



How top management team behavioral integration and behavioral complexity enable organizational ambidexterity: The moderating role of contextual ambidexterity

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ABSTRACT

Little is known about how top management teams (TMTs) make balanced strategic decisions (exploration and exploitation) and spearhead organizational ambidexterity. To address the theoretical call to explore how TMTs can help create ambidexterity, we propose a theoretical model where TMT behavioral integration cultivates behavioral complexity in a TMT that can build organizational ambidexterity. Further, we argue that the relationship between TMT behavioral complexity and organizational ambidexterity is moderated by contextual ambidexterity. Drawing on research in the areas of leadership, TMT, organizational context and ambidexterity, we explore implications for future research.

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1. Introduction

Research in fields such as managerial economics, organization theory and strategic management (e.g., Ghemawat & Ricart Costa, 1993; Gibson & Birkinshaw, 2004; Holmqvist, 2004; Van den Bosch, Volberda, & de Boer, 1999; Winter & Szulanski, 2001) have recently adopted the human trait of *ambidexterity* (an individual's ability to use both hands with equal skill) as a metaphor to describe competent organizations (Tushman & O'Reilly, 1996, 1997, 2004). To ensure their viability and competitiveness in an increasingly turbulent environment in which multiple and inconsistent contextual demands can emerge (Christensen, 1998; Smith & Tushman, 2005; Tushman & O'Reilly, 1997), organizations look to expand their capacities to successfully confront intensifying paradoxes and effectively manage contradictory challenges. Nevertheless, the existence of organizational paradoxes, contradictions and conflicts (Lewis, 2000; Poole & Van de Ven, 1989) is crucial to keeping the system viable and enabling it to adapt and survive in the face of environmental disturbances (Thompson, 1967, p. 7). The synchronous pursuit of both exploration and exploitation via loosely coupled and differentiated subunits or individuals, each of which specializes in either exploration or exploitation (i.e., ambidexterity) (Gupta, Smith, & Shalley, 2006, p. 693) has been conceptualized as critical for adaptation, viability, and success (e.g., Benner & Tushman, 2003; March, 1991).

Research has tended to focus on how organizational ambidexterity is enabled and built. For example, researchers have studied structural ambidexterity (Tushman & O'Reilly, 1997) and contextual ambidexterity (Gibson & Birkinshaw, 2004) as important cultivators of the ambidextrous organization. However, in spite of these and other efforts we still need to better understand the drivers of ambidexterity in different situations, such that the conditions that give rise to more coordinated organizational research that can effectively straddle the scope and depth of the subject are more fully explored (Venkatraman, Chi-Hyon, & Iyer, 2005). Specifically, researchers acknowledge that an organization's TMT should play a key role in enabling and developing the requisite

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conditions for organizational ambidexterity (Gibson & Birkinshaw, 2004; Lubatkin, Simsek, Ling, & Veiga, 2006; Smith & Tushman, 2005). However, we know little about how an organization's TMT contributes to designing and shaping an ambidextrous organization. To address this theoretical call, we focus on the role of organizational leadership (i.e., top management team: TMT) in an ambidextrous organization.

While leadership research has long documented the leadership–organizational context linkage (e.g., Deal & Kennedy, 1982; Lewin, Lippitt, & White, 1939; McGregor, 1960; Schneider, Ehrhart, Mayer, Saltz, & Nilies-Jolly, 2005; Tsui, Zhang, Wang, Xin, & Wu, 2006), and the importance of contextual leadership (i.e., leadership as an emerging social construction embedded in a unique organization) (Osborn, Hunt, & Jauch, 2002), research on organizational ambidexterity has directed scant effort to exploring the role of TMTs in enabling and creating organizational ambidexterity (Lubatkin et al., 2006; Smith & Tushman, 2005). Understanding how an organization's TMT designs and builds an ambidextrous organizational system that is capable of mastering contradictory strategy, structure, culture and process orientations (i.e., exploitation) and adapting to its environment (i.e., exploration) is a key theoretical puzzle that has yet to be solved. As Gibson and Birkinshaw noted, to address the difficult challenge of developing complex behavioral responses that foster both exploration and exploitation, “a promising extension ... would be to more systematically examine the behaviors of senior executives in an effort to understand how they help create ambidexterity” (2004, p. 223). Hence, a key theoretical question is which major TMT mechanisms address the challenge of developing complex behavioral responses that foster both exploration and exploitation. To begin answering this theoretical question, we propose a model that links top management team processes and behavioral complexity capacities and organizational context for ambidexterity (contextual ambidexterity) to organizational ambidexterity.

In what follows, we develop the following notions: first, we suggest that contextual ambidexterity, which is referred to as the organizational behavioral capacity to simultaneously demonstrate exploration and exploitation across an entire system (Gibson & Birkinshaw, 2004), is a critical moderating condition for creating an ambidextrous organization. Drawing on models of behavioral complexity in leadership which focus on the level of pressing social demands and the ability to play multiple roles that call for diverse and competing behaviors, it is argued that complex behaviors are critical to organizational adaptation and survival (Sale, 1980). We claim here that the capacity of leaders to engage in a wide repertoire of behaviors (Hooijberg & Quinn, 1992), and the “ability to exhibit contrary or opposing behaviors” (Denison, Hooijberg, & Quinn, 1995, p. 526) are key enablers of organizational ambidexterity. However, this relationship depends on the extent to which a context for ambidexterity has been developed in the organization.

