, Sabella, Burke, & Zacaro, 2002; Mathieu, Heffner, Goodwin, Cannon-Bowers, & Salas, 2000; Mathieu, Heffner, Goodwin, Cannon-Bowers, & Salas, 2005; Smith-Jentsch, Mathieu, & Kraiger, 2005). Empirical research has found support for a positive relationship between the sharedness of mental models and team processes and performance (e.g., Marks, Sabella, Burke, & Zacaro, 2002; Mathieu, Heffner, Goodwin, & Cannon-Bowers, 2000).

Parallel to research on team dynamics, strategic management scholars assert that managers operate on mental representations of the world, and mental models determine largely the effectiveness of strategic decisions (Kiesler & Sproull, 1982; Mintzerbeg, 1973). Daft and Weick (1984) argued that strategic decisions are driven by managers' cognitive structures where decision makers act on a metal model of the environment. In fact, the strategy literature assumes that the strategy process involves a consensus building process (Dess & Oringer, 1987) during

which organizational members develop a general level of agreement “on the fundamental priorities of the organization” (Floyd & Wooldridge, 1992: 28). Consensus building is identified as a critical characteristic of the strategic decision-making process, and the level of consensus is likely to influence the effectiveness of the strategic decision-making process (Dess & Priem, 1995; Markoczy, 2001). This is because consensus reflects a shared understanding of the decision-making process, which, in turn, allows participants to focus on the substance of their decisions (Iaquinto & Fredrickson, 1997). Lack of consensus resulting from high cognitive divergence and diversity among team members is argued to be highly dysfunctional unless integration is achieved (Crossan, 1991), and is particularly problematic in the implementation of strategy (Ginsberg, 1990).

Research on the SMM construct in both the team dynamics and management literature fundamentally examines the impact of knowledge convergence on various team processes and team performance. Rather than being dichotomous in orientation, the study of SMMs focuses on the extent of sharing that exists between completely identical and completely idiosyncratic individual cognitive representations among team members. That is, the sharedness of mental models is the extent to which team members’ mental models are consistent with one another (Mathieu, Heffner, Goodwin, Cannon-Bowers, & Salas, 2005). The sharedness of mental models is not examined as a prerequisite for aggregating individuals’ models to a ‘team model’—rather, the amount of convergence itself represents the extent to which individuals share a common knowledge structure (Mathieu, Heffner, Goodwin, Cannon-Bowers, & Salas, 2005).

Despite the importance of applying the SMM concept to a variety of teams, research on mental models has yet to be directed to boards. We believe that the SMM construct has potential in helping to understand board performance by explaining how members of effective boards

interact with one another. Mental models developed by individual board members represent knowledge and understanding about the board's purpose and characteristics, connections and linkages among collective actions, and various roles and behavior patterns required of individual members to successfully complete collective governance activities for the firm (Marks, Sabella, Burke, & Zaccaro, 2002). In our study, we define a SMM of the board as an organized understanding or mental representation of knowledge that is shared by board members.

A SHARED MENTAL MODEL OF BOARDS

Boards as Teams

In developing our arguments, we define boards as teams. A team is defined as a collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems, and who manage their relationships across organizational boundaries (Cohen & Bailey, 1997). We believe that all boards meet the criteria as teams in this respect.

The development of effective boards as teams remains a challenging question for firms. Most team research has not focused on boards. Some researchers have suggested that it may never be possible to get such groups as boards to be effective teams (Lorsch & MacIver, 1989). This may be due to boards' distinctive characteristics such as infrequent meeting and the vast array of legal and corporate governance issues they face as a result of their charter (Conger, Lawler III, & Finegold, 2001).

When compared to other teams, important differences between boards and other teams exist. Boards do not meet as often as other teams such as self-managing teams or top management teams (TMTs). Most boards meet less than once a month, and often for a single day

or less when they do assemble. In this regard, boards are essentially virtual teams. Boards often have outside members, who typically hold full-time jobs with another firm and are therefore unable to spend more than a few hours a month on board activities beyond directors' meetings. Board membership is often very diverse in terms of both the experience and knowledge that individual directors bring to tasks. Individual board members often have very different vested interests in decisions. Further, the average size of boards is about 13 members, which is a considerably larger number of team members than is typically found in highly functioning teams (Monks & Minow, 1995). Because of these distinctive characteristics, boards may not operate the same manner as the self-managing work teams or workgroups that can be so effective in a variety of work environments. Boards of directors are characterized as large, elite, and episodic decision-making groups that face complex tasks (Forbes & Milliken, 1999).

