Leadership across levels: Levels of leaders and their levels of impact

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ABSTRACT

This article assesses 25 years of empirical leadership research in 11 top journals with the goal of understanding current practice and future needs for drawing solid conclusions about leadership at different hierarchical levels of the organization, as well as leadership's effects on individuals, teams, units and organizations. We summarize the hierarchical level of leader and outcome level of analysis studied in different theoretical perspectives on leadership (traits, behavioral, transformational, LMX, strategic, shared) and by journal outlet. Among our findings, we observe that significantly less attention has been devoted to team- and unit-level emergent processes and outcomes, despite its conceptual relevance for leadership theory and practice. Four critical opportunities for advancing leadership science are presented.

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Leadership in organizations is an inherently multilevel phenomenon (Dansereau, Alutto, & Yammarino, 1984; Yammarino, Dionne, Chun, & Dansereau, 2005). Organizational effectiveness hinges on coordinated leadership being enacted from leaders residing within multiple hierarchical levels, whose leadership shapes crucial individual-, team-, unit-, and organizational-level outcomes. Despite this reality, research on leadership often seems disconnected (Zaccaro & Klimoski, 2001) owing at least in part to separate disciplinary groups guiding theory and research on leadership at different levels; for example, organizational-level leadership research is generally the province of business scholars whereas lower-level managerial leadership research has a strong grounding in psychology. The purpose of this paper is to advance an integrated "levels-rich" science of leadership. Our approach is to first review the past twenty-five years of leadership research to critically consider the extent to which conceptually meaningful aspects of leadership across levels have been represented in past work, and then to use this assessment to bolster a set of research priorities for the next twenty-five years of leadership research.

Scientists and practitioners interested in leadership phenomena have long recognized that leaders can have significant effects on collectives including teams, units, and organizations. Although much of the empirical research on leadership focuses on predicting outcomes that reside at the individual level of analysis (Kaiser, Hogan, & Craig, 2008), many of the situations where leaders are potentially most pivotal require complex collective interactions (DeChurch et al., in press; Finkelstein, Hambrick, & Cannella, 2009; Zaccaro, Rittman, & Marks, 2001). The problem of leaders shaping collective emergent phenomenon sits at the intersection of two theoretical sub-fields; one concerned with the dynamics of leaders, followers and their interactions (i.e., leadership research), and the other focused on understanding the emergent characteristics necessary for individual effort to combine in ways that produce synergistic outcomes (i.e., teams research). This study contributes to the integration of these two areas, cumulating findings through the conceptual lenses of dominant leadership theories, team performance models, and overarching multilevel organizational theory.

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Levels of leaders in organizations

Many leadership scholars have explicitly acknowledged that leadership needs are dependent on the leader's level within the organization (Day & Lord, 1988; Hunt, 1991; Hunt & Ropo, 1995; Jacobs & Jaques, 1987; Katz, 1955; Katz & Kahn, 1978; Zaccaro, 1996; Zaccaro & Klimoski, 2001). Although much leadership research grounded in psychology has tended to examine rich dynamics of leadership, the findings largely apply to leaders at lower levels of the organizational hierarchy. At the other end of the spectrum is research conducted in strategic management, which yields a set of findings regarding characteristics of top level leaders and their pattern of correspondence to organizational strategies and outcomes (Hambrick & Mason, 1984).

Jacobs and McGee (2001) differentiate three general levels of leadership which correspond to the long recognized three-tiered organizational design. At the bottom, leadership involves supervision where leaders hire and fire and allocate tasks. The next layer up is middle management where leaders establish operational goals and coordinate the effort required to meet these objectives. The top-level leadership layer is the strategic apex of the organization which establishes a vision and sets broad objectives for the overall organization.

Building on this three-tiered view of organizations, Zaccaro and Klimoski (2001) submit that although leaders at different organizational levels enact the same functions: direction setting, boundary spanning, and operational maintenance, they do so differently at different organizational levels. The difference between direction-setting at the top versus the bottom of the organization resides in the time horizon. At the bottom of the organization, a leader may plan for a 3 month time horizon whereas at the CEO level, the horizon includes planning for years and maybe even decades ahead (Jacobs & McGee, 2001). With boundary spanning, the difference rests in the nature of the boundary the leader is spanning. At lower levels of the organization, the leader is boundary spanning between his/her unit and other units internal to the organization; conversely, at higher levels of the organization, leaders increasingly span boundaries that link his/her unit to entities outside the organizational boundary. Operational maintenance and coordination differ in the degree to which leader interaction is direct versus indirect. While leaders at all organizational levels facilitate coordination, at lower levels the coordinative behavior is direct, whereas at higher levels it involves increasingly indirect actions such as the establishment of operating procedures to routinize coordinative patterns.

Building a complete and useful science of leadership involves studying these leadership processes at these three and other meaningful (e.g., strategic alliances) organizational levels. In the current review we examine the extent to which past research on leadership informs knowledge about top, middle, and lower-level leadership processes. The idea is not to argue that leadership at any one level is more or less important than leadership occurring at another level, but rather to submit that if leadership theory holds that behavioral and/or competency needs change at different organizational levels (Zaccaro & Klimoski, 2001) and the outcomes of relevance similarly change, then it would be a valuable practice for organizational scientists to vigorously investigate leadership dynamics at all levels.

Research Question 1. *To what extent has leadership science investigated leadership processes at the top, middle, and lower organizational levels?*

Leadership and emergence: levels of leadership outcomes

Zaccaro and Klimoski (2002) submit that "although there exist large theoretical and empirical literatures on both leadership and team-group dynamics, we still know relatively little about how leaders create and direct team processes to achieve collective success (p. 5)." Additionally, in a provocative paper in the American Psychologist, Kaiser et al. (2008) argue that "the vast empirical literature on leadership may tell us more about the success of individual managerial careers than the success of these people in leading groups, teams, and organizations (p. 96)." Kaiser and colleagues' claims are based on their observations of the nature of dependent variables included in meta-analytic reviews of the leadership literature. In particular, they note that the bulk of leadership science is targeted at individual-level phenomenon (i.e., how leadership affects individuals' performance and job attitudes), and the executive level (i.e., how leader attributes affect organizational outcomes and executive career success). Very little leadership research is aimed at explaining how individual activity is synchronized and collectively harnessed in a manner that ultimately translates into team, unit, and organizational effectiveness.

Building on this point, leadership science would ideally advance an understanding of the specific effects of leadership on outcomes residing at the individual, team, unit, and organizational levels of analysis. This perspective of leaders as shaping meaningful phenomenon at multiple levels of analysis can be informed by the theoretical framework of Kozlowski and Klein (2000) for understanding emergence in organizations. "A phenomenon is emergent when it originates in the cognition, affect, behaviors, or other characteristics of individuals, is amplified by their interactions, and manifests as a higher-level, collective phenomenon" (Kozlowski & Klein, 2000, p. 55). A useful organizing framework for leadership research is to consider the nature of emergence meaningful at each organizational level.

