SHARED LEADERSHIP IN TEAMS: AN INVESTIGATION OF ANTECEDENT CONDITIONS AND PERFORMANCE

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Shared leadership refers to a team property whereby leadership is distributed among team members rather than focused on a single designated leader. We examined antecedent conditions that lead to the development of shared leadership and the influence of shared leadership on team performance in a sample of 59 consulting teams. Both the internal team environment, consisting of shared purpose, social support, and voice, and external coaching were important predictors of shared leadership emergence. In turn, shared leadership was found to predict team performance as rated by clients. We conclude by discussing the implications of these findings for team leadership and effectiveness.

Leadership is considered crucial for enabling team effectiveness (Cohen & Bailey, 1997; Hackman & Walton, 1986; Kozlowski, Gully, Salas, & Cannon-Bowers, 1996), and some researchers have even argued that it is the most critical ingredient (Sinclair, 1992; Zaccaro, Rittman, & Marks, 2001). Yet most existing research on team leadership has focused narrowly on the influence of an individual team leader (usually a manager external to a team), thus largely neglecting leadership provided by team members (Kozlowski & Bell, 2003; Stewart & Manz, 1995). Several trends in team design, use, and structure, however, point to the importance of internal team leadership. First, the complexity and ambiguity that teams often experience make it unlikely that a single external leader can successfully perform all necessary leadership functions (Day, Gronn, & Salas, 2004). Second, current forms of teamwork that emphasize knowledge-based work rely on employees who have high levels of expertise and seek autonomy in how they apply their knowledge and skills (DeNisi, Hitt, & Jackson, 2003) and therefore desire greater opportunity to shape and participate in the leadership functions for their teams. Further, flatter organizational struc-

tures and the pervasive presence of self-managing teams, which are now well established and deeply rooted in U.S. industry (Lawler, Mohrman, & Benson, 2001; Manz & Sims, 1987), emphasize the need for leadership originating from within a team as opposed to that originating from a single individual elevated by hierarchy. Despite this transition in leadership responsibilities from formal managers to team members, relatively little research has addressed the implications of this evolutionary shift to internally distributed forms of team leadership.

Early leadership scholars argued for the importance of leadership being shared among team members (Gibb, 1954; Katz & Kahn, 1978). Gibb, the first to so argue, stated, "Leadership is probably best conceived as a group quality, as a set of functions which must be carried out by the group. This concept of 'distributed leadership' is an important one" (1954: 884). Katz and Kahn (1978) also suggested that when team members voluntarily and spontaneously offer their influence to others in support of shared goals, shared leadership can provide organizations with competitive advantage through increases in commitment, in the personal and organizational resources brought to bear on complex tasks, in openness to reciprocal influence from others, and in the sharing of information. Consequently, they argued, "Those organizations in which influential acts are widely shared are most effective" (Katz & Kahn, 1978: 332). These early

perspectives challenged the convention that leadership is solely an individual phenomenon, but there has been little empirical work on shared forms of leadership until recently.

We define *shared leadership* as an emergent team property that results from the distribution of leadership influence across multiple team members. It represents a condition of mutual influence embedded in the interactions among team members that can significantly improve team and organizational performance (Day et al., 2004). Shared leadership contrasts with the conventional paradigm (referred to as "vertical leadership" by Pearce and Sims [2002]), which emphasizes the role of the manager who is positioned hierarchically above and external to a team, has formal authority over the team, and is responsible for the team's processes and outcomes (e.g., Druskat & Wheeler, 2003; Hackman & Walton, 1986; Kozlowski et al., 1996). Recent empirical work has demonstrated links between shared leadership and team performance (e.g., Avolio, Jung, & Sivasubramaniam, 1996; Ensley, Hmieleski, & Pearce, 2006; Pearce & Sims, 2002; Sivasubramaniam, Murry, Avolio, & Jung, 2002). Although these studies have helped advance the concept of shared leadership, several remaining research gaps motivated this study.

The first purpose of our study was to begin to theoretically identify and test conditions that support shared leadership in work teams. To our knowledge, no studies have directly explored the conditions that give rise to shared leadership. Reflecting a perspective on leadership in teams as a dynamic process involving interactions between team members and external team leaders (cf. Kozlowski et al., 1996; Zaccaro & Klimoski, 2002), we consider conditions both internal and external to a team. Two proximal factors that are likely to influence the development of shared leadership are internal team environment, including a shared purpose, social support, and voice, and level of external coaching support. Considering these antecedent conditions for shared leadership also adds to the scant literature on interactions between external and internal team leadership, which is important since both forms of leadership operate concurrently and in conjunction with one another (e.g., Manz & Sims, 1987).

A second purpose was to provide an improved conceptualization and operationalization of the shared leadership construct that reflects its theoretical complexity. Scholars have called for more attention to theoretical models of team leadership that are developed at the team level rather than as mere extrapolations of existing dyadic leadership approaches (Kozlowski & Bell, 2003). Prior work on shared leadership has relied primarily on aggregating team members' assessments of the degree to which leadership responsibilities are shared or certain behaviors are exhibited within a team, a procedure that may fail to capture the relational nature of the patterns of shared influence in teams. Table 1, below, provides details on this previous work. Utilizing social network theory (e.g., Brass, 1995; Mehra, Smith, Dixon, & Robertson, 2006), we advanced a more complete conceptualization of the emergent and relational nature of shared leadership and took a social network measurement approach in order to better capture these overall patterns of influence.

A third purpose of this study was to predict performance outcomes. Existing research on shared leadership has almost exclusively relied on team members' and/or external leaders' ratings of performance, a practice that raises concerns about both common method variance and the ability to obtain an independent assessment of a team's performance. (Again, Table 1, below, provides details.) We studied the performance outcomes of shared leadership using a source independent of teams and their immediate leadership structures: specifically, the end users of the teams' work products.

LITERATURE REVIEW AND HYPOTHESES

Shared Leadership Defined

Gibb (1954) first suggested the idea of two forms of team leadership: distributed and focused. Focused leadership occurs when leadership resides within a single individual, whereas distributed leadership occurs when two or more individuals share the roles, responsibilities, and functions of leadership. Gronn (2002) argued that these two concepts of focused and distributed leadership be considered endpoints on a continuum rather than rigid either-or categories.