The major challenge for boards is to operate not simply as a loose aggregation of individuals but as a team that actively cooperates. We suggest that no board can provide significant value to the firm unless its members truly operate as a team, because boards are particularly vulnerable to "process losses" (Steiner, 1972). Much of the work that boards must do in order to produce effective outcomes involves cooperative decision-making and joint efforts. Since the outcomes that boards produce are entirely cognitive in nature (Forbes & Milliken, 1999), we believe that the study of the SMM of the board will address questions concerning board effectiveness. Because of the board's crucial corporate governance role, even small improvements in a board's group effectiveness can potentially have a significant impact on firm performance.

The Impact of a Board's Shared Mental Model on Board Effectiveness

Although there is no definitive answer to the question of “what is board effectiveness?,” there is general agreement as to which are the most important activities of the board. This agreement is shaped by the multiple responsibilities of boards. There are widely diverse perspectives on board roles: agency theorists emphasize the board's primary role as monitoring the behavior and performance of top management; resource dependence theorists argue that boards exist to help firms obtain key resources, such as capital and business partnerships; strategy scholars stress the crucial strategic role that boards play in providing strategic advice and service to top management; and legal scholars focus on the role that boards must satisfy to fulfill their legal responsibilities as overseers of the firm (e.g., Dalton et al., 1999; Daily, Dalton, & Canella, 2003; Pfeffer & Salancik, 1978; Jensen & Meckling, 1976; Johnson et al., 1996; Hillman & Dalziel, 2003; Lynall, Golden, & Hillman, 2003; Pearce & Zahra, 1992).

Accordingly, we identify board effectiveness in terms of board task performance, defined as the board's ability to fulfill its control, service, strategic, and legal tasks effectively. Specifically, activities related to the fulfillment of the control task include hiring, developing, evaluating and firing the CEO and evaluating management performance. Service tasks include procuring scarce resources and providing advice and counsel to top management. The execution of strategic tasks involves giving strategic direction and advice and overseeing strategy implementation and performance. Lastly, legal tasks consist of monitoring the legal and ethical performance of the firm and ensuring compliance with statutory and other regulations. Board effectiveness represents the extent to which boards succeed in fulfilling their multiple tasks.

The model depicted in Figure 1 is centered on the idea that a board's SMM is a critical determinant of board effectiveness. The centrality of the SMM concept in our model requires

that the development of the propositions in this paper begin with an examination of the relationship between a board's SMM and board effectiveness (*Proposition 1*). This in turn necessitates propositions outlining the significance of SMM accuracy (*Proposition 2*) and SMM scope (*Proposition 3*) on board effectiveness.

Having developed the propositions for SMMs and board effectiveness it becomes crucial to develop the propositions for the determinants of SMMs in boards. In our model we conceptualize conflict as an antecedent to the board's SMM and the key mediating variable in the relationship between board attributes and the board's SMM. We analyze the two predominant forms of conflict studied in the organizational sciences literature: task conflict and relationship conflict (Jehn, 1997). The model depicts the relationship we propose between task conflict and SMMs in boards (*Proposition 4A*) and relationship conflict and SMMs in boards (*Proposition 4B*). Our final propositions address the impact of board attributes on the development of conflict among board members. We view conflict as a latent and ever present variable in boards due to the following board attributes: board size, CEO duality, and the proportion of outside directors on a board. Propositions 5-7 outline relationships between the listed board attributes and the development of task and relationship conflict in boards.

Insert Figure 1 about here

Shared Mental Model of the Board

In this paper, we have defined the SMM of the board as the extent to which there is agreement among the individual mental models held by board members. A SMM does not reside at the individual level, although each member contributes to the SMM. The term 'shared' does not mean that board members have an identical knowledge structure. We agree that board

members hold similar, compatible, common, or congruent knowledge structures which are effectively distributed across board members, when a SMM in a board exists. Although a SMM of the board mainly refers to agreement among individual board member's mental models of corporate governance, it does not necessarily imply a deliberate consensus-seeking process.

The question that must be addressed when discussing SMMs of the board is what do board members need to share? There is probably not a single mental model that must be shared among board members or encompasses every aspect of the system or process with which they interact. In fact, researchers contend that there can be multiple mental models co-existing among team members at any given point in time (e.g., Klimoski & Mohammed, 1994). It is believed that at any point in time, team members hold multiple mental models to actively conceptualize and process information about their task, team, other team members, and the environment.

In this paper, we focus on two aspects of a board's SMM in the form of board competencies leading to board effectiveness. We categorize board competencies required for effective performance that are either specific or generic to the task and specific or generic to the board as a team. That is, what is captured here are the mental models of board members in two domains: (1) beliefs in what issues or tasks are the most relevant to the firm and (2) beliefs in how board members interact with each other. In other words, we suggest that 'what is shared' falls into two broad categories – *task specific knowledge* and *team-specific knowledge*. First, board members should hold a shared task model (task-work mental model) that describes organized knowledge structures about what kinds of tasks are performed and how the tasks are accomplished in terms of task procedures, task strategies, task contingencies or problems, and environmental conditions. This type of knowledge allows board members to take actions in a

coordinated manner without the need to communicate overtly, and leads board members to have compatible expectations around priorities of governance objectives and means for board tasks.