Zaccaro et al. (2001) present a framework for team leadership which explicitly considers how leadership shapes emergent processes in organizations. They submit that leadership affects four types of emergent constructs: cognitive, behavioral, affective, and motivational (Zaccaro et al., 2001). Emergent cognitive states include sense-making (Weick, Sutcliffe, & Obstfeld, 2005), climate (Zohar, 2000), transactive memory (Wegner, Erber, & Raymond, 1991), and shared mental models (Cannon-Bowers, Salas, & Converse, 1993; DeChurch & Mesmer-Magnus, 2010). Behavioral processes are also emergent constructs, and can be grouped according to Marks, Mathieu, and Zaccaro's (2001) taxonomy of team process. This taxonomy divides the behavioral acts which enable multiple individuals to combine their inputs into those that involve pre-task transition processes: strategy formulation and

planning, goal setting, and mission analysis, and those action processes carried out while performing a task: coordination, systems monitoring, monitoring progress towards group goals, and team monitoring and backup behavior. A commonly studied motivational emergent state is collective efficacy, a shared belief in the group's capacity to perform (Gully, Incalcaterra, Joshi, & Beaubien, 2002). Affective emergent states include cohesion (Beal, Cohen, Burke, & McLendon, 2003; Mullen & Copper, 1994), trust (Mayer, Davis, & Schoorman, 1995; Dirks & Ferrin, 2002), and identity (Ashforth & Mael, 1989).

Leadership at all organizational levels could be meaningfully thought to impact on these four types of emergent constructs, though the nature of emergence would likely differ by organizational level. Leaders at all organizational levels are actively engaged in building and directing teams of interdependent individuals. At lower organizational levels, these are relatively small teams, at mid levels they are larger units, and at the strategic apex they are highly specialized top management teams whose members each direct their own large organizational units. Thus, an imperative of leadership common to all levels is the need to harness emergent phenomenon, though the nature of emergence ought to differ according to organizational level. The science of leadership would ideally study the effects of leaders on both individual-level outcomes as well as on phenomenon which emerge at the team, unit, and organizational level.

Research Question 2. To what extent has leadership science investigated the effects of leadership on outcomes residing at the individual, team, unit, and organizational levels?

Theories of leadership

Leadership theory encompasses an eclectic variety of perspectives on what defines the essence of leadership. In considering the role of leadership at different organizational levels and effects on emergent constructs, we focus in on six perspectives representing different views of leadership: leader traits, leader behavior and contingency approaches, leader-member exchange (LMX), transformational leadership, strategic leadership, and shared leadership.

The first approach we consider is the trait approach to leadership, which has a long history in organizational science. Scholars interested in trait approaches have sought to identify characteristics that are related to leadership emergence and effectiveness. The big five traits of extraversion, conscientiousness, neuroticism and openness to experience have been meta-analytically linked to leader emergence and effectiveness (Judge, Bono, Ilies, & Gerhardt, 2002), and additional cumulative studies have examined the relationship between other individual differences and various leadership behaviors and outcomes (e.g., Day, Shleicher, Unckless, & Hiller, 2002; Eagly & Johnson, 1990).

The second approach we consider is the behavioral perspective. These theories isolate specific behaviors associated with effective leadership. Two heavily researched behaviors are initiating structure and consideration. These dimensions of leader behavior are positively linked to many valued organizational outcomes including subordinate performance, group and organizational performance, subordinate job attitudes, and turnover (House & Aditya, 1997; Judge, Piccolo, & Ilies, 2004). Also influential in the domain of leader behavior are taxonomic efforts specifying more narrowly-defined behaviors. For example, Yukl and colleagues (Yukl, Gordon, & Taber, 2002) proposed a taxonomy of 12 behavioral dimensions and Fleishman et al. (1991) developed 13 behavioral categories.

A third approach to leadership is leader–member exchange (LMX) theory which holds that leaders form differentiated patterns of relationships with their subordinates resulting in an "in group" and an "out group" (Graen & Uhl-Bien, 1995). In-group members are highly trusted, motivated performers who the leader responds to with greater attention and consideration than he or she allocates to members of the out-group. Out-group subordinates have a more transactional low-quality relationship. Importantly, the focus of LMX is on the effects of the quality of the relationship between the leader and follower on resulting organizational outcomes (Gerstner & Day, 1997; Graen, Liden, & Hoel, 1982). This is a clear contrast to the trait and behavioral views which focus on leadership as emanating from a person. In LMX theory, leadership is a property of the leader-subordinate ("member") relationship.

A fourth approach, transformational leadership theory, has been heavily researched for over twenty years. The theory extends behavioral approaches to consider the actions of leaders who incite extraordinary effort on the part of subordinates. Transformational leaders (TL) encourage followers to transcend their self-interest and increase their awareness of valued outcomes by engaging in four types of behaviors: idealized influence, inspirational motivation, intellectual simulation, and individual consideration (Bass & Avolio, 1993).

A fifth approach is the upper echelons perspective of strategic management (Hambrick, 2007; Hambrick & Mason, 1984) which we refer to as strategic management in this paper, and is often not examined within the mainstream leadership literature. Indeed, many research papers using this perspective do not use the word leadership or leader in the core of the paper. This perspective often shares some similarity to the trait approach, but is distinct in the focus on individuals in the apex of an organization and their effect on strategic processes and outcomes (e.g., Jensen & Zajac, 2004; Nutt, 1987; Tushman & Rosenkopf, 1996). A significant body of empirical evidence exists demonstrating that characteristics and actions of strategic leaders are related to more distal outcomes such as firm strategy and performance, as well as the relationships with and the performance of teams within the organization (e.g., Chatterjee & Hambrick, 2007; Peterson, Smith, Martorana, & Owens, 2003; Resick, Whitman, Weingarden, & Hiller, 2009).

A newer, sixth, tradition in leadership research examines leadership as a set of shared and distributed functions enacted by multiple leaders. For instance, shared leadership is viewed in team settings where multiple members of a collective take on or transfer the "leader" role among team members in order to take advantage of each members' strengths in an effort to attain the overall team goal (Pearce & Conger, 2002; Hiller, Day, & Vance, 2006; Burke, Fiore, & Salas, 2003). In shared leadership, the

empowerment of multiple team members is based on expertise relevance and context. Similar to shared leadership is distributed leadership, which acknowledges that leadership is comprised of a collection of behaviors that can be rotated among the members of the group (Barry, 1991; Erez, LePine, & Elms, 2002).

Each of these six traditions takes a slightly different focus in defining the core elements of the leadership phenomenon. Ideally, leadership science would elaborate the role of each perspective of leadership on leaders operating at multiple hierarchical levels. We examine the extent to which this is the case.

Research Question 3. *To what extent has leadership science within each of these six theoretical orientations investigated leadership processes at the top, middle, and lower organizational levels?*

Additionally, we examine the extent to which each of these six perspectives has investigated the linkages between the core aspects of leadership and emergent phenomenon residing at the team, unit, and organizational-level of analysis. The science of leadership would ideally study the effects of leaders on both individual-level outcomes as well as on phenomenon which emerge at the team, unit, and organizational level.

Research Question 4. *To what extent has leadership science within each of these six theoretical orientations investigated the effects of leadership on outcomes residing at the individual, team, unit, and organizational levels?*

Toward an integrated science of leadership

Leadership science is a mature area of organizational science comprised of a variety of rich theoretical perspectives, and informed by multiple disciplinary backgrounds, all intended to provide explanatory and predictive capability which ultimately enables leadership practitioners to develop leadership capacity throughout organizations. The purpose of our review is to recast the study of leadership into an integrated science based on an inherently multilevel view of (1) the levels within organizations at which leaders operate and (2) the levels of emergent phenomenon shaped by leadership (Waldman & Yammarino, 1999). In order to lay out the most pressing needs for a complete perspective on multilevel organizational leadership, we begin by taking a look back to the last 25 years to take stock of the levels within which our science is currently rooted.