To further develop the concept of how leadership is shared among team members, we utilize Yukl's definition of leadership as "influence processes involving determination of the group's or organization's objectives, motivating task behavior in pursuit of these objectives, and influencing group maintenance and culture" (1989: 5). Building on the concept of leadership as influence and drawing on multilevel theory (Kozlowski & Klein, 2000; Morgeson & Hofmann, 1999), we define shared leadership as an emergent team property that results from the distribution of leadership influence across multiple team members. In keeping with the notion of collective constructs (Morgeson & Hofmann, 1999), we argue that shared leadership orig-

TABLE 1
Previous Definitions and Measures of Shared Leadership

Study	Definition	Measure	Dependent Variable
Avolio, Jung, Murry, and Sivasubramanium (1996)	No explicit definition given, but shared leadership is essentially viewed as transformational leadership manifested at the group level in highly developed teams.	Team Multifactor Leadership Questionnaire (TMLQ − Form 5X) aggregated to the team level	Self-reported ratings (undergraduate project team effectiveness)
Pearce and Sims (2002)	Distributed influence from within the team (p. 172). Lateral influence among peers (p. 176).	Ratings (aggregated to team level) on behavioral scales for five leadership strategies: aversive, directive, transactional, transformational, and empowering	Self-reported and manager ratings of seven effectiveness dimensions (automobile change management teams)
Sivasubramanium, Murry, Avolio, and Jung (2002)	Collective influence of members in a team on each other (p. 68). How members of a group evaluate the influence of the group as opposed to one individual within or external to the group (p. 68).	Team Multifactor Leadership Questionnaire (TMLQ − Form 5X) aggregated to the team level	Team potency (self-ratings at times 1 and 2) and team grades assigned by instructor (undergraduate project team effectiveness).
Pearce and Conger (2003)	A dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both. . . . [L]eadership is broadly distributed among a set of individuals instead of centralized in [the] hands of a single individual who acts in the role of a superior (p. 1).	Not applicable	Not applicable
Pearce, Yoo, and Alavi (2004)	Simultaneous, ongoing, mutual influence process within a team that is characterized by "serial emergence" of official as well as unofficial leaders (p. 48).	Ratings (aggregated to team level) on behavioral scales for four leadership strategies: directive, transactional, transformational, and empowering	Self-ratings of problem-solving quality and effectiveness (virtual teams of student social workers)
Ensley, Hmieleski, and Pearce (2006)	Team process where leadership is carried out by the team as a whole, rather than solely by a single designated individual (p. 220).	Ratings (aggregated to team level) on behavioral scales for four leadership strategies: directive, transactional, transformational, and empowering	Growth index for new ventures, consisting of the average of firm revenue growth and employee growth rates (new venture TMTs)
Mehra, Smith, Dixon, and Robertson (2006)	Shared, distributed phenomenon in which there can be several (formally appointed and/or emergent) leaders (p. 233).	Qualitative coding based on visual analysis of leadership network diagrams	Team sales divided by team size (financial services sales teams)

inates with individual members of a team engaging in activities that influence the team and other team members in areas related to direction, motivation, and support (Yukl, 1989) and through the series of interactions that team members have with each other involving the negotiation and sharing of leadership responsibilities. The resulting collective structure can be considered to be a leadership network that influences and shapes both team and individual activities and outcomes.

Leadership can be conceptualized in relation to either the strength of influence (i.e., its quality or effectiveness) or the source of influence (i.e., single versus multiple team members). Our definition is

focused on multiple *sources* of influence and refers to widespread influence within teams rather than to specific leadership behaviors, formal positions, specific types of influence, or the effectiveness of the leadership exhibited by these sources. Building on these ideas of distributed influence and drawing upon Gibbs's (1954) original conceptualization, we believe shared leadership can be conceptualized along a continuum based on the number of leadership sources (i.e., team members) having a high degree of influence in a team. Anchoring the low end of the continuum are cases in which team members follow the leadership of a single individual. Although the leadership exhibited by this single individual might be quite strong, leadership here originates from only a single source. In contrast, at the high end of the shared leadership continuum are teams in which most, if not all, team members provide leadership influence to one another. Here, the source of leadership influence is distributed among team members rather than concentrated or focused in a single individual. In these teams, team members both lead and follow one another in such a way that at a given time, members are both providing leadership for certain aspects of team functioning and also responding to the leadership provided by other team members in different areas. Teams with high levels of shared leadership may also shift and/or rotate leadership over time, in such a way that different members provide leadership at different points in the team's life cycle and development.

Shared leadership is a relational[1] phenomenon involving mutual influence between team members as they work toward team objectives, and social network theory provides a natural theoretical and analytical approach to studying the relational influence structure in teams (Mehra et al., 2006). The exercise of leadership influence (Yukl, 1989) occurs in the context of team member relationships and presumes the existence of followers or "influencees" (Bedeian & Hunt, 2006). Shared leadership creates patterns of reciprocal influence that further develop and reinforce existing relationships among team members. Thus, social network theory is appropriate as it examines patterns of relationships among

individuals such as advice, information, and friendship networks and emphasizes the relationship as the unit of analysis (Brass, 1995; Sparrowe, Liden, Wayne, & Kraimer, 2001). Further, social network analysis allows for the study of multiple sources of leadership influence and the ability to model patterns of influence within a team and preserve rich data about the actual distribution of influence (Mehra et al., 2006).

In keeping with social network theory, we argue that the pattern of emerging mutual influence in teams can be conceptualized as an increase in the density of the teams' internal leadership networks. A leadership network is the pattern of individuals who rely on others for leadership within a team, and density increases as this reliance on one another for leadership grows. Density, as used conceptually in social network research, is a structural property representing the pattern of relationships within a team, and it describes the overall level of different types of exchanges among members of a given social network (Sparrowe et al., 2001). Sparrowe and his colleagues described this team-level construct as follows: "Density is analogous to the mean number of ties per group member. The more ties each group member enjoys with the other group members, the greater the density of the network" (2001: 317). Here, ties between team members (also referred to as "relationships") exist when one team member perceives another as exerting leadership influence in the team. Thus, the density of a leadership network is the mean number of relationships (per team member) involving leadership influence. When more team members provide leadership to their peers, the density of this type of network increases. Operationally, network density is a measure of the proportion of total possible relationships (actual ties over potential ties) that exists in a given network (Wasserman & Faust, 1994) and thus captures variance in the overall patterns of relationships rather than variance in shared perceptions of a construct (as is the case with aggregated behavioral scales). Accordingly, utilizing network density as a measure of shared leadership appropriately reflects the extent to which leadership influence is distributed among a relatively high or relatively low proportion of team members.

Relationship with Similar Constructs

Having defined and described the nature of shared leadership, it is also helpful to describe briefly its relationship to other similar constructs, such as team autonomy or self-management, team empowerment, cooperation, team cognition (e.g.,

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[1] When we use the terms "relational" and "relationships" here, we are simply referring to the interactions between two or more people. These terms are not meant to imply that shared leadership presumes the existence of or is the result of close personal friendships among team members. We thank an anonymous reviewer for highlighting the need to make this distinction.

transactive memory systems and team mental models), and emergent leadership. Self-managing and autonomous team designs are those in which team members have greater responsibility for setting their own goals, monitoring their own progress, and making their own decisions than do team members in manager-led teams (Hackman, 1987). Although self-managing team designs may promote the development of shared leadership through increased self-management (Manz & Sims, 1987), or through heightened trust or autonomy (Langfred, 2004), such designs in themselves do not necessarily result in leadership influence being widely distributed in a team, as other factors, such as the internal team environment and external coaching, may also influence shared leadership (Wageman, 2001).