Second, board members should hold a shared mental model of the team (team-work mental model) with regard to board interaction processes and the characteristics of board members which describe the roles and responsibilities of board members, norms, interaction patterns, knowledge, skills, and attitudes, interdependencies, and information sources. This type of knowledge allows board members to understand each other - their preferences, strengths, weaknesses, and tendencies - in order to maximize board performance. This type of knowledge should benefit task performance by helping board members to compensate for one another, predict each other's action, provide requested information, and allocate resources according to member expertise. A common level of understanding ensures that their own behaviors and those of others on the board benefit the board. In summary, task-work mental models represent what and how it is that boards are doing whereas team-work mental models describe how they are doing it with each other. When board members have different views of the board's task-work and team-work, the board experience can be frustrating, time consuming, and ultimately, ineffective.

With regard to the board's task-work, we contend that each board member will have particular mental models of the corporate governance tasks related to control, service, legal, and strategic initiatives. These mental models may vary among board members within a given firm because directors themselves have differing and sometimes ill-defined views of their proper roles on boards (Cogner, Lawlwer III, & Finegold, 2001). For instance, inside directors may view their governance roles as simply an extension of their managerial duties whereas outside directors view their tasks as separated from those of management (Mace, 1986).

Variations in views of roles can happen for a number of reasons. First, what is often neglected by the differing perspectives on what boards should do is a consideration of the potential for conflict among the various roles. For instance, directors with strong connections to the firm may view procurement and supply of key resources or counseling and advising the CEO on strategic issues as key responsibilities but they may not see effective supervision of the CEO or the appointment of new CEOs as their key function. Second, one of the most difficult challenges facing board members is how to allocate their limited time among many important tasks (Lorsch, 1989, Mace, 1986). This is a fundamental problem given the multiple and divergent demands they face. The issue is confounded by serious constraints on board members' time and influence (Monks & Minow, 1995). As explained earlier, boards meet episodically and when they do meet board members typically spend no more than a day together. The consequence is that board members face serious limits in their ability to meet all the potential demands placed on them. They can realistically and effectively deal with only a small number of issues facing the firm. Although directors can spend considerably more time on board-related activities outside of the formal meetings, they still face hard choices about where to focus their efforts. In this process, board members' choice or focus with regard to the board's key tasks is likely to vary.

As to the board's team-work, board members may come to understand each board member's skills, experiences, and knowledge that may contribute to board effectiveness. In addition, an understanding of team-work leads to less focus on mundane issues such as the length of meeting, the degree of formality, and the general pattern of decision-making. Shared knowledge on this board team-work process allows board members to reduce their own uncertainty and to make predictions about the behaviors of others (Berger, 1979). Hrebiniak and

Snow (1982: 1140) emphasized that “the reduction of uncertainty ... eliminates some of the potential stress associated with ambiguity, which may increase the effectiveness of managers charged with the execution of important decisions.” As board members develop a shared understanding of the board process, they can shift their attention more fully to their specific tasks, and, therefore, they can concentrate on the substance of their tasks and decisions (Katz, 1980).

We argue that in order to be effective, board members not only need to perform task-related functions well but they also must work well together as a team. Shared mental representations of knowledge pertaining to task-work and team-work enable board members to work under the same assumptions and have similar expectations regarding the roles and responsibilities of their board members. A SMM would foster cooperation and norms of mutuality among board members with relatively few process losses (Jehn, 1995). A SMM would allow board members to work toward common objectives and have a shared vision of how their board will function. Widely different mental models suggest that board members work toward different objectives and predict different future system states, and therefore have difficulties coordinating their work.

Since SMMs allow board members to draw on their own well-structured knowledge as a basis for selecting actions that are consistent and coordinated with those of their fellow board members, it may even foster a more efficient and effective governance strategy development by reducing excessive deliberation (Baker, Salas, Cannon-Bowers, & Spector, 1992). Thus, SMMs among board members are likely to allow board members to move quickly in the consideration of multiple governance issues without having to revisit underlying assumptions and goals. Board members who share similar mental models anticipate each other’s responses and coordinate

effectively when time is of the essence and opportunities for overt communication and debate are limited.

We believe that SMMs within board members are particularly important because of the complex, diverse, and ambiguous nature of the board's tasks. Research has shown that teams that perform well under uncertain, complex, and ambiguous conditions are highly coordinated and flexible (Eisenhardt, 1989, Eisenhardt & Bourgeois, 1988). Thus, we propose that sharedness of board members' task and team mental models would positively influence board effectiveness.

Proposition 1: The extent to which board members develop a SMM will increase the likelihood of board effectiveness.