We suspect that past research on leadership can be described as both matched and differentiated. Leadership research has been *differentiated* by theoretical orientation and disciplinary background. Many past theorists have lamented at the lack of integration regarding perspectives and definitional characterizations of organizational leadership. While we certainly do not contend that there is either a best definition or a best disciplinary focus, we do submit that an integrated science of leadership could better be built were there a common set of multilevel taxons against which all theories explained their findings. Identifying the organizational level within which leadership operates, and then explicitly modeling the impact of various perspectives of leadership on emergent outcomes at different levels of analysis seems clearly warranted.

Leadership research is also *matched*, in that many leadership perspectives are unnecessarily constrained within a particular level of analysis. Trait and behavioral leadership research tend to examine individual-level processes, but clearly there are arguments to be made linking these effects to higher-level emergent outcomes. Strategic leadership is typically linked directly to organizational profitability metrics, but there are logical explanations for these linkages that involve top-level leaders shaping the emergent cognitive, behavioral, motivational, and affective states of various units within their organizations.

We offer as a starting point the idea that leadership science may progress further faster were it more integrated by a levels focus and mismatched by examining multiple levels across multiple theoretical orientations. An *integrated* science of leadership preserves the uniqueness and richness of each of the core theoretical demarcations of say, transformational versus behavioral leadership, but does so around common themes of leader levels and emergent outcomes. An integrated science of leadership creatively considers how leadership enacted at one level or of one variety shapes emergence of various types and at different levels within organizations.

Method

Literature search

We began our review by identifying and coding a sample of the most rigorous empirical research on leadership conducted in the past 25 years. Because our interest is on understanding the levels of leadership and the levels of outcomes studied, we focus specifically on the empirical research record that links leadership to outcomes. In order to include the top end of the rigor continuum, we included research published in 11 journals that have been consistently identified as publishing top quality research. Lastly, the twenty-five 25-year timeframe was chosen to enable us to examine trends over time, and to coincide with the period of time within which many of the modern approaches to leadership have been introduced and developed (e.g., transformational leadership theory, LMX).

We manually searched each of the 11 focal journals. We scanned the title, abstract, tables, and figures of every article published in every issue of these 11 journals between January, 1985 and December, 2009: *Journal of Applied Psychology*, *Personnel Psychology*, *Academy of Management Journal*, *Management Science*, *Journal of Vocational Behavior*, *Organizational Behavior and Human Decision Processes*, *Strategic Management Journal*, *Journal of Organizational Behavior*, *Administrative Science Quarterly*, *Journal of Management*, and *The Leadership Quarterly*. We chose to examine these 11 journals because they are highly respected outlets for the

Organizational Behavior and Industrial Organizational Psychology literature (Podsakoff, Mackenzie, Bachrach, & Podsakoff, 2005; Thai & Meyer, 1999). Nine out of these 11 journals are ranked within the top ten Management journals based on 28 Management journals selected by Podsakoff and colleagues (2005). They found that 82 percent of citations from 1985 to 1999 were attributable to the top two quartiles of those journals. Leadership studies in the 11 journals selected in this study bring significant impact to fields of Psychology and Management. We believe the articles published in the journals selected in this study are extensively reviewed and exhibit the highest level of research quality. Thus, this sample of studies enabled us to report on trends and aggregate practices regarding leadership and emergent constructs as represented in top quality leadership research.

In order to locate articles that empirically linked leadership to emergent constructs, we used keywords such as *leader*, *leadership*, *manager*, *supervisor*, *mentor*, *mentee*, *top management team*, *CEO*, *executives*, *board of directors*, *ownership*, *stock*, *support*, *management*, *president*, *strategic*, *power or influence*, *senior officer*, *directorship* and *stakeholders*. Articles were included in the current investigation if they contained any of the key words above. In all, 2,031 articles met these initial criteria and were subsequently content coded. Commentaries and book reviews were omitted from the article search process. We conducted the entire search process twice to ensure that we thoroughly located all the potential leadership articles.

From this original set of 2,031 articles, we excluded articles that did not empirically link leadership to at least one outcome variable. The following types of articles were not coded for further analyses for the following reasons: 453 articles which did not report an outcome of leadership, 377 formal theory/literature review papers, and 40 meta-analytic articles. The distribution of the remaining articles by journal source was as follows: *Journal of Applied Psychology* (JAP: 16%), *Personnel Psychology* (PP: 7%), *Academy of Management Journal* (AMJ: 14%), *Management Science* (MS: 1%), *Journal of Vocational Behavior* (JVB: 8%), *Organizational Behavior and Human Decision Processes* (OBHDP: 5%), *Strategic Management Journal* (SMJ: 10%), *Journal of Organizational Behavior* (JOB: 10%), *Administrative Science Quarterly* (ASQ: 4%), *Journal of Management* (JM: 8%), and *The Leadership Quarterly* (LQ: 17%).

The final number of articles on which the subsequent analyses were conducted was 1,161. Of the 1,161 articles, 74 articles reported leadership-outcome relationships from multiple samples. Some articles might appear in multiple categories because of separate studies within an article, or, more likely, in cases where multiple approaches or levels of outcome variables were examined. Thus, sample sizes in some analyses became larger than the total number of studies.

Coding

Five coders were involved in the coding process: two faculty members and three Ph.D. students. The coding team had multiple meetings to discuss the categories and their meaning. These meetings amounted to more than 30 hours. Next, ten additional articles were randomly selected from 1,660 articles that were located in the first-round search, and all five raters coded these articles to check coder agreement. The coders met to discuss coding discrepancies and resolve them by consensus. After the five raters had reached high consensus on how each category should be coded, the remaining articles were assigned to coders, one coder per article. As a final check on coding, coder agreement was estimated by having different combinations of two coders independently code a randomly chosen subset of 40 articles. Agreement ranged from 77.19% to 90% across all categories and coders.

Leader level

The organizational level at which leaders functioned was evaluated. In this category, there were six subcategories: top level, middle management, lower level, mixed, not reported (N/R), and laboratory. Leadership functioning at the top of an organization was considered as top level if coders were able to identify that those top managers acted only as superiors and did not have any supervisors above their level except for the board of directors (Uyterhoeven, 1989). Middle management was broadly defined as those who accomplished their goals by managing relationships with their subordinate groups, and linking their groups to other entities within the organization (Uyterhoeven, 1989). Unlike supervisors at lower levels who interacted directly with employees at the lowest level, those managers attended to higher-level goals of their business units and projects and managed multiple lower organizational levels in order to be successful. Although managers at lower levels closely supervise and support the lowest-level employees, they do not have to manage multiple hierarchical levels below them. Coders examined the description of study sample, and if they could identify information that suggested multiple levels existing below managers, they coded the sample as middle manager. If the study described its sample as locating at the bottom of the hierarchy, it was coded as lower-level. Student leaders in activities or class projects were categorized as lower-level because they did not usually have to manage multiple levels below them but had to continuously work with other students located at one level below. When studies sampled from a combination of any of these levels, it was coded as mixed. If studies did not provide any information regarding organizational levels of sample or from which coders could infer any levels, those were coded as not-reported (NR). A number of studies were conducted in laboratory settings, and those were coded as laboratory.

Criterion level

The level of analysis of the dependent variable (DV) was categorized into one or a combination of following choices: individual, small group/team, unit, and organization. Many criteria involved variables that were measured at a lower level of analysis and then aggregated to a higher level of analysis for hypothesis testing. In these cases, we categorized the level at which data were analyzed. For example, when measurement was at the individual level, and then scores were aggregated to the team level for analyses, this was coded as "small group/team" for the current review, regardless of the conceptual/methodological justification (or lack

thereof) for aggregation (see Yammarino et al., 2005, for a review of justification for aggregation and appropriateness of levels analyzed in leadership research).