Team empowerment is a motivational construct and has been defined as the collective experience of heightened levels of task motivation as a result of team members' assessments of their team's tasks as providing them with high levels of meaningfulness, autonomy, impact, and potency (Kirkman & Rosen, 1997). From a temporally dynamic perspective, team empowerment can be viewed as an emergent state that either precedes or follows team processes, depending on the stage of a team's development and performance cycle (cf. Marks, Mathieu, & Zaccaro, 2001). From this perspective, team empowerment may facilitate the development of shared leadership by motivating team members to exercise influence. Conversely, shared leadership may also lead to greater team empowerment by heightening members' sense of meaningfulness, autonomy, impact, or potency, depending on the stage of a team's development. However, a team may experience a high level of empowerment yet still have a strong external leader providing most of the leadership influence, with very little shared leadership exhibited by team members.

Shared leadership is related to but distinct from other team processes such as cooperation or helping, which refer to team members working with and/or assisting other team members with their tasks (Kozlowski & Bell, 2003). Although these types of behavior relate to being an effective team member and promote efficiency, they do not involve the active influence that is essential to leadership. In keeping with this conceptualization, a recent study showed only a moderate correlation between shared leadership and cooperation or helping (Ziegert, 2005).

Shared leadership is also distinct from team cognition constructs, such as transactive memory systems (TMSs), or structures through which members can collectively encode, store, and retrieve information and expertise (Wegner, 1986), and team mental models (TMMs), or shared understandings about the attributes of a team or its task at hand (Cannon-Bowers, Salas, & Converse, 1993). Conceptually, the primary distinction between shared leadership and these team knowledge structures is that the former concerns collective influence, whereas the latter concerns collective cognition. This conceptual difference may perhaps best be seen in the distinction between measurement approaches. Shared leadership assesses the distribution of leadership among team members. TMS measures capture team-level systems for utilizing and integrating individually and collectively held expertise (Lewis, 2003). TMM measures assess the similarity and accuracy of individual mental models within a team (Marks, Zaccaro, & Mathieu, 2000). Although these are three distinct concepts, TMMs and TMSs are likely both facilitated by shared leadership, through the continual influence-based interactions and social exchanges (Klimoski & Mohammed, 1994) that occur as team members share leadership responsibilities. Reciprocally, through effective coordination of expertise and the development of mutual understandings, TMSs and TMMs likely enable the emergence of shared leadership.

Finally, emergent leadership refers to group members exerting significant influence over other members of their group although no formal authority has been vested in them (Schneier & Goktepe, 1983). Shared leadership is consistent with some of the early group research by Bales (1953), who found that two informal leaders often emerge in leaderless groups: one focused on the group task, and one concentrating on relational issues. This research is similar to that on shared leadership in that it typically concerns whether leadership is provided informally by a group member (known as an "emergent leader") in addition to or instead of being provided by a formally appointed leader (e.g., Wheelan & Johnston, 1996). However, emergent leadership research differs by focusing on the characteristics of individuals and groups that predict informal leadership emergence, as well as narrowly considering only one or two persons as emergent leaders and ignoring the leadership influence of others. In sum, shared leadership is distinct from emergent leadership in that the former can take place in a team with or without a designated leader, can be either formal or informal, and addresses the distribution and sharing of leadership among all team members, in contrast to only one or two leaders.

Antecedent Conditions: Internal and External

Researchers studying shared leadership have argued that for shared leadership to emerge, two sets of activities must occur (Katz & Kahn, 1978). First, the members of a team must offer leadership and seek to influence the direction, motivation, and support of the group. Second, the team as a whole must be willing to rely on leadership by multiple team members. For these individual and collective behaviors to occur, team members must believe that offering influence to and accepting it from fellow team members are welcome and constructive actions. We considered key factors—both internal and external—that are likely to impact the development of shared leadership in teams through these mechanisms. The first condition is an internal team environment that supports the development of shared leadership over time, and the second is the level of supportive coaching provided by an external leader.

We propose first that shared leadership is facilitated by an overall team environment that consists of three dimensions: shared purpose, social support, and voice. These dimensions, drawn from a review of research on shared leadership (e.g., Avolio et al., 1996; Barry, 1991; Pearce & Conger, 2003; Seers, 1996; Yukl, 1989), represent distinct concepts that are also highly interrelated and mutually reinforcing, thereby representing a higher-order construct (cf. Edwards, 2001; Law, Wong, & Mobley, 1998). We refer to them here, collectively, as an *internal team environment* enabling shared leadership because they work together to produce the kind of team context that encourages team members' willingness to both offer leadership influence and rely on the leadership of other team members (Katz & Kahn, 1978).

Shared purpose, the first dimension of an internal team environment enabling shared leadership, exists when team members have similar understandings of their team's primary objectives and take steps to ensure a focus on collective goals. Prior work has theorized and demonstrated that team members who have a common sense of purpose and agreed-upon goals are more likely to feel motivated, empowered, and committed to their team and work (Kirkman & Rosen, 1999; Liden, Wayne, & Sparrowe, 2000; O'Leary-Kelly, Martocchio, & Frink, 1994). These heightened levels of motivation, empowerment, and commitment that individuals experience when their team possesses a shared purpose increase the willingness of team members to share the team's leadership responsibilities (Avolio et al., 1996). In addition, with a commonly understood set of objectives and direction, team members are more likely to establish goals and take actions that support the activities of other team members, thereby facilitating both goal-oriented and work-directive leadership behaviors by team members (Seers, 1996), as well as a collective direction to team activities (Yukl, 1989).

The second dimension of an internal team environment that supports shared leadership is social support, which is defined as team members' efforts to provide emotional and psychological strength to one another. Team members support one another through encouraging and recognizing individual and team contributions and accomplishments (Marks et al., 2001). This helps to create an environment where team members feel that their input is valued and appreciated. By actively participating in a team and feeling supported, team members are more likely to work cooperatively and develop a sense of shared responsibility for team outcomes (Kirkman & Rosen, 1999). Social support is associated with group maintenance and culture (Yukl, 1989), leader support/supportive behaviors (Seers, 1996), relational leadership (Barnard, 1938), and developing and maintaining a team by providing "interpersonal glue" that helps build a strong internal social network (Barry, 1991).