MODERATORS: SMM ACCURACY AND SMM SCOPE

We have argued that the SMM of the board will improve board effectiveness. An implicit assumption of the argument is that the SMM will be a high quality SMM, where high quality refers to a SMM that is accurate and/or of appropriate scope. In other words, it is possible that low quality SMMs can exist. In a low quality SMM, board members share a mental model that is inaccurate and/or of inappropriate scope. For these reasons, it is important to examine the impact of SMM accuracy and scope in order to gain a better understanding of board effectiveness. The following section outlines SMM accuracy and scope as possible moderating variables in the relationship between a SMM of the board and board effectiveness.

SMM Accuracy

We define the accuracy of a board's SMM as the degree of correct understanding of task-work priorities and contingencies. If board members share a common mental model, but the accuracy of that SMM is poor, they will not likely perform well. The argument is that just because board members share a common vision of their tasks, this does not ensure it will be accurate and beneficial for their processes and performance. Board members may share a vision

of their situation yet be wrong about the circumstances that they are confronting. If a board's task mental model is to some extent inaccurate—if, for example, board members' understanding of task priorities is shared, but misguided—board performance is likely to suffer. Board members may work in a coordinated fashion to achieve ancillary, rather than primary, objectives or goals. In a similar vein, if board members' shared team-work mental model is inaccurate, board members are likely to suffer regarding board process issues and therefore work inefficiently and ineffectively toward their goals. In fact, some theorists (e.g., Rentsch & Hall, 1994) have argued that only shared and accurate team mental models enhance team performance. We expect that SMM accuracy will moderate the board's SMM-effectiveness relationship. If board members have SMMs of tasks and of team processes but their mental models are inaccurate, board members may focus on the wrong priorities or use inappropriate strategies. We propose that the accuracy of a board's SMM will moderate the relationship between the extent of SMM and board effectiveness.

Proposition 2: The relationship between a board's SMM and board effectiveness is moderated by SMM accuracy; the more accurate a board's SMM, the stronger the relationship between a board's SMM and board effectiveness.

SMM Scope

We define the scope of a board's SMM as the range of shared understanding of task-work priorities and contingencies, where range refers to the various goals and activities of the board. With regard to the range of a board's SMM, past research on corporate governance might suggest a tendency for boards to develop narrow rather than broad SMMs. For example, Ocasio's (1997) discussion of an attention-based view of the firm directs our attention to the impact of board members' attention on governance behavior in the firm. Ocasio (1997: 192) argued that “decision makers focus their attention on a limited set of issues ... and the issues and

answers they attend to and enact determines what they do.” This tendency would likely result from a board’s efforts to simplify governance task issues.

Given the complex and diverse governance issues facing contemporary boards, board members are likely to vary regarding the types of issues that capture their attention, as well as the degree of attention they devote to particular issues (Golden & Zajac, 2001). A study by Pearce (1983) supports this contention. Pearce (1983) examined whether directors were primarily concerned with internal or external issues, and found substantial variation in board member’s attention to internal or external issues. The roles and issues that receive more attention and the way they are dealt with are guided by beliefs which may or may not correspond with the acknowledged goals and means. The roles (e.g., control, service, legal, and strategy) and issues (e.g., environmental) board members pay attention to and how those roles and issues are interpreted and resolved are based on the scope of SMMs regarding their relevance and importance to the board. The narrow scope of SMMs may reflect a more basic, and perhaps more debilitating disagreement than would differences in cognitive structure over governance tasks or issues. We propose that boards whose SMMs cover a broad range of governance issues will outperform others that exhibit narrowness. Given the diverse nature of governance activities, diverse roles must be held together by a board mindset that understands the need for multiple governance capabilities and a willingness to interact openly and flexibly with other board members.

Proposition 3: The relationship between a board’s SMM and board effectiveness is moderated by SMM scope; the broader a board’s SMM, the stronger the relationship between a board’s SMM and board effectiveness.

THE EFFECTS OF CONFLICT ON THE DEVELOPMENT OF SMMS

A SMM does not mean the lack of conflict which is the key determinant of “groupthink”—negative aspect of personal attraction among team members (Janis, 1982). In fact, a SMM is developed with the presence of conflict among team members. Conflict in groups is inevitable due to the complexity and interdependent nature of most group tasks (Desivilya & Eizen, 2005). The value of conflict has been debated by organizational scholars in terms of its harmful and beneficial nature for group functioning. Early theorists asserted that conflict was harmful to group functioning and hence needed to be minimized or eliminated (Brown, 1983; Pondy, 1967; Schmidt & Kochan, 1972). In contrast, other research has demonstrated that conflict within a group can be beneficial in terms of improving financial performance and strategic decision making (Amason, 1996; Bourgeois, 1985; Eisenhardt & Schoonhoven, 1990). The mixed findings are indicative of the complex nature of intra-group conflict as it relates to group functioning and performance.