Criterion type

We also categorized the types of DVs that were examined in the study. The categories included: objective performance outcomes (e.g., sale volume, stock price fluctuations, return on equity & assets), subjective performance outcomes (e.g., performance ratings), perceptual (e.g., leadership effectiveness (e.g., subordinate perception climate), attitudinal (e.g., job satisfaction, commitment), group process (e.g., coordination), motivation (e.g., efficacy), organizational citizenship behavior (e.g., OCB), emotion (e.g., burnout), self-rated behavior, and all others.

Leadership approach

Six leadership approaches/content domains and an "other category" were coded. The categories (described above) were based on House and Aditya's (1997) review of the field of leadership and included: leader traits, leader behaviors, leader–member exchange (LMX), neocharismatic/transformational leadership, strategic, distributed/shared, and other. The "other" category included leadership approaches such as authentic, political, spiritual, implicit, supervisory support, mentoring, other "new" directions, and leader development. Contingency theory work was subsumed under the behavioral category. Although contingency theories represent a distinct theoretical tradition within leadership research, each specifies behavioral styles of leaders, and so in terms of the leadership-outcome construct relationship, we include contingency research in the leader behavior category.

Results

Table 1 presents an overview of the empirical studies of leadership and outcomes from 1985 to 2009 broken out by leader organizational level examined. Several patterns come through in this table. First, there is a substantial amount of research on top-level organizational leadership (34.43% of empirical leadership studies), followed by lower-level leadership (16.74%), and the least studied level of leadership is middle management (7.25%). Second, nearly 24% of studies do not report enough information to reasonably infer the organizational level at which the focal leadership processes apply. Given that leadership imperatives are believed to differ at various levels of organizations, this finding is particularly concerning. Third, only 7.51% of the empirical findings linking leadership to outcomes are based on laboratory findings. Although not an ideal context for studying certain aspects of leadership, laboratories do complement other investigations by affording researchers unique insights into the possibilities of leadership which are difficult to examine in a controlled way in field settings. Table 1 presents these percentages of studies both over the cumulate 25-year period, and broken out into 5, 5-year time periods. Overall, these patterns of (1) a primary emphasis on top-level leadership with inclusion of the strategic management literature, (2) a large number of findings without information regarding the leader level, and (3) a small number of laboratory investigations, appear relatively stable over the past twenty-five years.

Table 2 presents the number of empirical investigations of leadership broken out by the level of analysis of the dependent variable; in other words, Table 2 presents the number of findings linking leadership to outcomes residing at the individual, team, unit, and organizational level. The most striking conclusion from Table 2 is the small percentage of studies that examine outcomes of leadership at the team (10.93%) and unit (5.58) levels. On the other hand, 51.75% of empirical investigations of leadership are connecting leadership to individual-level outcomes, and 31.74% of findings connect leadership to organization level outcomes. Given the ubiquity of teams in organizations, and the clear instrumentality of leaders in building and developing those teams, this clearly represents a meaningful area in need of increased attention by leadership scholars.

Examining the patterns of leadership–outcome levels in Table 2 over time shows that the focus on individual-level outcomes increased consistently over time, whereas the focus on team and unit outcomes has increased proportionately more in the two most recent time periods (2000-2009), and the relative percentage of studies focused on organization-level outcomes has decreased slightly in the most recent time period. Figure 1 displays these findings graphically. Table 3 presents the number of empirical investigations of leadership at the individual, team, unit and organizational levels of analysis by journal. First, examining

Table 1
Number of empirical investigations of leadership by leader organizational level in the organization (1985–2009).

	1985–1989		1990–1994		1995–1999		2000–2004		2005–2009		Total (1985–2009)	
	N	%	N	%	N	%	N	%	N	%	N	%
Top	34	32.69	69	39.66	89	38.70	110	34.48	97	29.22	399	34.43
Middle	8	7.69	11	6.32	14	6.09	20	6.27	31	9.34	84	7.25
Low	23	22.12	27	15.52	35	15.22	56	17.55	53	15.96	194	16.74
Lab	12	11.54	7	4.02	24	10.43	22	6.90	22	6.63	87	7.51
Mixed	4	3.85	16	9.20	23	10.00	33	10.34	44	13.25	120	10.35
NR	23	22.12	44	25.29	45	19.57	78	24.45	85	25.60	275	23.73
Total	104	100.00	174	100.00	230	100.00	319	100.00	332	100.00	1159	100.00

Table 2
Number of empirical investigations of leadership and individual, team, unit, and organizational outcomes (1985–2009).

	1985–1989		1990–1994		1995–1999		2000–2004		2005–2009		Total (1985–2009)	
	N	%	N	%	N	%	N	%	N	%	N	%
Individual	61	55.96	96	52.17	124	50.00	175	49.16	193	54.06	649	51.75
Team	7	6.42	15	8.15	22	8.87	44	12.36	49	13.73	137	10.93
Unit	6	5.50	4	2.17	12	4.84	24	6.74	24	6.72	70	5.58
Organization	35	32.11	69	37.50	90	36.29	113	31.74	91	25.49	398	31.74
Total	109	100.00	184	100.00	248	100.00	356	100.00	357	100.00	1254	100.00

the last column of Table 3 shows that over the 25-year period of our review, the *Journal of Applied Psychology* has published the most empirical investigations of leadership (21.45%), followed by the *Academy of Management Journal* (13.96%), *Leadership Quarterly* (13.88), and *Strategic Management Journal* (12.52%). Among these four, empirical *JAP* has published mostly investigations of leadership linked to individual-level outcomes (198 studies), with 55 studies in 25 years examining team and unit-level outcomes, and 16 linking leadership to organization level outcomes. At the other end of the spectrum is *SMJ*, which has published 136 investigations linking leadership to organizational outcomes, 14 to team and unit outcomes, and 7 to individual outcomes. This analysis, it should be noted, is based on a sheer count of number of articles, and is not an assessment of proportionality of leadership research within each journal.

Additionally, Table 3 shows that there is the least emphasis on team and unit-level outcomes. There is more attention paid to individual than to organization level outcomes. Furthermore, the relative proportions of findings linking leadership to individual, team, unit, and organizational outcomes differ considerably by journal of publication. We return to this point later.

Table 4 presents the number of empirical investigations by leader organizational level broken out according to the theoretical perspective on leadership. There are clear patterns for LMX and strategy. For LMX, research has been most actively conducted at with lower level leaders (31 of 98) while for strategy, a logical trend was found in that the most studies were concentrated on top level leaders (346 of 363). However, there are no clear patterns shown for traits, behaviors, and transformational leadership even though research has been most actively conducted at the low organizational level for behaviors. For traits and transformational leadership, similar numbers of studies have been conducted across the levels including lab experiments. Another noticeable finding is that many studies did not provide enough description of which organizational level of leader they studied (21.32%) to be comfortably placed in one of the defined categories.