The third dimension of this internal team environment is voice. No standard definition of voice exists, as it has been used in a variety of research areas to describe constructive change-oriented communication, participation in decision making, involvement, certain extra-role work behaviors, due process, and employee grievance procedures (Van Dyne & LePine, 1998); however, at its core, voice connotes participation and input. We define it here as the degree to which a team's members have input into how the team carries out its purpose. Voice is associated with "interaction facilitation/participative" behaviors in teams (Seers, 1996), and these types of behaviors can result in higher levels of social influence among team members through increased engagement and involvement. In addition, voice has been associated with participation in decision making and constructive discussion and debate around alternative approaches to team goals, tasks, and procedures (De Dreu & West, 2001; Simons, Pelled, & Smith, 1999), which can improve the amount of collective influence, involvement, and commitment relative to important team decisions. Thus, the presence of high levels of voice in a team should create an environment where people engage in mutual leadership by being committed to and becoming proactively involved in helping the team achieve its goals and objectives and constructively challenging each other in pursuit of group goals.

These three dimensions are mutually reinforcing and complementary. When team members are able to speak up and get involved (voice), the likelihood that many of them will exercise leadership increases greatly. The opportunity for voice also facilitates shared leadership by strengthening both a common sense of direction and the potential for positive interpersonal support in a team. When teams are focused on collective goals (shared purpose), there is a greater sense of meaning and increased motivation for team members to both speak up and invest themselves in providing leadership to the team and to respond to the leadership of others. The motivation to participate and provide input toward achieving common goals and a common purpose can also be reinforced by an encouraging and supportive climate. When team members feel recognized and supported within their team (social support) they are more willing to share responsibility, cooperate, and commit to the team's collective goals. Thus, these three dimensions work together to create an internal team environment that is characterized by a shared understanding about purpose and goals, a sense of recognition and importance, and high levels of involvement, challenge, and cooperation. Therefore, we predict:

Hypothesis 1. An internal team environment consisting of shared purpose, social support, and voice is positively related to the level of shared leadership in a team.

External Team Coaching

Scholars studying shared leadership and leadership in self-managing teams have noted the critical role of external team leaders in the development of team members' motivation and capabilities to lead themselves and become self-directed (Kozlowski et al., 1996; Manz & Sims, 1987). When discussing this role, researchers have frequently stressed the importance of *coaching* behaviors, which Hackman and Wageman defined as external team leaders' "direct interaction with a team intended to help team members make coordinated and task-appropriate use of their collective resources in accomplishing the team's task" (2005: 269). Researchers have identified different types of team coaching, distinguishing between forms that are more supportive and reinforcing of a team's self-leadership and those that focus on identifying team problems and engaging in active task interventions that interfere with the team's autonomy and self-management (Morgeson, 2005; Wageman, 2001). Here, we specifically refer to the former, which has been called "supportive coaching" (Morgeson, 2005) be-

cause it is more closely connected with the development of team self-management, initiative, and autonomy, whereas active coaching is more likely to undermine these team characteristics and possibly inhibit the development of shared leadership. Supportive coaching can also be distinguished from other external team leadership functions, such as designing a team and its task (Wageman, 2001) and facilitating boundary management (Druskat & Wheeler, 2003).

Through supportive coaching, external team managers can contribute to the development of shared leadership in a variety of ways. First, by engaging in behaviors such as encouraging, reinforcing, and rewarding instances in which team members demonstrate leadership, supportive coaching fosters a sense of self-competence and team independence among team members (Manz & Sims, 1987). When team members believe that they have significant autonomy and are confident in their skills for managing the work of their team, they should be more likely to demonstrate leadership. Supporting this assertion, Wageman (2001) found a positive association between supportive coaching by a team manager and self-management by team members. Second, by providing a team with encouragement and support, external coaching can help build a shared commitment to the team and its objectives that can reduce free riding and increase the likelihood that team members will demonstrate personal initiative (Hackman & Wageman, 2005). Third, by giving teams suggestions about appropriate task strategies that ensure that their activities are well aligned with work requirements and demands (Hackman & Wageman, 2005), supportive coaching provides team members greater clarity on how to best manage their work and processes. Thus, team members are more likely to influence each other because they share this understanding (Kozlowski et al., 1996). Therefore, we predict:

Hypothesis 2. External team coaching is positively related to the level of shared leadership in a team.

The second, more indirect, way in which external coaching may influence shared leadership is based on a functional approach to team leadership. According to this approach, the role of an external team leader is to do whatever is not being adequately managed by the team itself (Hackman & Walton, 1986). When teams have a supportive internal environment, team coaching by an external team leader is likely to be largely redundant with this internal environment and therefore less critical to the emergence of shared leadership among team

members. However, for teams that lack a strong shared purpose and do not promote full engagement and participation, and in which team members are unable to provide each other with social support, a functional leadership perspective suggests that external leaders' coaching may be particularly important. Specifically, effective team coaching by an external leader—focused on building collective commitment to a team and its work, assisting the team with aligning activities with task requirements, and fostering independence—can help provide the motivational and consultative functions (Hackman & Wageman, 2005) that enable shared leadership but have not been adequately developed by the team internally. External team leaders can also help team members understand the different skills and capabilities of team members and how they can be integrated to address the demands of the team task. This understanding can motivate individual team members to initiate and engage in internal leadership activities and do so in a coordinated fashion resulting in an emergent pattern of shared leadership. In this fashion, an external team leader's supportive coaching can enable shared leadership to emerge when a team has yet to develop a high level of social support, shared purpose, and voice. These relationships between an internal team environment and an external leader's team coaching suggest:

Hypothesis 3. Team coaching by an external leader interacts with the internal team environment in predicting shared leadership: coaching is more strongly related to shared leadership when the internal team environment is unsupportive.

Shared Leadership and Team Performance

Shared leadership is an important intangible resource available to teams, and therefore it should enhance team performance on complex tasks (Day et al., 2004). When team members offer their leadership to others and to the mission or purpose of their team, they should experience higher commitment, bring greater personal and organizational resources to bear on complex tasks, and share more information (Katz & Kahn, 1978). When they are also open to influence from fellow team members, the team can function with respect and trust and develop shared leadership that in turn becomes an additional resource for improving team process and performance (Day et al., 2004; Marks et al., 2001). This intangible resource, which is derived from the network relationships within the team, results in greater effort, coordination, and efficiency (Nahapiet & Ghoshal, 1998).