Second, a growing body of literature indicates the merits of shared leadership (Pearce & Conger, 2003) and provides “clear support for the conclusion that the top team, rather than the top person, has the greatest effects on organizational functioning” (O'Reilly, Snyder, & Boothe, 1993, p. 150). Hence, instead of focusing on the individual leader's behavioral complexity capacities, we concentrate on behavioral complexity in a TMT. It is not clear why some TMTs possess high levels of behavioral complexity while others do not. We propose that dynamics and processes within the top management team play a critical role in building behavioral complexity capacities. This is because internal TMT processes are crucial to explaining adaptive and maladaptive organizational responses to change (Carmeli & Schaubroeck, 2006; Hambrick, 1998; Mooney & Sonnenfeld, 2001; Simsek, Veiga, Lubatkin, & Dino, 2005). This “teamwork allows the CEO to engage in a participative group process through which diverse members wrestle together with difficult issues to make decisions and build commitment to implementing them, giving rise to strategic leadership effectiveness” (Edmondson, Roberto, & Watkins, 2003, p. 298). Specifically, we suggest that the TMT behavioral integration, a “meta construct” that refers to the extent to which a TMT engages in mutual and collective interaction (Hambrick, 1994) is a form of *teammess* that is particularly critical for the emergence of behavioral complexity in TMTs. We argue that through high quality mutual and collective interactions characterized by quantity and quality of information exchange, collaborative behavior, and joint decision making (Hambrick, 1994, p. 189), a TMT is better able to exhibit contrary or opposing behaviors, and build an ambidextrous organization. As such, we propose a multi-level model where behavioral integration and behavioral complexity are analyzed at the group level whereas contextual ambidexterity and organizational ambidexterity are approached at the organization level (Fig. 1).

The current article is structured as follows: we first discuss the concept of behavioral integration. We then expand our theory by discussing TMT behavioral complexity and how TMT behavioral integration gives rise to behavioral complexity in a TMT. The link between TMT behavioral complexity and organizational ambidexterity, and the moderating role of contextual ambidexterity are discussed in the fourth section. Finally, we discuss the theoretical implications of this article and potentially fruitful avenues for future research, as well as underlying methodological challenges and managerial implications.

2. TMT behavioral integration

A TMT refers to the CEO and senior executives who hold positions at or above the level of vice president such as president, chief financial officer (CFO), and chief operational officer (COO) and are considered to be “direct reports.” A TMT member is an individual who plays a key role in the strategic and practical orientation of the firm (Castanias & Helfat, 1991; Hambrick & Mason, 1984).

Since the research of Hambrick & Mason (1984) exploring the impact of TMT characteristics and functions on organizational behavior and outcomes, strategy and organizations researchers have been making intensified efforts to gain a better understanding of the role played by TMTs in organizational leadership. Drawing on the seminal work of Hambrick & Mason (1984) which advocated the notion that the organization is a reflection of its TMT's attributes, considerable research effort has been directed toward linking the composition of a given TMT to competitive moves (Hambrick, Cho, & Chen, 1996), global strategic posture (Carpenter & Fredrickson, 2001), expansive global strategies (Sanders & Carpenter, 1998), strategic change (O'Reilly et al., 1993, Wiersema & Bantel, 1992), and commitment to innovation (Daellenbach, McCarthy, & Schoenecker, 1999), among others. However,

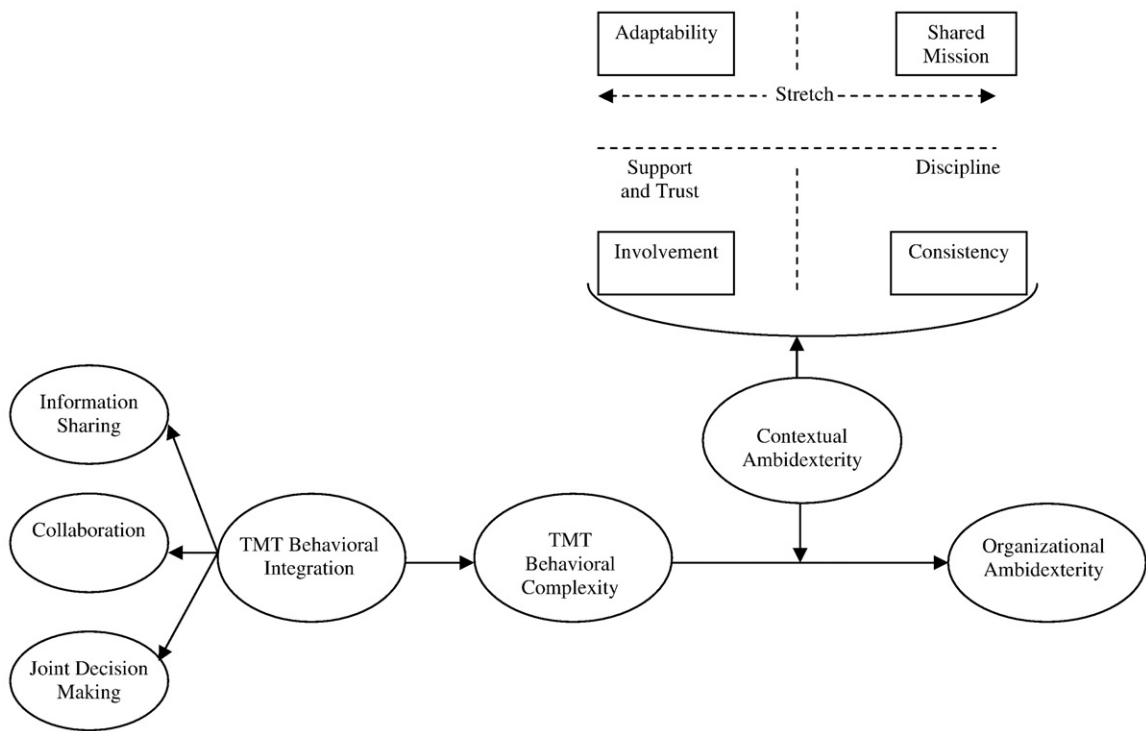


Fig. 1. TMT behavioral integration, TMT behavioral complexity, contextual ambidexterity, and organizational ambidexterity.

ambiguous and inconsistent empirical results have led researchers to conclude that TMT heterogeneity can be a double-edged sword. As West and Schwenk comment: “pursuing this line of inquiry further will yield inconsistent [results] at best and fruitless [results] at worst” (1996, p. 571). A different approach to TMT research consists of opening up the “black box” (Lawrence, 1997). This line of thinking has yielded a call to invest more efforts in better understanding TMT processes and dynamics such as social integration (Smith et al., 1994), consensus (Bourgeois, 1980), communication quality and frequency (Smith et al., 1994) and interdependence (Michel & Hambrick, 1992).