Table 5 presents the number of empirical investigations by level of dependent variable broken out according to the theoretical perspective on leadership. Examining the right-most column shows that behavioral approaches to leadership have received the most attention (25.18% of studies), followed closely by strategic leadership (24.60% of studies). These approaches differ in the extent to which research has linked them to outcomes at different levels of analysis. Leader traits have been primarily linked to individual-level outcomes (109 out of 260 studies); the same pattern was present with leader behaviors (234 out of 390 studies) and LMX (91 out of 105 studies) also being primarily linked to individual-level outcomes. Transformational leadership was primarily examined in relation to individual-level outcomes (94 out of 167), though 47 studies have linked transformational leadership to team or unit-level outcomes, and 26 to organizational-level outcomes. Strategic leadership has been primarily linked to organizational-level outcomes (336 out of 381 studies), with 45 studies examining outcomes at lower levels of analysis. Only 8 studies from this journal set have empirically examined shared and collective forms of leadership.
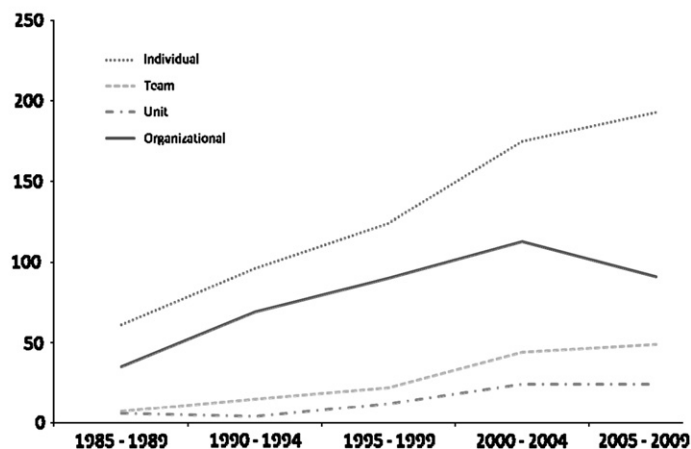

Fig. 1. Trend of organizational level of DV over 25 years.

Table 3

Number of empirical investigations of leadership and individual, team, unit, and organizational outcomes by journal (1985–2009).

| Journal | Level of DV | | | | | |
	Individual	Team	Unit	Organization	Total # per journal	% per journal
AMJ	53	15	8	99	175	13.96
ASQ	6	8	0	40	54	4.31
JOM	51	10	2	57	120	9.57
JOB	93	14	8	10	125	9.97
JVB	53	0	0	1	54	4.31
LQ	105	34	11	24	174	13.88
PP	34	12	5	4	55	4.39
JAP	198	28	27	16	269	21.45
MS	1	0	0	8	9	0.72
OBHDP	48	8	3	3	62	4.94
SMJ	7	8	6	136	157	12.52
Total	649	137	70	398	1254	100.00
% per Level	51.75	10.93	5.58	31.74	100.00	–

Table 6 presents the number of empirical investigations by level of dependent variable broken out according to the type of outcome variable examined. The most frequently studied outcome of leadership is objective performance (24.87%), followed by perceptual (21.94%), and then by attitudinal constructs (19.21%). The least studied outcomes of leadership are group processes (2.88%), motivation (3.07%), OCBs (3.49%), and emotions (3.63%). Notably, these all reflect constructs which are explanatory in nature, describing the specific mechanisms through which leadership may lead to performance. Approximately one third (31.09%) of the outcomes leadership has been linked to consist of either subjective or objective performance variables. This means that two thirds of the outcomes are non-performance-based.

Table 6 also enables comparisons of outcome types based on the level of analysis of the dependent variable. Of the three most commonly research outcomes, objective performance outcomes most often reside at the organizational level (311 of 527 findings), followed by the organization level individual (138 findings), team level (45 findings), and unit level (33 findings). Next, perceptual indicators most often reside at the individual level (284 of 465 findings), followed by the organizational level (95 findings), and are least studied at the team and unit levels (86 findings). Attitudinal outcomes are most often studied at the individual level (316 of 407 findings), followed by the team level (47 findings), organizational level (24 findings), and then unit level (20 findings).

Table 7 presents the number of empirical investigations at various levels of analysis at which low-, middle-, and top-level leadership has been examined. Here we can see a clear linkage between the level of leadership examined and the level of outcome variable. With top-level leadership, outcomes examined are most often at the organizational level (361 out of 420 findings) with only 6 studies examining top-level leadership's effects on unit-level outcomes, 23 on team-level outcomes and 30 on individual-level outcomes. Only 92 empirical investigations reported findings which bear on middle-level leadership, and of these, 59 examined outcomes at the individual level, 12 at the team level, 11 at the organizational level, and 6 at the unit level. Lower-level leadership has been most often linked to individual-level outcomes (147 out of 213 findings), with 42 findings examining team-level outcomes, 19 unit-level, and 5 organizational-level outcomes. This pattern reflects a tendency toward linking matching trend where leadership processes to outcomes at only the matched level of analysis. There is very little research examining how top level leaders affect individuals, teams, and units, and how lower level leaders singularly and collectively influence teams, units, and organizations.

Table 8 reports the number of empirical findings of leadership at various organizational levels broken out by journal. Interestingly, different journals have a different emphasis on leader levels. The top three outlets presenting findings on top-level leadership are *SMJ* (133 out of 399 findings), *AMJ* (97 findings), and *JOM* (56 findings). Clearly, the management discipline is

Table 4

Number of empirical investigations of leadership and leader organizational level by leadership approach (1985–2009).

| | Organizational level of leader | | | | | | | |
	Top	Middle	Low	Lab	Mixed	NR	Total # per journal	% per journal
Traits	121	18	24	24	26	34	247	17.32
Behavior	62	34	75	48	36	96	351	24.61
LMX	1	14	31	1	9	42	98	6.87
Transformational	30	15	26	19	23	31	144	10.10
Strategy	346	0	0	2	13	2	363	25.46
Shared	2	0	3	0	0	1	6	0.42
Other	10	17	54	5	33	98	217	15.22
Total # per level	572	98	213	99	140	304	1426	100.00
% per level	40.11	6.87	14.94	6.94	9.82	21.32	100.00	–

Note: "Other" includes studies which do not fit into the six leadership approaches examined here.

Table 5
Number of empirical investigations of leadership and individual, team, unit, and organizational outcomes by leadership approach (1985–2009).

	Levels of DV					
	Individual	Team	Unit	Organization	Total # per approach	% per approach
Traits	109	20	15	116	260	16.79
Behavior	234	61	29	66	390	25.18
LMX	91	11	2	1	105	6.78
Transformational	94	31	16	26	167	10.78
Strategy	22	21	2	336	381	24.60
Shared	2	4	0	2	8	0.52
Other	195	18	14	11	238	15.36
Total	747	166	78	558	1549	100.00
% per level	48.22	10.72	5.04	36.02	100.00	–

Note: "Other" includes studies which do not fit into the six leadership approaches examined here.

Table 6
Number of Empirical Investigations of Leadership and Individual, Team, Unit, and Organizational Outcomes by Type of Criterion (1985–2009).

	Level of DV					
	Individual	Team	Unit	Organization	Total # per DV type	% per DV type
Objective performance	138	45	33	311	527	24.87
Performance rating	69	24	2	26	121	5.71
Perceptual	284	53	33	95	465	21.94
Leadership effectiveness	114	20	13	15	162	7.65
Attitude	316	47	20	24	407	19.21
Group process	12	37	8	4	61	2.88
Motivation	42	14	5	4	65	3.07
OCB	62	3	8	1	74	3.49
Emotion	71	5	1	0	77	3.63
Self-report behavior	135	11	8	6	160	7.55
Total # per level	1243	259	131	486	2119	100.00
% per level	58.66	12.22	6.18	22.94	100.00	–

Table 7
Number of empirical investigations of leadership and individual, team, unit, and organizational outcomes by leader organizational level (1985–2009).