Only a handful of empirical studies have been conducted with shared leadership as an explicit source of leadership, but the results are promising (see Table 1). Avolio and colleagues (1996) explored shared leadership among teams of undergraduate students and found a positive correlation with self-reported effectiveness. Pearce and Sims (2002) studied the relationship between shared leadership and change management team effectiveness at a large automotive manufacturing firm and found shared leadership to be a more useful predictor than the vertical leadership of appointed team leaders. Sivasubramaniam and colleagues (2002) found that team leadership, defined in a manner similar to previous definitions of shared leadership as the collective influence of team members on each other, was positively related to both team performance and potency over time in a sample of undergraduate business students. Pearce, Yoo, and Alavi (2004) studied shared leadership in virtual teams engaged in social work projects and again found that shared leadership was a stronger predictor of team performance than vertical leadership. Ensley, Hmielski, and Pearce (2006) also found shared leadership to be a stronger predictor than vertical leadership of new venture performance in a sample of top management teams.

Finally, there is also indirect support for shared leadership predicting team performance. Taggar, Hackett, and Saha (1999) examined emergent leadership within teams and found that team performance was greatest when other team members, in addition to the emergent leader, demonstrated high levels of leadership influence. Failure of even a single member to exhibit leadership behavior was found to be detrimental to team performance. Although shared leadership was not formally defined or measured, these findings seem to support the notion that shared leadership may result in greater effectiveness than the emergence of a single internal team leader. Taken as a whole, these studies suggest that shared leadership is an important predictor of team performance and provides a resource for teams that goes beyond the leadership of any single individual. Therefore, we predict:

Hypothesis 4. The degree of shared leadership in a team is positively related to team performance.

METHODS

Sample

The study sample included 59 consulting teams comprised of MBA students (*n* = 348) from a large eastern university. Teams ranged in size from–four

to seven members with a mean size of 5.93 individuals. Sixty-seven percent of the sample members were male, and ages ranged from 24 to 42 years (mean age = 29). Participants were 56 percent white, 33 percent Asian, 5 percent black, and 5 percent Hispanic. This sample was well suited to testing our hypotheses because the teams' tasks were highly similar and their life cycles were identical, thus ruling out mitigating factors often present in empirical team research. Teams were engaged in real consulting projects and worked closely with their clients over a five-month period that concluded with a significant deliverable (a client presentation and an accompanying report). Thus, the likelihood that findings would be generalizable to nonstudent populations was strengthened.

The university's MBA Consulting Program office assigned students to their teams, which were multifunctional in terms of members' areas of concentration and expertise. Each team worked on a current problem or business need for an existing firm and had a faculty advisor who served as an external leader and also assigned grades. Each external team leader acted much like a partner in a consulting firm who supervises multiple projects; he or she was available to provide general guidance and support for the team in working with the client throughout the course of the project. Teams did not have formally appointed internal leaders.

Data from teams were collected through surveys administered approximately two-thirds of the way through the projects, and data from clients and faculty advisors were collected through surveys administered after the projects and final deliverables were completed and presented to the clients. We surveyed clients to obtain independent sources of team performance and used the faculty surveys primarily to gather information on the level of project demands faced by the teams. Surveys were received from 348 team members (a 100 percent response rate), from faculty advisors for 51 of the teams (an 86 percent response rate), and from client contacts for 56 of the teams (a 95 percent response rate).

Measures

Team performance. Client contacts who had worked closely with a team and were the end users of the project results were asked to rate the effectiveness of each team in terms of project deliverables, presentation, and helpfulness of recommendations. Seven items began with the stem "How effective was this team in . . ." and included "meeting your expectations in terms of the quality of the
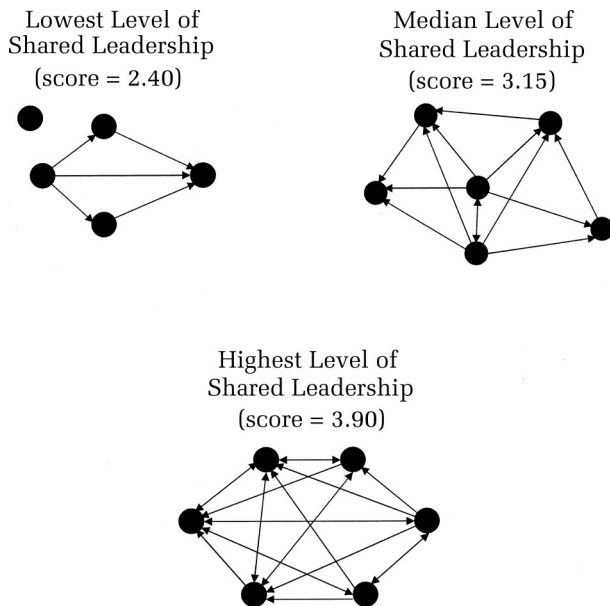
final deliverables," "providing a quality presentation of the final deliverables," and "overall, meeting your needs and goals for this project." Respondents rated these items on a scale ranging from 1, "extremely ineffective," to 7, "extremely effective." Principal components analysis yielded a single factor ($\alpha = .93$).

Shared leadership. We measured shared leadership following a social network approach (Mayo, Meindl, & Pastor, 2003) by using *density*, which is a measure of the total amount of leadership displayed by team members as perceived by others on a team ($\bar{x} = 3.16$, median = 3.15, and range = 2.40–3.90). Every team member rated each of his/her peers (1, "not at all," to 5, "to a very great extent") on the following question: "To what degree does your team rely on this individual for leadership?" To calculate density, we followed the measurement approach for valued relations set forth by Sparrowe and colleagues (2001) by summing all values (here, the team members' ratings of each other's leadership) and then dividing that sum by the total number of possible ties, or relationships, among team members. Thus, following our definition of shared leadership as a team property reflecting the distribution of leadership among multiple team members, teams in which many team members are rating many of their peers as leaders will appropriately yield higher density scores than will teams in which only one member or a few members are perceived as exerting leadership. Agreement across the respondents' ratings of their team members was assessed and demonstrated adequate interrater reliability (median r_{wg} = .65, ICC[1] = .34, and ICC[2] = .78).

To illustrate the density measure visually, we created leadership sociograms for each team (Mayo et al., 2003). Leadership network ratings were first dichotomized: values of 4 (to a great extent) or 5 (to a very great extent) were assigned a value of 1, and values of 3 or less were assigned a 0.[2] Figure 1 presents the sociograms for the lowest-, middle-, and highest-scoring teams on the shared leadership measure. The circles are nodes representing team members. Arrows represent leadership relations: An arrow pointing from one member (A) to another (B) means that member B is perceived as a source of leadership by member A. Two-headed arrows mean

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[2] It is important to note that the dichotomous (0, 1) data set was used *only* for the purpose of creating these graphic depictions of the leadership relations within the team. All substantive analyses in the paper used the fully valued ratings (1–5) for calculation of the density score which was our measure of shared leadership.