Recently, scholars have begun concentrating on the antecedents and consequences of TMT processes. TMT processes are thus seen as distinct from group processes, because TMT members deal with higher levels of firm-related task responsibilities, individually as senior executives, and interdependently as members of a firm’s top decision-making team. However, too little attention has been paid to the actual mechanisms that serve to convert group characteristics into organization outcomes (Hambrick, 1994, p. 185). He suggests recasting specific social and task processes into an all-compassing “meta construct” of *behavioral integration*, which refers to “the degree to which the group engages in mutual and collective interaction” (p. 188) or, in other words, exhibits a high degree of *teamness* (Hambrick, 1998).

TMT behavioral integration has been shown to impact on organizational processes and outcomes. Hambrick (1998) reported that behavioral integration enabled TMTs to integrate knowledge and insights to create core competencies, react well to increasing market needs, and develop global strategy. Mooney & Sonnenfeld (2001) found that behavioral integration was negatively related to affective and cognitive conflict. Li & Zhang (2002) found that industry growth and marketization were positively related to behavioral integration and that the latter facilitated product innovation intensity. Carmeli (2008) found a positive relationship between TMT behavioral integration and multiple performance measures of service firms. Carmeli & Schaubroeck (2006) found that TMTs differ as regards group process effectiveness. In particular, behavioral integration becomes particularly critical to group performance when the group is confronted by the rapid and unexpected changes that characterize organizational decline. Li & Hambrick (2005) expanded the study of behavioral (dis)integration (the inverse of behavioral integration) to include joint venture management groups and found that behavioral (dis)integration is negatively related to subsequent performance. Finally, Lubatkin et al. (2006) found that the extent to which a firm’s TMT is behaviorally integrated is positively associated with an ambidextrous orientation.

3. TMT behavioral integration and TMT behavioral complexity

As early as 1945, Fitzgerald noted that a test of first-rate intelligence is the ability to hold two opposing ideas in the mind at the same time and still be capable to retain the ability to function. Thus, effective leaders are those who possess the necessary cognitive and behavioral complexity to respond to contrary behaviors.

Today's complexity theorists focus on the structure of human information processing and examine the ability of individuals or entities to respond to a host of ambiguous and contradictory forces, including the simultaneous presence of opposites (Denison et al., 1995). Complexity theory encompasses varied terminology and approaches such as cognitive complexity, integrative complexity and interactive complexity theory. Satish (1997) suggested the umbrella term *behavioral complexity* to cover all of these avenues of exploration.

Early natural-system studies suggested that in order to enable adaptation and survival, uncertainty can be managed through informal mechanisms (e.g., such as sentiments, cliques, status) which are essential for “permitting the system to adapt and survive” (Thompson, 1967, p. 7). This is of importance given more contemporary research findings on the role of environmental uncertainty in managers' capacity to make quality decision making, and as regards overall managerial performance (Dowling, 1986; Downey & Slocum, 1982; Gifford, Bobbitt, & Slocum, 1979).

Researchers distinguish between two key components of behavioral complexity: *behavioral repertoire* and *behavioral differentiation* (Denison et al., 1995; Hart & Quinn, 1993; Hooijberg, 1996; Hooijberg & Hunt, 1997). *Behavioral repertoire* refers to the portfolio of leadership roles managerial leaders can perform, while *behavioral differentiation* refers to the ability of managerial leaders to perform the leadership roles differently depending on the organizational situation. When considering behavioral repertoire, it should be noted that leadership is defined in terms of expected functions and behaviors (Mintzberg, 1973; Yukl, 2002) and leadership roles are assumed to be partly contradictory with one another (cf. Competing Values Framework (CVF), Quinn, 1984, 1988). Research supports the idea that managers who perform multiple and competing roles are more effective than those who do not (e.g., Blake & Mouton, 1964; Mintzberg, 1973; Quinn, Spreitzer, & Hart, 1991). For instance, Hooijberg (1996) demonstrated the strong positive effects of behavioral repertoire on each organizational role-set group; i.e., subordinate, peer and superior, perceptions of effectiveness.

Up to now, leadership behavioral complexity has been seen as an individual level construct. That is, behavioral complexity has been referred to as a leader's ability to take on multiple roles, and to perform these leadership roles differently (Black & Boal, 1996; Denison et al., 1995; Hart & Quinn, 1993; Hooijberg, 1996; Hooijberg & Hunt, 1997). Here, we argue that behavioral complexity may also be a characteristic of the TMT. Just as individual leaders can develop behavioral complexity, teams, through enabling processes (as explained below), can be characterized as high or low on behavioral complexity. Our approach is similar to ones that explore individual leaders' capacity to learn and team capacity to learn. For example, consider the individual context-for-learning and group context-for-learning constructs. The former is defined as an “individual's perception of his/her ability to learn within his/her organization” and is characteristic of the individual leader (i.e., individual-level construct). Group context-for-learning, defined as “the collective perception by a group of the members' ability to learn within an organization” is a group-level construct (Black, Oliver, Howell, & King, 2006, p. 40). The present study refers to behavioral complexity at the group level and examines TMT capacity to carry out a portfolio of leadership roles (*behavioral repertoire*) and its ability to perform the right leadership roles differently depending on the organizational situation (*behavioral differentiation*). The next sections discuss the processes and dynamics that are indicative of team effectiveness and give rise to behavioral complexity.

3.1. How TMT behavioral integration give rise to TMT behavioral complexity

Following the broad definition of team effectiveness of Wageman, Hackman, & Lehman (2004), we elaborate on the role of social and task-related mutually reinforcing processes (i.e., behavioral integration) in enabling behavioral complexity to emerge. Collaboration is a social-related process which has been defined as “the presence of mutual influence between persons, open and direct communication and conflict resolution, and support for innovation and experimentation” (Aram & Morgan, 1976). Collaborative processes: 1) enable a TMT to exploit complementary resources and skills, and increase the portfolio of roles it can perform effectively (behavioral repertoire), 2) enhance TMT mental capacity to process and interpret information and understand complex processes (cognitive complexity) (Yukl, 2002), and 3) increase TMT capability to tailor and provide the most appropriate responses in diverse social situations (behavioral differentiation) (Zaccaro, Gilbert, Thor, & Mumford, 1991). In addition, collaboration may, directly and indirectly, give rise to behavioral complexity by fostering commitment and participation (the Human Relation Model) and innovation (the Open Systems Model).