	Level of DV					
	Individual	Team	Unit	Organization	Total # per leader level	% per leader level
Leader level						
Top	30	23	6	361	420	33.49
Middle	59	12	10	11	92	7.34
Low	147	42	19	5	213	16.99
Lab	73	22	1	0	96	7.66
Mixed	97	9	15	14	135	10.77
NR	243	29	19	7	298	23.76
Total # per DV type	649	137	70	398	1254	100.00
% per DV type	51.75	10.93	5.58	31.74	100.00	–

Table 8
Number of empirical investigations of leadership and leader organizational level by journal (1985–2009).

	Organizational level of leader							
	Top	Middle	Low	Lab	Mixed	NR	Total # per journal	% per journal
AMJ	97	11	30	2	5	22	167	14.41
ASQ	44	3	1	0	1	0	49	4.23
JOM	56	11	14	2	7	27	117	10.09
JOB	9	18	9	5	19	52	112	9.66
JVB	2	1	7	0	18	26	54	4.66
LQ	33	11	29	25	31	23	152	13.11
PP	0	4	20	2	8	14	48	4.14
JAP	15	20	76	25	17	96	249	21.48
MS	8	0	1	0	0	0	9	0.78
OBHDP	2	0	7	26	6	14	55	4.75
SMJ	133	5	0	0	8	1	147	12.68
Total # per level	399	84	194	87	120	275	1159	100.00
% per level	36.24	7.05	16.28	7.30	10.07	23.07	100.00	–

Table 9
Number of empirical investigations of leadership and individual, team, unit, and organizational outcomes by leader organizational level published in JAP, LQ, and AMJ (1985–2009).

	Level of DV																		
	JAP						LQ						AMJ					
	1	2	3	4	# per leader level	% per leader level	1	2	3	4	# per leader level	% per leader level	1	2	3	4	# per leader level	% per leader level
Top	4	0	2	11	17	6.32	11	4	2	19	36	20.69	2	4	1	93	100	57.14
Middle	15	1	3	3	22	8.18	8	1	1	2	12	6.90	6	2	1	3	12	6.86
Low	57	11	13	1	82	30.48	20	11	2	0	33	18.97	21	8	2	2	33	18.86
Lab	19	7	1	0	27	10.04	22	7	0	0	29	16.67	2	0	0	0	2	1.14
Mixed	15	1	1	0	17	6.32	25	6	6	3	40	22.99	4	0	0	1	5	2.86
NR	88	8	7	1	104	38.66	19	5	0	0	24	13.79	18	1	4	0	23	13.14
Total # per DV level	198	28	27	16	269	100.00	105	34	11	24	174	100.00	53	15	8	99	175	100.00
% per DV level	73.61	10.41	10.04	5.95	100.00	–	60.34	19.54	6.32	13.79	100.00	–	30.29	8.57	4.57	56.57	100.00	–

Note: 1 = individual level, 2 = team level, 3 = unit level, 4 = organization level.

producing the bulk of knowledge on the effects of top-level leadership. The top five producers of findings on mid-level leadership are: *JAP* (20 findings), *JOB* (18 findings), *AMJ* (11 findings), *JOM* (11 findings), and *LQ* (11 findings). Mid-level leadership has received very little empirical attention over the past 25 years, but these studies are more evenly dispersed in management and psychology journals, as compared to top-level leadership which tends to be of interest in the management literature. Low-level leadership shows the opposite disciplinary focus as does top-level leadership. The top three producers of findings on low-level leadership were *JAP* (76 out of 194 findings), *AMJ* (30 findings), and *LQ* (29 findings). Overall, this pattern suggests knowledge on leadership by levels has been segmented by disciplinary background, with business scholars examining top-level processes, and psychologists examining lower-level processes.

In order to follow up on this idea of disciplinary background further, we constructed Table 9, which presents the number of empirical findings by level of outcome variable and leader level for the top producer of empirical leadership findings from Psychology, *JAP*, the top producer from management, *AMJ*, and the top producer of leadership findings which encompasses more integration of psychology and management, *LQ*. Examining the first block of Table 9 shows that empirical research on leadership published in *JAP* has largely focused on leadership processes of lower-level leaders (30.48% of leadership findings). Of the findings published in *LQ*, there is more of a balance between top (20.69%) and lower-level (18.97%) leadership processes. Of the findings published in *AMJ*, there is a clear emphasis on top-level leadership (57.14%), followed by lower-level leadership (18.86%).

Table 10 presents the breakdown of leadership research published in these three outlets, *JAP*, *LQ*, and *AMJ* according to the leadership perspective examined. Of the findings published in *JAP*, 43.20% examine leader behavior, whereas of those published in *LQ*, 23.11% examine leader behavior, and in *AMJ*, 17.11% examine leader behavior. The most commonly studied leadership approach in *LQ* is transformational leadership (30.22%); of the findings published in *JAP*, 11.22% examined transformational leadership and 5.70% of *AMJ* findings examine transformational leadership. The most commonly studied leadership approach in *AMJ* was strategic leadership (37.64%), followed closely by leader traits (22.81%). In comparison, 2.04% of *JAP* findings and 8.44% of *LQ* findings examined strategic leadership. Hence, the disciplinary focus of the journal is also associated with the nature of leadership examined.

Discussion

The idea that leadership phenomena differ across organizational levels is not new. Building on multilevel theory, we recast the study of leadership as inherently levels-rich by considering two important planar dimensions: (1) the hierarchical positioning of leaders within organizations, and (2) the levels of analysis at which leadership effects are manifest. We systematically reviewed the past 25 years of empirical findings linking leadership to outcomes in order to shed light on four key questions about the state of leadership research across levels. We now consider the results and implications of our answers to each of these four questions, and then conclude our review with a list of four key needs going forward.

Research Question 1: To what extent has leadership science investigated leadership processes at the top, middle, and lower organizational levels?

The past twenty-five years of leadership research has looked largely at the top and bottom layers of organizations. As a multilevel phenomenon, leadership dynamics play out at multiple hierarchical levels, and the successful organization is comprised of effective leaders setting strategy at the top, mid-level leaders coordinating and integrating, and bottom-level leaders engaging and inspiring their immediate work groups. By far the least well empirically-understood aspect of organizational leadership

Table 10
Number of empirical investigations of leadership and individual, team, unit, and organizational outcomes by leadership approaches published in JAP, LQ, and AMJ (1985–2009).

| | Level of DV | | | | | | | | | | | | | | | | | |
| | JAP | | | | | | LQ | | | | | | AMJ | | | | | |
	1	2	3	4	# per leader level	% per leader level	1	2	3	4	# per leader level	% per leader level	1	2	3	4	# per leader level	% per leader level
Traits	34	5	4	3	46	15.65	22	6	1	2	31	13.78	6	3	12	39	60	22.81
Behavior	95	11	13	8	127	43.20	34	11	2	5	52	23.11	17	12	5	11	45	17.11
LMX	28	4	1	0	33	11.22	12	3	0	0	15	6.67	13	0	0	0	13	4.94
Transformational	18	7	5	3	33	11.22	40	10	6	12	68	30.22	7	3	2	3	15	5.70
Strategic	1	1	0	4	6	2.04	3	5	0	11	19	8.44	4	4	1	90	99	37.64
Distributed	0	0	0	0	0	0.00	0	2	0	1	3	1.33	0	0	0	0	0	0.00
Other	36	4	7	2	49	16.67	27	4	2	4	37	16.44	17	0	3	11	31	11.79
Total # per DV level	212	32	30	20	294	100.00	138	41	11	35	225	100.00	64	22	23	154	263	100.00
% per DV level	72.11	10.88	10.20	6.80	100.00	–	61.33	18.22	4.89	15.56	100.00	–	24.33	8.37	8.75	58.56	100.00	–

Note: 1 = individual level, 2 = team level, 3 = unit level, 4 = organizational level. "Other" includes studies which do not fit into the six leadership approaches examined here.

happens in the middle place – the location where upper-level initiatives are transformed into unit-level programs which shape front line leadership (Balogun & Johnson, 2004; Floyd & Wooldridge, 1992; Westley, 1990). Over the past twenty-five years in 11 top journals, we found only 84 empirical examinations of clearly identifiable mid-level leadership, compared to 399 on top and 194 on lower-level leadership.