This conflict conundrum may best be accounted for by considering the two predominant types of conflict studied in organizations: task conflict (e.g., cognitive conflict) and relationship conflict (e.g., affective conflict). Task conflict is cognitive in nature and arises from disagreements between group members about the content, opinions, and ideas of the tasks being performed (Jehn, 1995; Amason & Sapienza, 1997). Relationship conflict is affective in nature and arises from personalized incompatibilities between group members that typically include feelings of animosity, annoyance, and tension (Jehn, 1995; Amason & Sapienza, 1997). The distinction between task conflict and relationship conflict is similar to other organizational theories such as Fiedler’s (1967; 1978) task oriented and relationship oriented leadership theory and Ancona and Caldwell’s (1988) task accomplishment and task maintenance theory. The task

conflict and relationship conflict distinctions allow for different predictions about the effect of conflict on group functioning and group performance (Jehn, 1997).

In this section of the paper we expand the findings of intra-group conflict theories to the study of conflict within corporate boards of directors. We explore intra-group conflict as an antecedent to the development of a SMM among board of director members. Specifically, our study examines two types of conflict as antecedents to SMMs: task conflict and relationship conflict.

Task Conflict and Relationship Conflict

Task conflict refers to disagreements between group members about the content of the task being performed (Chuang, Church, & Zikic, 2004; Jehn, 1995). Task conflict can arise from differences in viewpoints, opinions, and ideas (Jehn, 1995; 1997). Examples of task conflict include resource distribution and issues related to procedural guidelines (Jehn, 1995; 1997). It is important to note that by definition, task conflict is devoid of emotional interpretation (Jehn & Mannix, 2001). Thus, although task conflict may produce animated discussions, task conflict does not lead to negative emotional reactions such as those found with relationship conflict (Jehn & Mannix, 2001).

Task conflict has been often reported to result in beneficial processes and outcomes for groups (e.g., West & Anderson, 1996; Tjosvold, Dann, & Wong, 1992). Task conflict has been reported to be positively related to constructive debate (Jehn, Chadwick, & Thatcher, 1997) and innovation (Amason, 1996; West & Anderson, 1996). Task conflict often increases the likelihood that resources are effectively utilized (Tjosvold, Dann, & Wong, 1992) and that group members will respond positively to decisions made by the group (Korsgaard, Schweiger, & Sapienza, 1995). For complex cognitive tasks, task conflict has been found to be beneficial for

increasing decision quality by incorporating constructive criticism and devil's advocacy roles (Schweiger, Sandberg, & Rechner, 1989). In general, task conflict increases decision quality and the acceptance of group ideas for complex cognitive tasks (Amason & Mooney, 1999; Mason & Mitroff, 1981; Schwenk, 1990).

Relationship conflict has been defined as interpersonal conflict that includes an affective component related to feelings of friction and tension (Jehn & Mannix, 2001). Relationship conflict is often reported to lead to detrimental group processes (Jehn et al., 1999). Relationship conflicts are disagreements and incompatibilities over personal issues that are not related to group tasks (Guerra, Martinez, Munduate, & Medina, 2005). Typical group issues related to relationship conflict include gossip, political views and feelings related to frustration, annoyance, and irritation (Jehn, 1997; Jehn & Mannix, 2001). In addition, this type of conflict often includes personality differences and animosity (Guerra et al., 2005).

Empirical studies indicate a negative association between relationship conflict and organizational commitment (Jehn, Northcraft, & Neale, 1999), satisfaction (Jehn, 1995), and productivity (Gladstein, 1984). High relationship conflict appears to decrease goodwill and understanding among team members (Deutsch, 1969). At the same time, high relationship conflict also increases stress levels (Friedman, Tidd, Currall, & Tsai, 2000) and communication problems (Baron, 1991), and increases the amount of time spent on interpersonal problems rather than task related group problems (Evan, 1965). In general, relationship conflict has been found to be dysfunctional with respect to group member functioning, group performance, and the acceptance of group ideas (Amason & Sapienza, 1997; Janseen, Van de Vliert, & Veenstra, 1999; Staw, Sanderlands, & Dutton, 1981).

Past research on corporate governance has not considered the role of conflict in the functioning of boards of directors (Forbes & Milliken, 1999). The view taken here is that conflict does play a role in the functioning of boards of directors. Specifically, conflict plays a role in the development of a SMM for a board. This view is based on the idea that the most effective boards are the boards that have directors that share a common understanding of the problems that need to be resolved (Conger, Lawler, & Finegold, 2001).