Research evidence shows that participative decision making or joint decision making, the task-related construct of behavioral integration, increases motivation, job satisfaction and commitment, promotes organizational citizenship behavior, enriches information flow, and makes communications more open and transparent (e.g., Anderson & McDaniel, 1999; Pearson & Duffy, 1999). These sequential processes and behaviors can power individual and team capabilities to address internal (i.e., information management) and external (i.e., innovation) processes. Moreover, these processes and behaviors can help make organizational capability flexible and spontaneous (i.e., participation, openness) as well as structured and predictable (i.e., control, direction).

The third and task-related construct of behavioral integration refers to the quantity and quality of information exchange in a team. The exchange of information is the key difference between individual and group decision making. As such it has a pivotal role in decision making within a team. Information exchange brings to the fore more complete information and individual preferences about decision alternatives, and hence leads to greater team effectiveness. We argue that the process of information exchange, both frequently and quantitatively, assists team members as individuals and the whole team in adapting to its environment (i.e., the roles of the open system model) and in managing internal processes (i.e., the internal process model) through effective and qualitative decision making within TMTs.

As discussed above, each of the three constructs of behavioral integration can influence a TMT's ability to cultivate its behavioral complexity. However, since these constructs are interrelated and intensify one another, their collective presence within the TMT

can influence the TMT's behavioral complexity to a large degree. Previous studies have found that TMT behavioral integration impacts on organizational processes and outcomes.

We suggest that differences in group process effectiveness among TMTs, particularly in their levels of behavioral integration, can account for differences in TMT behavioral complexity. Hambrick et al. (1996) argued that low TMT behavioral integration makes it difficult for a TMT to adapt to external challenges in a timely manner. Siegel & Hambrick (1996) assert that behaviorally integrated teams make better use of knowledge alternatives. TMT behavioral integration helps to create a climate of trust and reciprocity (Coleman, 1990; Granovetter, 1985; Uzzi, 1997), enhancing focus and attention regarding the task at hand rather than spending time on politics and bargaining (Cyert & March, 1963), and enlist higher commitment and follow-up regarding team decisions (Carmeli & Schaubroeck, 2006). Moreover, this type of group dynamics embraces opposing points of view (Janis, 1972), combines knowledge and insights to respond well to increasing market needs, creates core competencies, and develops global strategies (Hambrick, 1998). In addition, it provides teams with a broad set of insights that sensitize to a variety of inputs (Simsek et al., 2005) and values, and enables them to exploit complementary personalities, values, skills, experience and knowledge.

Hence, we make the case that TMT behavioral integration is a key mechanism in enabling behavioral complexity, which is reflected in a broader TMT repertoire (i.e., a wide range of leadership roles) and behavioral differentiation (i.e., the ability to carry out leadership roles differently: more adaptively, more flexibly, etc.).

Proposition 1. *There is a positive relationship between TMT behavioral integration and TMT behavioral complexity.*

4. TMT behavioral complexity and organizational ambidexterity: the moderating role of contextual behavioral complexity

4.1. Organizational ambidexterity

The notion that organizations need to build capacities for managing and reconciling contradictory forces was clear in early research in organization science (Barnard, 1968; Cameron & Quinn, 1988; Poole & Van de Ven, 1989; Thompson, 1967). While it is sometimes said that contradictions can have negative outcomes such as slowing down processes or increasing struggles for power, the literature on organizational paradoxes, contradictions and conflicts (Lewis, 2000; Poole & Van de Ven, 1989) suggests that inconsistent and contradictory agendas coexist and can both succeed simultaneously. Indeed, these inconsistencies and contradictions are very important as they help “keep the system viable in the face of disturbances stemming from the environment” (Thompson, 1967, p. 7).

Organization scientists have recently adopted the human trait of *ambidexterity* (an individual's ability to use both hands with equal skill) as a metaphor to describe competent organizations. Ambidextrous organizations are ones that are capable of exploiting existing competencies as well as exploring new opportunities with equal dexterity (e.g., Duncan, 1976; March, 1991; Tushman & O'Reilly, 1996). The idea behind ambidexterity is that a firm's task environment is always to some degree in conflict, so there are always trade-offs to be made. Although these trade-offs can never be entirely eliminated, the most successful organizations reconcile them to a large degree and, by doing so enhance their long-term competitiveness (Gibson & Birkinshaw, 2004). However, recently, drawing on the observation that organizations operate within a broader social system characterized by interdependencies between organizations, it has been suggested that under certain conditions, specialization in either exploration or exploitation can achieve a balance via the market interface (Gupta et al., 2006). Lei & Slocum (2005) make the point that the type of industry environment can affect the rate of technological change and that a firm's lifecycle (growth/mature) requires specific strategic choices to create an organization-environment fit.

Firms tend to divide their attention and resources between exploration and exploitation, which are seen in the literature as two broad types of qualitatively distinct learning and knowledge processes (Floyd & Lane, 2000; March, 1991). *Exploration* implies firm behavior characterized by variance-increasing activities, search, discovery, experimentation, risk-taking and innovation, whereas *exploitation* is characterized by variance-decreasing, disciplined problem solving, refinement, implementation, efficiency, production and selection (Cheng & Van de Ven, 1996; March, 1991). Studies have suggested that these capabilities require substantially different strategies, cultures, structures and processes (e.g., Benner & Tushman, 2003). *Exploration* is associated with organic structures, loosely coupled systems, path-breaking, improvisation, autonomy and chaos, emerging markets and technologies. *Exploitation* is associated with mechanistic structures, tightly coupled systems, path dependence, routinization, control and bureaucracy, and stable markets and technologies (Ancona, Goodman, Lawrence, & Tushman, 2001; Lewin, Long, & Carroll, 1999).