FIGURE 1
Leadership Sociograms

Lowest Level of
Shared Leadership
(score = 2.40)

Median Level of
Shared Leadership
(score = 3.15)

Highest Level of
Shared Leadership
(score = 3.90)

that two individuals perceive one another as a source of leadership.

Internal team environment. Members rated their team's internal environment using ten items (1, "strongly disagree," to 5 "strongly agree") consisting of three separate, theoretically derived subscales: *shared purpose, social support,* and *voice.* Voice was measured using four items based on previous work by VanDyne and LePine (1998) and DeDreu and West (2001), and the shared purpose and social support scales were developed to specifically fit the context of our sample. The Appendix lists all items. To test for discriminant validity, we performed a confirmatory factor analysis using EQS (Bentler & Wu, 2005), specifying a higher-order factor with three dimensions (indicated by the ten items) that yielded a good fit to the data (χ^2_{32} = 67.87; AIC = 3.87; CFI = .98; GFI = .96; AGFI = .94; SRMR = .04; RMSEA = .06), thus demonstrating support for the hypothesized structure.[3, 4] To investigate the convergent validity of the structure for internal team environment, we examined the correlations among the three subscales. The zero-order correlations were high, ranging from .72 to .80 ($p < .001$), which provided evidence that the

three subscales represented highly interrelated dimensions. Given the overall support for the hypothesized model, we first aggregated these three subscales to the team level and then averaged the scores to produce a single variable representing internal team environment ($\alpha = .94$). We tested for whether aggregation was appropriate using the within-team agreement statistic (r_{wg}; James, Demaree, & Wolf, 1993) and used intraclass correlation coefficients (ICC[1] and ICC[2]) to assess the extent to which team responses differed among teams and the reliability of the team-level means (Bliese, 2000). The mean r_{wg} of .96 indicated a high level of agreement among members of teams on rating their internal team environment; the ICC(1) of .14 demonstrated that team membership accounted for significant variance; and the ICC(2) of .71 suggested that the team-level means were reliable.

Coaching. Team members were asked to rate the level of supportive coaching (Morgeson, 2005) provided by their external leader (faculty advisor) using a three-item scale. Items included "expresses his/her confidence in the capabilities of our team," "effectively motivates and guides our team toward accomplishing challenging goals for this project," and "is sensitive to the needs of our team and tries to help us however he/she can." These items captured the motivational and consultative functions of external leaders that have been suggested as particularly important for fostering both commitment to a team and independence (Hackman & Wageman, 2005; Morgeson, 2005). Items were rated on a scale ranging from 1 ("strongly disagree") to 5 ("strongly agree") ($\alpha = .92$), and responses were aggregated to the team level and demonstrated strong levels of within-team agreement, between-team differences, and reliable team-level means (mean $r_{wg} = .83$; ICC[1] = .51; ICC[2] = .80).

Control variables. We included controls for the effects of team size, project demands, gender diversity, and race diversity in order to address these possible alternate explanations for shared leadership and team performance. Differences in team size may influence resources and workload requirements that may influence team performance and therefore team size was included as a control variable (Kirkman & Rosen, 1999). Environmental factors can impact team outcomes (e.g., Tesluk & Mathieu, 1999), and more demanding projects may thus have a detrimental impact on shared leadership and team performance. Previous research has also shown significant effects for demographic heterogeneity on team outcomes (Williams & O'Reilly, 1998), and we therefore included it as a control. *Team size* was measured as the actual number of team members on each consulting team. *Project*

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[3] We also examined the fit statistics for a one-factor model, which was not a very good fit to the data. A chi-square difference test also indicated that our theoretical model was a significantly better fit.

[4] "AIC" is the Akaike Information Criterion and is calculated as $\chi^2 - 2df$ (Bentler & Wu, 2005).

TABLE 2
Descriptive Statistics and Correlations[a]

Variable	Mean	s.d.	1	2	3	4	5	6	7
1. Team performance[b]	5.81	1.02	(.93)						
2. Shared leadership	3.16	0.35	.46*						
3. Internal team environment	4.08	0.41	.19	.33*	(.94)				
4. Coaching	3.76	0.64	−.03	.37*	.24	(.92)			
5. Team Size	5.93	0.72	.10	.28*	.42*	−.15			
6. Project demands[b]	4.38	1.19	−.26	.20	−.22	.22	−.04	(.75)	
7. Gender diversity	0.55	0.18	−.20	−.22	−.14	−.15	.00	.05	
8. Race diversity	0.74	0.27	.03	.03	.02	−.24	.02	−.14	−.05

[a] $n = 59$ for most variables ($n = 51$ for variable 6 and 56 for variable 1, because of missing data). Scale reliabilities are in parentheses along the diagonal.

[b] These variables were measured using seven-point Likert scales. All other scales were measured using five-point Likert scales.

* $p < .05$

demands was measured by a seven-item Likert scale that captured faculty advisor ratings of the degree to which the team had to manage difficult project challenges. Sample items include "changing client demands during the course of the project," "difficulties in accessing data or information necessary for completing the work," and "problems or changes in the project timeline that were outside the team's direct control." Items were rated on a scale ranging from 1 ("not at all present") to 7 ("very much present") ($\alpha = .75$). *Gender diversity* and *race diversity* were measured using Teachman's index,[5] which captures how team members are distributed among the possible categories of a variable (Teachman, 1980).

RESULTS

Table 2 gives means, standard deviations, and zero-order correlations. To test Hypotheses 1 through 3, we used moderated regression analysis. In step 1, we entered all of the control variables. In step 2, we entered the two main effect variables, internal team environment and coaching. In step 3, we tested for interactions by entering the product of internal team environment and coaching. Table 3 presents these results. Team size was the only control variable with a significant relationship with shared leadership ($\beta = 0.37$, $p < .01$). In step 2, internal team environment had a direct relationship with shared leadership ($\beta = 0.25$, $p < .05$,

one-tailed), as did external coaching ($\beta = 0.26$, $p < .05$, one-tailed), supporting Hypotheses 1 and 2. In step 3, we found the interaction effect between coaching and internal team environment to be significant ($\beta = -4.06$, $p < .05$) and explaining an additional 5 percent of the variance. Following Aiken and West's (1991) methods for plotting interactions, we graphed these relationships; Figure 2 presents this graph. It shows that internal team environment was significantly and positively related to shared leadership for teams that had low

TABLE 3
Results of Regression Analyses

Variable	Shared Leadership[a]	Team Performance[b]
Step 1		
Team size	0.37*	0.11
Project demands	0.22	−0.25
Gender diversity	−0.24	−0.21
Race diversity	−0.04	−0.02
R^2	0.23*	0.12
Step 2		
Internal team environment	0.25*	0.25
Coaching	0.26*	−0.14
R^2	0.39*	0.16
ΔR^2	0.16*	0.04
Step 3		
Internal team environment × coaching	−4.06*	
Shared leadership		0.65*
R^2	.44*	.42*
ΔR^2	.05*	.26*
Adjusted R^2		.32

[a] Estimates are standardized regression coefficients; $n = 51$.