The literature on corporate governance is replete with examples of the complex nature of the problems and opportunities that boards of directors are faced with in carrying out their activities (Conger, Lawler, & Finegold, 2001; Dalton, Daily, Ellstrand & Johnson, 1998; Zahra & Pearce, 1989). Key activity areas for boards include giving strategic direction and advice, overseeing strategy implementation and performance, developing and evaluating the CEO, developing human capital, monitoring legal and ethical performance of the corporation, preventing and managing crises, and procuring resources (Conger, Lawler, & Finegold, 2001). No other entity within an organization has a comparable combination of responsibilities due to its legal mandate and expertise (Zahra & Pearce, 1989). These responsibilities make it necessary for boards to deliberately consider multiple alternatives as solutions to problems and for board members to develop SMMs in order to operate effectively and successfully.

Due to the complex nature of corporate governance, boards are faced with the challenge of making decisions that are intended to be closer to being optimal in nature rather than satisfactory in nature. This sets the stage for heated debate among board members. Hence, the environment for decision making among board members is conducive to producing both task conflict and relationship conflict. Our view of conflict as it relates to a board's SMM is consistent with the positive and negative findings of conflict in groups (e.g., Bourgeois, 1980;

Eisenhardt & Schoonhoven, 1990; Gladstein, 1984; Jehn, 1995; Schweiger, Sandberg, & Rechner, 1989). Task conflict in groups often appears to enhance the sharing of information among group members involved in complex decision making tasks while relationship conflict often decreases the sharing of information among group members involved in complex decision making tasks (Amason & Sapienza, 1997; Schweiger, Sandberg, & Ragan, 1986). The sharing of information among group members is critical for the development of a SMM (Klimoski & Mohammed, 1994). Hence, task conflict is expected to be positively related to SMMs among board members and relationship conflict is expected to be negatively related to SMMs among board members.

Proposition 4A: Task conflict will be positively related to the development of SMM of the board.

Proposition 4B: Relationship conflict will be negatively related to the development of SMM of the board.

THE EFFECTS OF BOARD ATTRIBUTES ON CONFLICT

In this section, we attempt to demonstrate how structural attributes of boards can have an impact on the development of conflict in boards. We confine our attention to three frequently researched structural attributes of the board: board size, CEO duality, and proportion of outside directors. We offer predictions regarding the impact of these structural attributes on task conflict and relationship conflict.

Board Size

Board size has important implications for board functioning (Dalton et al., 1999). Larger teams generally have greater cognitive resources than smaller teams (Bantel & Jackson, 1989). As such, larger boards provide an increased pool of expertise and resources for the firm (Chaganti, Mahajan, & Sharma, 1985; Pfeffer, 1972; Zahra & Pearce, 1989). On the negative

side, larger boards have a greater potential for dissimilarities among board members (Smith, Smith, Olian, Sims, O'Bannon, & Scully, 1994). Dissimilarity among board members is a result of abundance of diverse experiences, skills, and knowledge. Hence, larger boards are likely to enhance the opportunity for both cognitive conflict and task conflict among board members. At the same time, large groups typically develop factions and coalitions that can increase task conflict and relationship conflict (O'Reilly, Caldwell, & Barnett, 1989). We expect that larger boards increase task conflict and relationship conflict among board members.

Proposition 5A: The size of the board will be positively related to task conflict.

Proposition 5B: The size of the board will be positively related to relationship conflict.

CEO Duality

By serving as the chairman of the board of directors, the CEO acquires a wider power base and locus of control (Patton & Baker, 1987). When compared to nonduality structure, CEO duality provides a CEO with advantages in hiring or promoting like-minded individuals and buying off resistors (Minzberg, 1983). Although CEO duality structure may lead to efficiency in the board's decision making processes, it might sacrifice evenness of participation of board members (Boyd, 1995). CEO duality permits a CEO-chairperson to dominate both the agenda and contents of board meetings (Finkelstein & D'Aveni, 1994). Hence, we expect that CEO duality will not enhance cognitive conflict among board members. At the same time, the presence of a unified leadership structure provides the CEO with a context which reduces relationship conflict. Under a nonduality structure there exists a system with two public spokespersons that can create the potential for rivalry between the chairperson and the CEO, resulting in promoting confusion as to who is the boss. Nonduality increases the possibility that actions of management and the board are at odds with each other (Alexander, Fennell, & Halpern,

1993). Thus, relationship conflict is likely to occur more frequently with nonduality because it produces more potential for confusion and disharmony.

Proposition 6A: CEO duality will be negatively related to task conflict.

Proposition 6B: CEO duality will be negatively related to relationship conflict.