The notion of balance between exploitation and exploration has been a consistent theme across several research approaches in organization theory, strategic management and managerial economics (e.g., Ghemawat & Ricart Costa, 1993; Holmqvist, 2004; Van de Ven, Polley, Garud, & Venkataraman, 1999; Winter & Szulanski, 2001). Too much exploitation results in inertia and dynamic conservatism (Benner & Tushman, 2002; Sull, 1999) or as Levinthal and March state, “an organization that engages exclusively in exploitation will ordinarily suffer from obsolescence” (1993, p. 105). Similarly, too much exploration is ‘building tomorrow's business at the expense of today's’ (Gibson & Birkinshaw, 2004) or, as Levinthal and March note, “an organization that engages exclusively in exploration will ordinarily suffer from the fact that it never gains the returns of its knowledge” (1993, p. 105). Here, organizational ambidexterity is referred to as the synchronous pursuit of balanced exploration and exploitation agendas. In other words, an ambidextrous organization is a system that synchronously pursues the refinement and extension of existing competencies, technologies, and paradigms (i.e., exploitation) as well as experimentation with new alternatives and options (i.e., exploration) (March, 1991, p. 85). This is consistent with the view of Gupta et al. (2006) that both agendas (exploration and exploitation) entail a certain type and degree of learning.

4.2. TMT behavioral complexity and organizational ambidexterity

Understanding how an organization's TMT designs and builds an ambidextrous organizational system that is capable of mastering contradictory orientations such as exploitation and exploitation is a key theoretical puzzle. Indeed, Lubatkin et al. (2006) noted that although previous studies have pointed to the integrative role of the top management team (TMT) in helping to create mechanisms (Smith & Tushman, 2005) that enable ambidexterity, and that the latter is largely driven by TMTs' "internal processes that enable them to handle large amounts of information and decision alternatives and deal with conflict and ambiguity" (Tushman & O'Reilly, 1997, p. 23), there is a need specify the precise nature of these TMT processes.

Research suggests that TMTs influence ambidextrous orientation through decision making processes. TMTs engage in resource allocation and organizational design decisions (Edmondson et al., 2003; Eisenhardt & Zbaracki, 1992; Hambrick, 1994) to balance short- and long-term outcomes (Smith & Tushman, 2005). Smith & Tushman (2005) define balanced strategic decisions as 1) decisions that are distributive in that they involve the division of resources between the existing product and the innovation and they are balanced when, over time, they support both products, and 2) as decisions that are integrative in that opportunities, linkages, and synergies that might arise from the exploitative and exploratory activities are recognized.

Thus, how do TMTs make balanced strategic decisions that lead to organizational ambidexterity? Extending on an emerging stream of research that emphasizes the importance of internal processes within a TMT (Eisenhardt, 1989; Hambrick, 1994; Knight et al., 1999; O'Reilly et al., 1993; Simons, Pelled, & Smith, 1999; Smith et al., 1994), Lubatkin et al. posited that by synchronizing the team's social and task processes, "a behaviorally integrated TMT can promote a more diverse and deeper understanding of the team's existing explicit knowledge base, as well as a better use of that base" (2006, p. 651). Our study elaborates on this line of research and thinking and argues that TMT behavioral integration is a necessary condition for making balanced strategic decisions leading to ambidexterity. However, we suggest that TMT behavioral integration fosters behavioral complexity in a TMT, which in turn can lead to ambidexterity.

Specifically, we postulate that a TMT, which is characterized by the capacity to perform a portfolio of leadership roles as well as manage them differently, is likely to make balanced decisions over time and pursue both exploration and exploitation agendas. We suggest that a TMT, which communicates complex behaviors, i.e., takes on a wide range of leadership roles and differentiates between them depending on the organizational situation (TMT behavioral complexity), is likely to make more balanced strategic decisions than a TMT that is low in communicating complex behaviors.

Traditionally, behavioral complexity theory concerns individual leaders and suggests that effective leaders need to be behaviorally complex because they are required to respond to the shifting mosaic of circumstances inside, but more particularly outside the organization (Satish, 1997). However, this theory also applies to groups (in our case TMTs) who attempt to cope with a volatile, complex, and potentially ambiguous environment (McKenna, Rooney, & Boal, 2007) and through behavioral complexity maintain high performance (Black & Boal, 1996). Research shows that through a large repertoire of leadership roles and selective applications, effective leadership and enhanced organizational outcomes are achieved (Bullis, 1992; Denison et al., 1995; Hart & Quinn, 1993; Hooijberg & Quinn, 1992; Quinn et al., 1991). This is because a behaviorally complex TMT is able not only to implement a large behavioral repertoire but also has the ability to select the right roles for the situation. In addition, a behaviorally complex TMT is able to effectively manage contradictions such as exploration and exploitation through two distinct cognitive processes—differentiation (a process that involves recognizing and articulating distinctions) and integration (a process that involves shifting levels of analysis to identify potential linkages) (Smith & Tushman, 2005).

By differentiating, a TMT is able to clarify distinctions between the existing product and innovation. This process encourages a TMT to explore new agendas (markets, competencies, and opportunities) for the innovation without damaging the exploitation of existing products. According to Smith & Tushman (2005), differentiating between strategic agendas enables a TMT to develop the behavioral complexities such that both agendas can be sustained (Denison et al., 1995; Dutton & Jackson, 1987). Integrating is also a way in which a TMT develops behavioral complexity as it helps the team to "explicitly look for ways that the contradictory strategies can help each other (Smith & Tushman, 2005, p. 527)...and reinforces (existing product and innovation) and makes mindful possible synergies between these products" (Smith & Tushman, 2005, p. 529). On the basis of this logic, we put forward the following proposition:

Proposition 2. *TMT behavioral complexity is positively related to organizational ambidexterity.*

4.3. The moderating role of context

Researchers have long pointed to the need to consider context in leadership studies (Antonakis, Avolio, & Sivasubramaniam, 2003; House & Aditya, 1997; Zaccaro & Klimoski, 2001), because leadership is an emerging social construct embedded in a unique organization (i.e., contextual leadership) (Osborn et al., 2002). Indeed, Rousseau & Fried (2001) called on researchers to contextualize organizational research, because researchers often fail to consider context across national borders, but also do not pay appropriate attention to modeling contextual effects within countries.