[b] Estimates are standardized regression coefficients; $n = 49$.

* $p < .05$

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[5] Although the current tendency is to use Blau's index for diversity, the only difference between Blau and Teachman is standardization, and there is no conceptual or empirical reason to favor one over the other. We are grateful to David Harrison for noting this point in a posting to the Academy of Management Research Methods Division "listserv" group (RMNet).

FIGURE 2
The Moderating Effect of Coaching on the Relationship between
Internal Team Environment and Shared Leadership
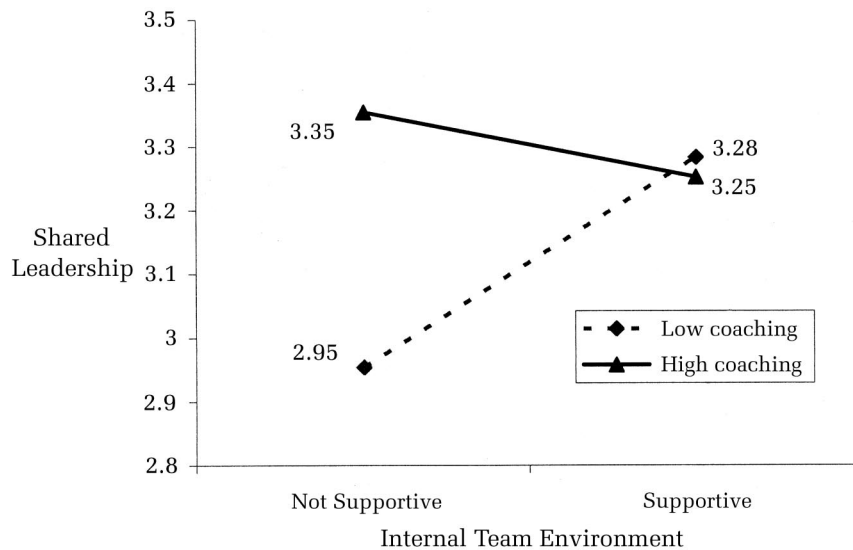
coaching support and was not related to shared leadership for teams that had high coaching support. Teams with an unsupportive internal team environment were still able to develop high levels of shared leadership, so long as they received a high level of coaching. Thus, Hypothesis 3 was also supported.

To test Hypothesis 4, we used hierarchical regression, regressing team performance on shared leadership after controlling for team size, project demands, gender diversity, and race diversity, as well as the main effects of internal team environment and coaching, to determine whether there was significant additional explained variance. The results, presented in Table 3, indicate that shared leadership is a strongly positive predictor of a team's performance as rated by the end users of the team's work ($\beta = 0.65$, $p < .001$) and accounts for significant variance in team performance exceeding that accounted for by the control variables, internal team environment, and coaching ($\Delta R^2 = .26$, $p < .001$). Thus, Hypothesis 4 received strong support.

DISCUSSION

Our study makes three key contributions to the literature on team leadership. First, we examined antecedent conditions for shared leadership and found that a team's internal environment and coaching by an external leader are important precursors for shared leadership. Second, our findings show that coaching provided by an external team leader is particularly important for the develop-

ment of shared leadership when teams lack a strong internal team environment. Third, the findings extend previous research suggesting positive effects of shared leadership on team performance using a network-based measure of shared leadership that better captures the patterns of mutual influence inherent in the construct and a measure of performance that is less subject to common source variance and rating biases.

Theoretical Implications

Despite early suggestions by scholars that shared internal leadership is important (e.g., Gibb, 1954; Katz & Kahn, 1978), team leadership theory has continued to focus primarily on the role of external leaders and to use existing models of dyadic leadership extrapolated to the team level (Kozlowski & Bell, 2003). Our findings suggest that a promising future direction is to move the lens inward to investigate how team members themselves share leadership responsibilities. Indeed, we found that teams relying on multiple members for leadership performed better than those in which internal leadership was relatively scarce. Importantly, this finding is based on performance ratings provided by clients who focused on the quality of a team's final product rather than on its process and functioning. This argument suggests that shared leadership has benefits for work teams beyond just improved team processes. Shared leadership can occur in a team with a designated formal leader or in a team without one. The results of this study do not mean that

vertical leadership needs to be abandoned in favor of shared leadership; rather, these two important sources of team leadership should be studied in combination (Kozlowski & Bell, 2003).

Building on previous work that has advocated the use of social network methodology to understand relationships in teams (Mayo et al., 2003; Sparrowe et al., 2001), we advocate a network approach to conceptualizing and measuring shared leadership as an important step forward. Rather than capturing a team's overall central tendency by taking the mean of a Likert scale, this approach incorporates the pattern of leadership present throughout the team. By examining all possible relationships in the team, this density measure captures the degree to which the team as a whole relies heavily on most of its members for leadership. It thus allows for a closer approximation to the theoretically rich concept of shared leadership.

This study also presents an initial understanding of the antecedent conditions, both internal and external to teams, that enable shared leadership to develop. We found that when a team has an internal environment characterized by a clear and unifying direction that is well understood within the team, a strong sense of interpersonal support whereby team members feel recognized and encouraged, and a high level of voice and involvement within the team, it is able to develop a leadership network characterized by high levels of mutual influence and sharing of leadership responsibilities. Our findings also demonstrate the importance of coaching by an external leader for supporting the emergence of shared leadership, as well as when this coaching support is most necessary (Hackman & Wageman, 2005). When an internal team environment is supportive, coaching by the external leader is less critical for the emergence of shared leadership; however, when an internal team environment is unsupportive, coaching interventions are important for filling a role that is not being filled by the team (cf. Hackman & Walton, 1986).

Managerial Implications

This study has important implications for team leaders and managers. First, the findings suggest that organizations should help develop strong internal leadership patterns within their teams to bolster effectiveness. Organizations can promote internal leadership by setting expectations and encouraging members when teams initially form to view themselves and their fellow team members as leaders and to engage in shared, mutual leadership. Organizations can also provide training that fosters a shared leadership perspective and disseminates

"best practices." Second, our results point to specific dimensions of internal team environments—shared purpose, social support, and voice—that support the development of shared leadership in teams. Managers should therefore ensure that each team has a clear and shared sense of direction and purpose, promote and establish norms of participation and input into the team's activities and strategies, and seek to foster a positive environment where team members encourage one another and actively recognize each others' contributions. Organizations may further support these conditions by institutionalizing a team charter process whereby teams, upon their formation, collectively identify and agree upon a common goal and set of priorities, team roles and responsibilities, and team norms. Third, our findings suggest that external leaders should engage in supportive coaching of teams to facilitate the development of shared leadership. This coaching can be in the form of encouraging, reinforcing, and rewarding instances in which team members demonstrate leadership, assisting teams when internal conflicts arise (e.g., over sharing leadership responsibilities), providing general encouragement to a team as a whole, and being available for suggestions or input into the team's task strategies as needed (Hackman & Wageman, 2005). Team leaders should pay particular attention to teams that may have weaker internal environments in order to provide additional motivation, guidance, and support. However, for teams with supportive internal environments, stronger coaching may not provide much additional assistance in developing shared leadership.