Proportion of Outside Directors

The composition of a board has been posed as a key factor for board functioning (Baysinger & Butler, 1985; Mizruchi, 1983). Inside directors are viewed as usually not making exhaustive evaluation of board decisions (Pearce & Zahra, 1992). They are susceptible to “groupthink” (Deal & Kennedy, 1982; Janis, 1982) or faulty decision making that results when a group strives for conformity than critically evaluating alternatives. On the other hand, outside directors are viewed as being able to introduce objectivity to bear upon board decisions, initiate positive reinforcement in the board’s decision-making processes, and make profound evaluations regarding the actions of managers (Mizruchi, 1983; Zahra & Pearce, 1989). Since outside directors can think more freely about the firm’s objectives and strategic alternatives (Forbes & Milliken, 1999), it has been argued that they promote the airing of diverse perspectives and reduce narrow mindedness in a board’s evaluations of strategic decisions (Kosnik, 1990). We expect that the presence of outside directors is likely to increase cognitive conflict among board members.

Also, we contend that the presence of outside directors will increase affective conflict as well. Since inside directors are day-to-day participants in the strategic decision-making processes of the firm, they are well acquainted and work together on a regular basis. However, outside directors’ primary affiliation is not with the firm and they meet and interact only periodically with inside directors or with one another (Forbes & Milliken, 1999). This situation produces

many of the cohesional and communicational difficulties and diminishes the chance to decrease divergent feelings, views, and personal goals.

Proposition 7A: The proportion of outside directors will be positively related to task conflict.

Proposition 7B: The proportion of outside directors will be positively related to relationship conflict.

DISCUSSION AND CONCLUSION

In this paper we advance a shared mental model view of board of directors. The increasing importance of board performance as a strategic tool for contemporary organizations prompted us to develop a framework that contributes to the emerging literature on board effectiveness. Our framework suggests an indirect relationship between board attributes and board effectiveness that may shed light on the conflicting findings in the corporate governance literature that examines the direct relationship between board attributes and board effectiveness.

By suggesting an indirect relationship between board attributes and board effectiveness we are encouraging a rhetorical dialogue between communities of researchers that matches the complexities and nuances of the debates in the corporate governance literature. By evaluating and combining theoretical and empirical research from the shared mental models literature, group conflict literature, and corporate governance literature, we make an important contribution to the board effectiveness literature. Our model (Figure 1) was developed to provide a parsimonious description of the impact of shared mental models in boards on the effectiveness of boards in carrying out their functions. Our model begins by establishing that board attributes lead to conflict among board members. We examined three board attributes (board size, CEO duality, and the proportion of outside directors on a board) as antecedents to the development of conflict among board members. We propose that board size is positively related to task conflict

and negatively related to relationship conflict. We propose that CEO duality is negatively related to task and relationship conflict. And finally, we propose that the proportion of outside directors will be positively related to task and relationship conflict. The conclusion is that even a consideration of only three types of board composition attributes leads to a vast array of potential conflict outcomes between board members.

Next we examined the impact of conflict between board members and the development of shared mental models in boards. The underlying assumption is that conflict can be both functional and dysfunctional in boards. We propose that cognitive conflict among board members will be positively related to the development of shared mental models in boards and that relationship conflict among board members will be negatively related to the development of shared mental models in boards. The conclusion is given that conflict is inevitable it is important to recognize that the type of conflict being dealt with matters and that it is important that boards manage their conflict in order to develop shared mental models.

Thirdly, the crux of our model is the idea that shared mental models directly impact board effectiveness. We identified two key elements of the shared mental model: task-work beliefs and team-work beliefs (Klimoski & Mohammed, 1994). The idea is that in order for a board to be effective the board members must not only share a common understanding of their task related duties, but must also share a common understanding of their individual roles as members of a team. The conclusion is that the greater the amount of shared beliefs among board members' about task-work and team-work activities the greater the likelihood of high levels of board effectiveness.

Finally, our model proposes that both the accuracy and scope of the shared mental model of a board is important for board effectiveness. We propose that the accuracy and scope of the

shared mental model in a board will strengthen the relationship between a board's shared mental model and board effectiveness. For example, a shared mental model can be either accurate or inaccurate. An accurate shared mental model will strengthen the relationship between the shared mental model of a board and board effectiveness while an inaccurate shared mental model will weaken relationship between the shared mental model of a board and board effectiveness. In a similar manner, the scope of the board's shared mental model must be broader rather than narrower in order to increase the relationship between the shared mental model of a board and board effectiveness.