Context has many facets and covers various conditions and situations (e.g., constraints versus opportunities, enablers versus obstacles) that are external to and affect individual behaviors (Johns, 2006; Mowday & Sutton, 1993; Rousseau & Fried, 2001). In this study, we refer to the organizational context pertaining to ambidextrous organizations and consider its moderating effect in the relationship between TMT behavioral complexity and organizational ambidexterity. This is consistent with recent research that has pointed to the need—in addition to structural ambidexterity (such as *structural separation*, *task partitioning* and *temporal*

separation (e.g., Adler, Goldoftas, & Levine, 1999; Drucker, 1985; Galbraith, 1982, 2002; Tushman & O'Reilly, 1996))—to consider the importance of contextual ambidexterity which manifests a behavioral orientation toward dual capabilities (Gibson & Birkinshaw, 2004). As such, contextual ambidexterity is a multidimensional construct, with exploration and exploitation each constituting a separate, but interrelated, non-substitutable element. According to this perspective, ambidexterity is best achieved by creating a context that encourages individuals to make their own judgments as to how best to divide their time between the conflicting demands of exploration and exploitation.

The question then is what constitutes a context pertaining to an ambidextrous organization? Gibson & Birkinshaw (2004) adopted the conceptualization of organizational context of Ghoshal & Bartlett (1994) as four interdependent behavior-framing attributes: *discipline* (an attribute that leads to 1) clear standards and expectations, 2) a system of open and fast-cycle feedback, and 3) consistency in the application of sanctions), *stretch* (an attribute that manifests 1) the establishment of shared ambition, 2) the emergence of a collective identity, and 3) the development of personal significance in turnaround tasks), *trust* (an attribute that manifests and induces 1) fairness and equity, 2) involvement and 3) enhanced personal competence of organizational members), and *support* (an attribute that manifests a more help-oriented managerial approach that leads to 1) greater availability of resources, 2) increased autonomy and 3) a supportive environment in members' initiatives and entrepreneurship).

Contextual ambidexterity in terms of the conceptualization of Ghoshal & Bartlett (1994) means a balance between opposing yet interdependent and complementary attributes. For example, organizations need to pay attention to both discipline and stretch because they give a sense of direction and enable individuals to better exploit existing products, but they also need to provide trust and support to engender individual behaviors that pursue the exploratory orientation. Conversely, too much of a good thing can be harmful. That is, too much attention to discipline and stretch may cause members to suffer exhaustion and develop a low level of expectation, while too much emphasis on trust and support may stop work from getting done (Gibson & Birkinshaw, 2004).

Similarly, the literature provides two other frameworks of organizational context (though neither explicitly indicates that their features manifest contextual ambidexterity) pertaining to ambidextrous organizations. These are the Competing Values Framework (CVF) (Quinn, 1984, 1988; Quinn & Rohrbaugh, 1983) and the Organizational Culture Model (Denison, 1990) of organizational performance. These models highlight contradictory yet complementary elements that must be balanced in order to enhance organizational effectiveness. The CVF model sheds light on differences along the dimensions of flexibility vs. control and internal vs. external focus. Four quadrants and eight leadership roles are represented in a circular pattern based on the two underlying dimensions. As Denison, Hooijberg, & Quinn (1995) note, Quinn (1984, 1988) did not develop the concept of behavioral complexity or contextual ambidexterity. However, his leadership model does stress the same basic theme: the need for a context that reframes underlying polar opposites such as stability and flexibility and reconciles such extremes in a way that both exploration and exploitation are achieved. In a similar vein, Denison and colleagues' Organizational Culture Model (Denison, 1990; Denison & Mishra, 1995) highlights four cultural traits; namely, involvement, consistency, adaptability, and mission along two dimensions: internal vs. external focus and flexibility vs. stability. As noted above, an organization needs to build a context where there is balance between mission and involvement as well as between consistency and adaptability. As such it relates to contextual ambidexterity, which enables members to engage in both exploration and exploitation.

Clearly, a TMT plays a significant role in shaping organizational context. This takes place through various decisions and actions affecting value chain activities. However, one of the most intriguing questions is how leaders design and nurture specific contexts that enable better organizational outcomes. Essentially, organization members seek leaders' signals or cues as to what behavior is deemed normal and acceptable in their relative work organizations (Dutton, 2003). Research on authority in groups indicates that what leaders expect, together with the way they behave and act, signals what is expected and how things should be carried out (Tyler & Lind, 1992). Leadership behaviors shape followers' perceptions and behaviors towards a work task. This is accomplished through setting a salient example about how to behave, and by conveying beliefs concerning the ways in which leaders can use their power (Edmondson, 2004). Followers carefully heed their leaders' behaviors and adjust their perceptions and behaviors accordingly (Gardner & Avolio, 1998; Tyler & Lind, 1992). Leaders' direct influence on employee behavior through role modeling (Bandura, 1996) or exchange processes (Graen & Uhl-Bein, 1995) play a separate role apart from the influence leaders exert by creating context. Thus, organizational leaders are seen as the main shaper and builder of organizational context (e.g., Lewin et al., 1939; McGregor, 1960; Koene, Vogelaar, & Soeters, 2002; Schein, 1992). Schein (1992) argued that leadership behaviors are a key mechanism by which context is embedded in an organization. Recent studies have raised the need to explore specific contexts in particular organizational settings; for instance, studies have focused on service, ethics and a safety climate as enablers of organizational outcomes (e.g., Barling, Loughlin, & Kelloway, 2002; Grojean, Resick, Dickson, & Smith, 2004; Guldenmund, 2000; Schneider et al., 2005; Zohar, 2000, 2002).

Following this line of research, we argue that behavioral complexity in a TMT is an important mechanism for enabling an ambidextrous orientation. Effective TMTs are those who possess the necessary cognitive and behavioral complexity to respond to contrary behaviors. As Lei & Slocum (2005) noted, in order to respond effectively to complex adaptive systems, upper echelon executive members need to craft a coherent strategy that integrates several core pillars delivering value.