Research Question 2: To what extent has leadership science investigated the effects of leadership on outcomes residing at the individual, team, unit, and organizational levels?

The empirical science of leadership sheds the most light on how leadership affects individuals. The next most studied level of analysis is the organization. A small minority of empirical research links leadership to phenomenon occurring at the team and unit levels of analysis. There does seem to be an increase in the examination of team and unit-level effects of leadership in the late 1990's and into the twentieth century.

Another notable pattern is the location of where these investigations are being published. The journal producing the greatest number of studies linking leadership to individual outcomes is the *Journal of Applied Psychology* (*JAP*). *Leadership Quarterly* (*LQ*) published the most research linking leadership to team-level outcomes. The *Journal of Applied Psychology* also published the most research on leadership effects on unit-level outcomes. *Strategic Management Journal* (*SMJ*) published the most research on organization-level outcomes. There are differences in the readerships of these three journals, particularly between *SMJ* and the other two (*JAP* and *LQ*).

Research Question 3: To what extent has leadership science within each of the six theoretical approaches/orientations investigated leadership processes at the top, middle, and lower organizational levels?

A third question of interest was to examine research on top-, middle-, and lower-level leadership within some of the more dominant theoretical approaches to thinking about leadership. We compared trait, behavior, LMX, transformational, strategy, and shared leadership research. It is clear that researchers studying LMX and strategy each have unique organizational-level preferences for their studies. LMX researchers tend to study the lowest level while strategic leadership researchers study the top organizational level. Although the other four approaches have a more even mix of examinations focused at the top and lower organizational levels, none of the six approaches pay much attention to middle-level leaders.

In addition, we found many studies that did not provide enough description to even infer which organizational level was being targeted. This is another indicator that researchers do not pay enough attention to organizational levels when they examine leadership. For future studies, it is necessary to consider organizational-level effects in order to fully grasp leadership phenomena.

Research Question 4: To what extent has leadership science within each of these six theoretical approaches/orientations investigated the effects of leadership on outcomes residing at the individual, team, unit, and organizational levels?

The six leadership approaches all differ in the extent to which empirical research has used them as the framework and linked leadership to individual, team, unit, and organization-level outcome constructs. Strategic leadership research comprises the overwhelming majority of organization-level outcome research. Leader behavior and "other" approaches were the most utilized for individual-level research. Team-level research examined leader behavior, transformational leadership, and strategic leadership about equally. Unit-level research was most likely to be linked to leader behavior.

If we compare the six approaches, we can see that traits, behaviors, LMX relationships, and transformational behaviors are all most often linked to individual-level outcome criteria. Far less research attention has been paid to the effects of these aspects of leadership on higher-level outcomes. Many bottom-up emergent constructs such as climate, efficacy, cohesion, and coordination are thought to be affected by leadership, yet, the findings of our review show that the overwhelming majority of findings regarding leader traits, leader behaviors, leader–subordinate relationship quality, and transformational leader behavior speak to the effects of these leadership constructs on phenomenon residing no higher than the individual level. This represents an obvious need for future research attention.

Conversely, strategic management research has been mostly directed at organizational-level outcomes. Although this outcome space is clearly the most critical and theoretically-well aligned with the idea of strategic management, it is also necessary to understand *how* these strategic leadership processes come to impact important organizational performance metrics. It is likely that many of the mechanisms manifest at lower levels of analysis through top-down organizational dynamics (Kozlowski & Klein, 2000). This represents another important theory building and testing opportunity for future research.

Four critical needs: The next quarter century of leadership science

Taken together, these findings illuminate four targeted recommendations for the future of leadership research.

#1: Empirically examine leadership in the middle place

One promising theoretical framework for thinking about leadership in the middle place is multiteam systems theory (DeChurch & Mathieu, 2009). Multiteam systems are a level of analysis intermediate to the team and organization, comprised of multiple interdependent teams. The system component teams work towards bottom-level proximal goals and are led by bottom-

level team leaders, and the system is then directed and coordinated by middle-level leaders who are directly responsible for more distal system-level goals (Davison & Hollenbeck, in press; DeChurch & Marks, 2006). Zaccaro and DeChurch (in press) develop a framework for thinking about complex configurations of leadership in multiteam systems. Balogun and Johnson (2004)'s research on middle manager sense-making is another valuable theoretical backdrop for understand the leadership demands presented to mid-level leaders.

Prior works identify "middles" as key linking mechanisms for strategy and operations in organizations. Middles represent a unique type of leader; their effectiveness hinges on both upward and downward influence (Floyd & Wooldridge, 1992). In comparison to top-level leaders, middles are closer to firm operations. This position makes them critical in carrying out strategy (downward influence), but also affords unique information and perspectives useful to a firm in adapting strategy in response to operational needs and environmental demands and opportunities (upward influence).

An important consideration for leadership research going forward is the general trend toward flatter and less centralized organizations (Ahuja & Carley, 1999), but which are increasingly connected through virtual interactions among formal organizational members as well as informal parties (e.g., crowd sourcing; Howe, 2008). These new virtual organizational forms will indeed require extensive leadership to carry out traditional functional leadership needs such as strategy and operational management. The new mandate for leadership science is to understand how these functions are carried out by multiple leaders whose roles are not neatly delineated by virtue of their position in the top, middle, and bottom of the organization. Organizational members will need to shift leadership roles and responsibilities over time. Note that the focus of leadership may be shifted to understanding the behavior of organizational members as a whole, rather than on understanding the behavior of particular people. This more networked-view of organizational leadership invokes leadership as meeting system-level needs by enacting functional leadership upward, downward, and laterally, both towards directing behavior within the organization and managing the increasingly permeable boundary of the organization with closely linked external constituents, and shifting the leadership structure over time (Zaccaro & DeChurch, in press).

#2: Model outcomes of leadership at the team and unit levels of analysis

Much more research attention is needed to explain the specific ways in which leadership affects emergent team and unit-level phenomenon. Zaccaro et al. (2001) suggest that leaders shape four types of outcomes: cognitive, motivational, affective, and behavioral. In fact, Burke et al. (2006) meta-analyzed research on team leadership and did not find enough estimates of the relationship between team leadership and team processes to meaningfully conduct any aggregation of these effects. This is unfortunate since many of the mechanisms proposed in, for example, transformational leadership theory, explicitly argues that leaders have powerful effects through their motivational effects on *groups* of followers. Leaders have been long believed to shape important aspects of psychological climate (Edmondson, 1999), group cohesion (Bass, Avolio, Jung, & Berson, 2003), team cognition (Marks, Zaccaro, & Mathieu, 2000), and other collective constructions, but little research has been paid attention to empirically demonstrating these linkages.

The next era of leadership science would be well-served to test these linkages paying particular attention to the boundary conditions under which particular aspects of team leadership affect specific mechanisms. We point leadership scholars toward the phenomenon of emergence (Kozlowski & Klein, 2000), and submit that significant conceptual advancement in leadership research will first require more complex thinking about how leadership gives rise to social-psychological processes manifest at the team, unit, system and organizational level of analysis.