Limitations and Future Research

Our study has several limitations that need to be addressed in future research. First, the partially cross-sectional design did not allow for testing causality. Although we did measure shared leadership after it had been given time to develop and collected outcome data from third parties after team projects were complete, shared leadership is an emergent phenomenon, and longitudinal designs are needed to understand how shared leadership develops over time by looking at changes in a leadership network over stages of team development. Second, although the teams we studied performed real consulting engagements and were responsible to their clients for delivering completed projects, team members were MBA students, not full-time employees. For team members who are full-time employees working in different organizational settings, shared leadership may operate differently. Third, common source variance may have influ-

enced the relationship between internal team environment and shared leadership, since both measures were taken from team members. However, it is important to note that internal team environment was a perceptual measure of an entire team's behavior and actions, whereas shared leadership was a network measure compiled from ratings of each individual team member. This distinction helps mitigate the likelihood that common source bias influenced the relationship.

Additionally, both the strengths and weaknesses of our measurement approach for shared leadership should be highlighted. Our measurement of shared leadership as network density represents an improvement in this research field, notably by capturing the overall patterns of shared influence within teams and overcoming a primary limitation of behavioral scales that restrict influence to a set of prescribed behaviors. Operationally, by broadly asking respondents the extent to which team members exerted "leadership" rather than detailing specific leadership behaviors, our measure of shared leadership captured the respondents' personal and implicit theories of leadership, and was consistent with the approach others have used in similar contexts (e.g., Mehra et al., 2006). However, the notable limitations to such an approach should also be highlighted. Because it neither specified the meaning of leadership nor primed specific behaviors for respondents, it is possible that our measure tapped something other than leadership influence, such as participation and engagement, helping and cooperation, or respect and listening among team members. Thus, future research along these lines should include efforts to provide leadership definitions and/or behavioral examples to minimize the influence of differences in respondents' attributions. Further, a richer conceptualization and operationalization might be developed that, in addition to identifying leadership sources, captures the quality and nature of leadership offered by each team member.

Future work should focus on a more detailed understanding of the nature of shared leadership, its development, and boundary conditions on its effectiveness. It seems clear that relying on many team members for leadership can be an effective approach to team leadership, yet there are many leadership styles that team members might employ, such as directive, transactional, transformational, and empowering leadership, as well as varying leadership roles that team members may adopt. Future research is needed to address both how different leadership styles and roles interrelate and complement one another when they are shared in teams and the relationship between shared leadership and external leadership beyond the effects of coaching.

Additional predictors of shared leadership development should also be examined, such as team empowerment (e.g., Kirkman & Rosen, 1997), team composition (e.g., Cohen & Bailey, 1997), and contextual factors (e.g., Gladstein, 1984). Teams that are highly empowered should be more likely to develop shared leadership as a result of the autonomy and meaningfulness of the work they are doing as well as strong collective beliefs about their potency and impact (Kirkman & Rosen, 1997). The composition of a team in terms of its size and characteristics such as experience, expertise, and personality, as well as demographic compositional patterns such as the existence of faultlines (Lau & Murnighan, 1998), may also play a role in the development of shared leadership. Finally, in addition to external coaching, other contextual factors may also impact shared leadership, such as reward and recognition systems, training in important teamwork and leadership skills, and the nature of a team's task itself (e.g., Hackman, 1987).

Potential mediating mechanisms linking shared leadership to performance and other effectiveness criteria should be explored as well. For instance, the reciprocal interactions and influential exchanges between team members may facilitate development of team knowledge structures such as transactive memory systems or shared mental models. In addition to serving as a potential antecedent, team empowerment may be another mediating mechanism through which leadership becomes shared among team members (Kirkman & Rosen, 1997).

A number of important boundary conditions for the effectiveness of shared leadership should be examined, such as the distribution of task competence, task interdependence, task complexity, team life cycle, and cultural values (Pearce & Conger, 2003). Shared leadership is likely to be more effective when team members have a high level of task competence, when a task is relatively complex, when task interdependence is high, and when the team life cycle allows for the development of shared leadership. It is also likely to be affected by cultural values, particularly power distance and collectivism (Gibson & Zellmer-Bruhn, 2001; Kirkman & Shapiro, 1997), and it may be more likely to develop and thrive in cultures that are low in power distance and in cultures that are high in collectivism (Carson, 2005).

Finally, team size was found to have a strongly positive relationship with shared leadership. Our interpretation of this finding is that teams with more members have greater potential leadership

resources available for sharing. However, there may be a nonlinear relationship between team size and shared leadership in teams larger than those in our study. Beyond a certain team size, either a detrimental or ceiling effect on shared leadership may occur, perhaps as the result of social loafing or free riding. Future research should explore these nonlinear possibilities further by sampling teams with greater range on team size.

Conclusion

As organizations continue to devote vast resources to the use of teams and teamwork, the need for a better understanding of effective team leadership continues to grow. This study provides an important contribution by highlighting the importance of leadership input from multiple team members and suggests that shared leadership is a critical factor that can improve team performance from the viewpoint of customers or end users of a team's work. Although not a final statement on the topic, this study adds to the growing body of evidence that a team does well when it relies on leadership provided by the team as a whole rather than looking to a single individual to lead it.

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APPENDIX

Items Assessing Internal Team Environment for Shared Leadership

Shared Purpose

The members of my team . . .

1. Spent time discussing our team's purpose, goals, and expectations for the project.

2. Discuss our team's main tasks and objectives to ensure that we have a fair understanding.

3. Devise action plans and time schedules that allow for meeting our team's goals.

Social Support

The members of my team . . .

4. Talk enthusiastically about our team's progress.

5. Recognize each other's accomplishments and hard work.

6. Give encouragement to team members who seem frustrated.

Voice

7. People in this team are encouraged to speak up to test assumptions about issues under discussion.

8. As a member of this team, I have a real say in how this team carries out its work.

9. Everyone on this team has a chance to participate and provide input.

10. My team supports everyone actively participating in decision making.

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