Smith & Tushman (2005) noted that while organizations can excel when TMTs effectively balance strategic contradictions, contextual and structural barriers often prevent them from doing so (Bazerman & Watkins, 2004; Van de Ven et al., 1999; Virany, Tushman, & Romanelli, 1992). Leading an organization to balance strategic contradictions successfully depends on the extent to which an organizational context articulates the capability to employ a wide variety of roles and occasionally contradictions. This is what has been termed by Gibson & Birkinshaw (2004) as contextual ambidexterity, and refers to an organization-specific context that builds and enables the meta-capabilities of exploration and exploitation to flourish simultaneously. This context manifests an

enabling environment in which members are trained to recognize and react to paradoxes, opposing issues and complexity in their environments. Hence, the following proposition is suggested:

Proposition 3. *Contextual ambidexterity will moderate the relationship between TMT behavioral complexity and organizational ambidexterity. The positive relationship between TMT behavioral complexity and organizational ambidexterity will be stronger in organizations that develop contextual ambidexterity.*

5. Discussion

5.1. Theoretical implications

Our primary goal in the current article has been to address the theoretical call to better understand the conditions that give rise to more coordinated organizational research which will effectively straddle scope and depth (Venkatraman et al., 2005). Specifically, we attempted to shed light on the role of TMTs in designing and enabling an ambidextrous organization. In doing so, we tackled a promising avenue of research related to the way an organization's TMT can cultivate contextual and organizational ambidexterity (Gibson & Birkinshaw, 2004; Lubatkin et al., 2006; Smith & Tushman, 2005).

We explored a key theoretical puzzle regarding the leadership mechanisms that enable ambidexterity in organizations by integrating research on TMT processes and leadership behavioral complexity, and presenting a model that links top management teams' processes and behavioral complexity capacities, contextual ambidexterity and organizational ambidexterity. In this section, we discuss future research directions and opportunities for leadership, TMT and organizational ambidexterity literature.

Our article extends notions of behavioral complexity in leadership (Denison et al., 1995; Hooijberg & Quinn, 1992; Zaccaro, 2001) to present new insights into the literature on ambidextrous organization. To summarize, we have made the case that TMT behavioral integration (Hambrick, 1994) gives rise to behavioral complexity in a team. This TMT behavioral complexity in turn enables strategic decisions balancing exploration and exploitation. This is because a TMT that possesses the capacity to engage in a wide repertoire of behaviors (Hooijberg & Quinn, 1992), and display contrary or opposing behaviors (Denison et al., 1995) (i.e., behavioral complexity), provides key mechanisms that enable organizational ambidexterity. Drawing on context and contextual leadership research, we also suggested that leading an organization to balance strategic contradictions successfully depends on the extent to which an organizational context articulates the capability to employ a wide variety of roles and occasionally contradictions. This contextual ambidexterity plays an important moderating role in the relationship between TMT behavioral complexity and organizational ambidexterity. This raises several unresolved research questions that merit further investigation.

First, the construct of ambidexterity requires further consideration. An ambidextrous organization entails a balance between exploitation and exploration, which is aimed at preventing organizational obsolescence (as a result of engaging exclusively in exploitation) and diminishing returns on its knowledge (as a result of engaging exclusively in exploitation). However, what is meant by attaining and maintaining a *proper balance* between exploration and exploitation (March, 1991)? Obviously, further theoretical refinements are clearly needed. One fruitful path may be to consider how other fields in organization studies have viewed this concept. Especially, we need to reconsider whether one expects organizations to equally engage in both exploration and exploitation. Are there situations in which the exploration orientation needs relatively more attention than the exploitation orientation and vice versa? As Lei & Slocum (2005) noted, a different set of strategic choices is needed to match different types of industry environment conditions. Correlatively, how much variation can be attributed to different types of industries (e.g., stable vs. unstable; certain vs. uncertain; creative vs. traditional)? Finally, we still need to understand how different stages in the organizational life cycle affect an organization's capacity to manage opposing demands and needs. We believe that TMT behavioral integration and behavioral complexity enable better allocation of attention and resources in such a way that gives an appropriate response to various conditions and sustains continuous adaptation. These are only a few of the relevant research questions that should receive further research attention.

Secondly, up to now, research on behavioral complexity in leadership has tended to concentrate on the individual manager, often the CEO. However, strategy researchers and organization theorists have documented the importance of the organization's TMT in making strategic decisions to generate a competitively advantageous position (O'Reilly et al., 1993; Lubatkin et al., 2006; Smith & Tushman, 2005). This is also evident in recent leadership research, which emphasizes the role of shared leadership in organizations (Pearce & Conger, 2003). An emergent theoretical call has been made to better understand the TMT processes and dynamics that convert TMT characteristics into organizational processes and outcomes (Hambrick, 1994; Lawrence, 1997). The current article contributes to this growing body of literature by utilizing the meta-construct of behavioral integration (Hambrick, 1994), thus clarifying to some extent how TMT behavioral integration cultivates behavioral complexity (Hooijberg & Quinn, 1992), which, in turn, results in organizational ambidexterity. This line of thinking and research provides rich and fruitful research opportunities. Notably, building behavioral complexity in leadership is a challenging and costly task. Can we expect young or small organizations to foster behavioral complexity leadership? What is the optimal organizational structure that enables the establishment of TMT behavioral complexity? How can we help organizations avoid the misperceptions of this notion, often leading them to fall into situations of having 'too much of a good thing'? In addition, the theoretical proposition that links TMT behavioral integration and TMT behavioral complexity also requires further exploration. For instance, while Hambrick (1994) made the case that the concept of behavioral integration is a meta-construct that better reflects the positive and enabling dynamics within a TMT, it may benefit from further refinements. Although the collaborative component of behavioral integration captures the social dynamics element, research could draw upon various relational constructs to better capture TMT processes such as

relational coordination (Gittell, 2001), high-quality interpersonal connections (Dutton, 2003; Dutton & Heaphy, 2003), and teamwork quality (Hoegl & Gemuenden, 2001). Furthermore, we still know relatively little about the relationships between team structure, composition, and incentives and TMT behavioral complexity.