From a levels perspective, there is a critical need for more research detailing the effects of leaders at different levels on emergent phenomenon at different levels of abstraction. We also note that beyond the levels issues, criterion issues represent another key aspect of the science which stands to benefit from a transition. Hiller, DeChurch, Murase, and Doty (in press) present a framework for thinking about criterion issues in leadership science.

#3: Examine trait/behavior/LMX/transformational leadership effects on bottom-up emergent constructs

Although leadership research, broadly defined, is in need of a greater emphasis on the effects of leadership on higher-than-individual-level effects, four theoretical areas are in particular need of these explorations. Trait theory demonstrates how particular characteristics of leaders matter – research is needed that links leader traits to team and unit-level processes. For example, a fruitful direction for future research is to examine the fit between the leader and his/her team of subordinates' personality characteristics.

Likewise, in the behavioral tradition, it would be valuable to understand how specific leader behaviors affect specific team and unit-level processes. Leader behavior research identifies a wide swath of needed behaviors ranging from initiating structure and consideration (Yammarino, 1990; Judge et al., 2004) to strategy development (Zaccaro et al., 2001), boundary spanning (Faraj & Yan, 2009), and coordinating behavior (Marks et al., 2001). Meta-analytic work by Judge et al. (2004) notes that leader consideration has a greater effect on group goals than does initiating structure. We submit that this line of thinking needs to be greatly expanded in order to build a more complete knowledge of how behaviors affect collective functioning. For example, leader sense-making may give rise to functional team cognitive architecture (Murase et al., in press). Additionally, the developmental model of team leadership of Kozlowski, Gully, McHugh, Salas, and Cannon-Bowers (1996) and Kozlowski and Ilgen (2006) proposes differential behavior-state impacts in teams at different phases of the team lifecycle. Future research and model building is needed that details the effects of specific leader behaviors on specific constructs over time.

LMX research would similarly benefit from exploring the effects of patterns of LMX relationships on group and unit-level outcomes (Nishii & Mayer, 2009). Most research on LMX is focused at the individual level – examining the relationship between the quality of the leader-subordinate relationship on subordinate outcomes. Interesting new work (Van Breukelen, Knost, & Van Der Vlist, 2002; Henderson, Liden, Glibkowski, & Chaudhry, 2009) posits that LMX is meaningful above the dyadic level of analysis, in particular, that the pattern of differentiation of LMX relationships within the group affects group functioning and performance. This also raises the interesting possibility of contrast effects within units comprised of leaders with similar versus different patterns of within group differentiation.

Furthermore, LMX has been primarily investigated in lower-level organizational leaders. To what extent are the effects of LMX, and LMX differentiation, dependent on the leader's level in the organization? Three particularly interesting points of comparison are bottom-level leaders, middle managers, and top-level leadership teams.

Lastly, transformational research is a particularly promising approach to understanding leadership in teams and units. The dimensions of transformational leadership behavior seem particularly potent drivers of team-level emergent states and processes. Behaviors such as idealized influence and inspirational motivation ought to have effects on the formation of positive team and unit-level properties such as cohesion, identity, and efficacy.

A related question is to what extent the match in transformational leadership styles enacted from multiple levels of the organization matters. Although leadership research tends to isolate and study leadership at a particular level of the organization, the reality of organizational leadership is that leadership is being simultaneously enacted by leaders at multiple levels within the organization. Top-, middle-, and bottom-level leaders are actively engaged in motivating and shaping behavior – to what extent are contrast effects and incongruencies when comparing transformational behaviors of the leaders throughout an organization impactful to organizational outcomes. Is it enough to have strong transformational leadership at the top, or in contrast, at the bottom? Conversely, is it the overall pattern of transformational leadership displayed by the totality of an organization's leaders that ultimately determines organizational productivity? These questions focusing on multiple levels of leadership represent a particularly exciting new orientation for leadership research going forward.

#4: Examine strategic leadership effects at lower levels

Strategic leadership is the lens through which most effects of leadership on organizational outcomes are understood. In examining the level of analysis of these studies, the overwhelming majority are examining only single-level relationships, linking top-level leadership to organizational outcomes. A valuable direction in this area is to develop rich theories on the top-down mechanisms through which top-level leaders ultimately impact their organizations. An exemplar of this type of theorizing is Waldman and Yammarino's (1999) detailed conceptualization of the effects of CEO charisma at various organizational levels. It seems logical that top leaders engage in behaviors that inspire and shape behavior at multiple levels, in different ways, throughout organizational strata.

Limitations

The current review was designed to provide a macro view of the best quality empirical record on leadership in the organizational sciences. Our hope was to utilize these findings to develop a grounded springboard for future leadership research that expands knowledge on leadership originating from and impacting upon processes at different organizational strata. This type of review is not without its limitations. First, we focused on leadership research published in eleven journals. There is certainly high quality empirical research that is not included in the current sample, and so these conclusions need to be used to draw broad rather than particular conclusions about overall tendencies. For example, these findings are not intended to indicate that certain areas have not been studied, as this would have required including and coding every study of leadership conducted.

A second limitation stems from the decision to categorize leadership into these six approaches. We selected these six as representing different foci within leadership research and being most heavily studied, though the reader needs to be cautioned that there are likely overlaps in the six we chose, and this categorization does not include detailed analysis of newer approaches to leadership such as complexity leadership or authentic leadership which are also promising avenues for future research (Uhl-Bien, Marion, & McKelvey, 2007; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008). In addition, there are also other meaningful areas of inquiry within leadership research that were included in the overall analysis, but where we did not conduct sub-analyses by levels.

A third limitation is that these findings should not be used to make inferences regarding the relative validity of any approaches to leadership, of leadership research at any particular level of analysis, or of leadership research in general. Our review provides information about the extent to which leadership research has examined particular issues related to organizational levels of analysis. We do not make conclusions regarding the efficacy of findings at various levels, nor did we examine whether the existing research appropriately aggregated and theorized about levels of analysis in leadership (see Yammarino et al., 2005 for a detailed analysis).

A final limitation stems from our decision-making regarding inclusion of studies. In this review we included only those studies which examined an outcome of leadership, and did not include studies that had a leadership variable as the criterion; for example, we did not include studies examining predictors of transformational leadership or LMX where there was no "outcome" of transformational leadership or LMX. Thus our conclusions should not be interpreted as being indicative of all studies which included a leadership variable. On the other hand, our study is unique in that it included the strategic management literature.

Often, studies examining those in top management positions and their effects on units or organizations are not given significant attention in the mainstream leadership literature, but we argue that consideration of these studies is critical to understanding leadership effects at various hierarchical levels and across outcome levels. By explicitly considering level of leader and level of analysis of leadership effects, we are able to see opportunities for cross-pollination and missing links in coming to a richer understanding of the complex phenomena of leadership and its effects.

Conclusions

Looking back over the empirical record of leadership reveals that much work has been done toward understanding leadership phenomena. The sheer volume of attention across these 11 journals spanning 25 years clearly speaks to the central importance ascribed to the topic of leadership within organizational science. It is our hope that this review will spawn a greater emphasis on developing an integrated and complex science of leadership built on three foundational ideas: (1) leadership processes may differ across levels of the organization, and these differences need to be explicitly conceptualized and studied, (2) leadership has bottom-up and top-down effects on a variety of constructs at various levels of analysis throughout the organization- and -also has effects on the alliances linking constituencies of multiple organizations to one another- and all of these effects need to be conceptualized and studied, and (3) leadership processes enacted from and impacting upon outcomes at various levels of the organization interact with one another, and together form a complex arrangement of leadership dynamics whose totality ultimately determines organizational effectiveness.

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