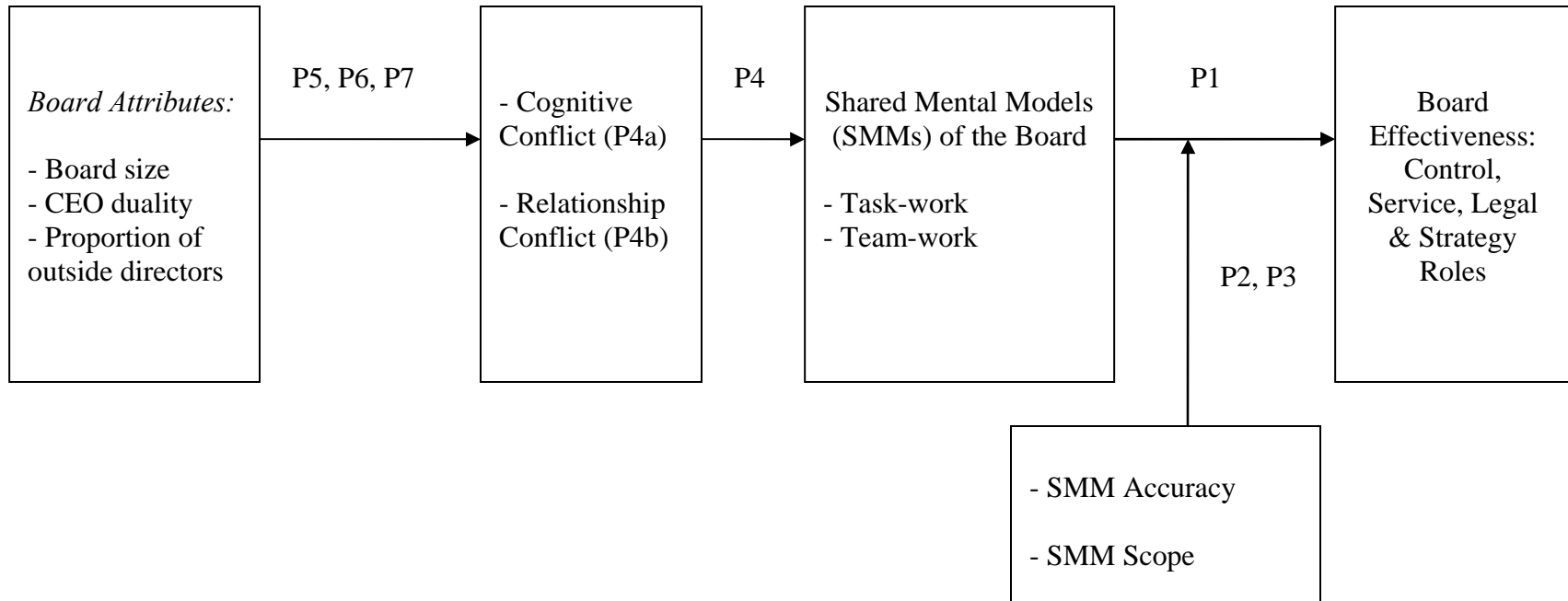
The shared mental model view of board effectiveness presented in this paper provides a promising explanation of the indirect nature of the relationship between board attributes and board effectiveness. By examining the shared mental models of boards we have introduced the study of collective cognition to the board governance literature. Future work based on our cognitive-oriented model of board functioning will enable researchers to consider the impact of cognition on board performance. For example, future researchers may want to consider individual-level cognitive issues such as schemas or stereotypes as they relate to board effectiveness. Gaining an understanding of cognition at both the individual and group level may lead to better explanations about board dynamics and in turn help to better explain the inconsistent findings of the relationship between board attributes and board effectiveness.

It is important to note that the shared mental model literature has overemphasized the overlapping perspective of sharing and underemphasized the complementary perspective of sharing (Mohammed & Dumville, 2001). For boards in particular, this overlapping knowledge is likely to be inefficient, create a redundancy of effort, and contribute to a less than optimal use of resources. Rather than measuring similarity globally and assuming that all board members need

to have common knowledge in all domains, future research should work toward specifying the domains and conditions under which distributed and common knowledge will aid or hinder team performance. In situations where overlapping knowledge is required, it is important to delineate which board roles need to share what information. There will be knowledge that needs to be held in common by all board members (i.e., identical), and some knowledge that will be unique to individual roles within the board (i.e., complementary).

Finally, we also note that our introduction of conflict as a precursor to the development of shared mental models in boards may aid in gaining an understanding of effective board functioning. Prior research has only considered cognitive conflict in boards (Forbes & Milliken, 1999) and suggests that cognitive conflict is positively related to task performance. Similarly, we argue that task conflict (referred to by Forbes & Milliken as cognitive conflict) enhances the development of shared mental models of the board whereas relationship conflict undermines the shared mental models of boards. The core of this dilemma is that these two types of conflict can be aroused by similar conditions. When boards stimulate task conflict, they may inadvertently trigger relationship conflict. As a result, well-intended efforts to develop board effectiveness may produce undesirable results. Therefore, boards that can stimulate cognitive conflict while avoiding affective conflict are likely to produce high quality shared mental models while also enhancing board effectiveness. The ability of the board to manage these two types of conflict is a key to board effectiveness. For this reason, future studies should consider the impact of various forms of conflict on board functioning.

FIGURE 1
A Theoretical Framework of the Shared Mental Model (SMM) of the Board



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