Another relatively new avenue of research relates to the need to consider specific leadership behaviors (i.e., behaviors focusing on specific outcomes, e.g., safety and service [Schneider et al., 2005]). Leadership research has documented the leadership–organizational context linkage (e.g., Deal & Kennedy, 1982; Lewin et al., 1939; McGregor, 1960; Schneider et al., 2005; Tsui et al., 2006). However, leadership researchers have tended to concentrate on generic leadership behaviors (i.e., behavior that occurs across situations and outcomes, e.g., transformational and transactional) as a source for explaining behaviors in organizations, ignoring the fact that specific leadership behaviors are often imperative for shaping the corresponding context. Following this line of research, we suggest that in order to cultivate organizational ambidexterity TMTs should display ambidextrous leadership behaviors. What exactly constitutes these specific leadership behaviors and how they emerge are key research questions that merit considerable research investigation.

5.2. Methodological implications

Our model applies a multi-level approach where behavioral integration and behavioral complexity are analyzed at the group level whereas contextual ambidexterity and organizational ambidexterity are approached at the organization level. This raises issues of testing the theory. For example, with group level independent variables, an organizational level dependent variable cannot be used in HLM analyses. Methodologically, this is an extremely intricate question given the independent variables are at the group level. Clearly, the issue would have been different if the variables had been at the individual level since when all the variables of interest are at the individual level (nothing at the group level) and there are nested data, the use of Hierarchical Linear and Nonlinear Modeling (HLM) will still account for dependency in the level 1 (individual-level data), thereby providing more correct estimates of the standard errors of the level 1 effects. In this case, one solution would be to use traditional hierarchical regression and run moderated regression analyses if the data are collected at the same higher level. Another option, which depends on the sample size, is to run Structural Equation Modeling (SEM) (as in the study of Lubatkin et al., 2006) and then revoke the multi-group analysis, where one compares the effect of TMT behavioral complexity on organizational ambidexterity for high context ambidexterity vs. low contextual ambidexterity. Another possible avenue of exploration is to consider moderation mediation analysis. In this case one can argue that TMT behavioral integration affects TMT behavioral complexity, which interacts with contextual ambidexterity to affect organizational ambidexterity.

In addition, a major methodological challenge is to trace balanced strategic contradictions over time. Although studies documenting and evaluating ambidexterity in a cross-sectional manner provides important insights, they do not provide an assessment of changes in ambidexterity and the conditions in which ambidextrous orientation arises and declines. This becomes even more problematic when researchers attempt to link TMT capacities to organizational ambidexterity, because of the difficulty of collecting data from TMT members about dynamics, processes, decision, among others, especially over time. One way of overcoming this difficulty is to design a task force of researchers who design and collect such data over time. Another option is to pursue a longitudinal case study analysis in which the dynamics over time can be traced and evaluated. This clearly raises issues of generalization. We believe that a combination of quantitative data (collected by a task force of researchers in the field) and qualitative data on a few investigated cases might prove fruitful.

5.3. Managerial implications

Although it is beneficial to form a behaviorally integrated TMT and behavioral complexity in a TMT as well as a context for ambidexterity to enable ambidextrous organization, managers should realize that this process is very complicated. Because organizational history often shapes the way an organization conducts its business and responds to changing conditions, one way to mitigate this complex process is to build solid foundations. This points not only to the way a TMT is designed and shaped to have high levels of behavioral integration and complexity, but also to the organizational context that enables ambidextrous orientation. The CEO and his/her team members have a critical role in this complex process. First, they need to make a deliberate decision as to how much they intend to invest and are willing to sacrifice in the design of a system that is capable of managing strategic contradictions effectively. Second, they need to signal to both internal and external stakeholders by explicit decisions and actions how and which forms of ambidexterity will be achieved. One way to engineer this complex process more smoothly is by demonstrating small successes to the entire system constituencies. This will engender more confidence that although the journey to ambidextrous organization is difficult and complex, it will reap fruit.

Executive teams should also realize what balancing strategic contradictions such as exploration and exploitation actually entails. In different situations and conditions different angles of attack might be required. For example, in times of decline organizations often pursue an exploitation orientation by various strategies such as restructuring and downsizing to improve efficiency. However this might not be a good strategy in the long term. When to alter the agenda and direct more attention and resources to explorative orientation is often firm-specific. Thus, a TMT becomes a critical mechanism because of its discretionary knowledge about the firm and its situation. Investing in enhancing the capacities of a TMT by careful design and adaptation might be a way to manage the timing of attention and resource allocation such that a true balance can be achieved.

Because context plays a critical role in enabling ambidexterity, CEOs and other TMT members also need to be engaged in the process of contextualization. They need to be aware of how contextual conditions can be managed effectively. Although there is a

debate whether leaders are capable of changing an organizational context or be influenced by it, we believe that one of the primary roles of a CEO and his/her executive team members is to design an enabling context. This is consistent with other scholars' (e.g., Koene et al., 2002; Lewin et al., 1939; McGregor, 1960; Schein, 1992) view that top organizational leaders are the main shapers and builders of organizational context. What leaders expect and the way they behave and act provide a context of what is expected and how things should be carried out (Tyler & Lind, 1992). Through expectations and behaviors a TMT signal cues and sets up norms of what behavior is deemed normal and acceptable (Dutton, 2003). One way of shaping a desirable context is by setting a salient example about how to behave (Edmondson, 2004), because followers heed their leaders' behaviors and adjust their perceptions and behaviors accordingly (Gardner & Avolio, 1998; Tyler & Lind, 1992). However, other stakeholders such as owners, customers, and suppliers, who have a special interest in the organization, tend to align themselves with the organization's TMT and may adjust their beliefs and behaviors, thus providing a mechanism for an organization to obtain ambidexterity.

6. Conclusion

The integrative perspective presented here is an embryonic attempt to understand how TMT processes (i.e., behavioral integration) and capacities (i.e., behavioral complexity) can be key enablers of an ambidextrous organization, depending on the extent to which a context for organizational ambidexterity has been developed. In doing so, we provide one of the first attempts to respond to an urgent theoretical call to better understand the important TMT mechanisms that address the challenge of developing complex behavioral responses that foster both exploration and exploitation. We are not suggesting that these are the only drivers that give rise to organizational ambidexterity. However, we do suggest that TMT processes and capacities play a major role in the organizational capacity to effectively manage opposing demands such as exploration and exploitation. This largely depends on the context that has been developed and shaped in the organization.

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