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PARADOXICAL LEADERSHIP AND INNOVATION IN WORK TEAMS: THE MULTILEVEL MEDIATING ROLE OF AMBIDEXTERITY AND LEADER VISION AS A BOUNDARY CONDITION

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In light of ever-increasing demands for innovation in work teams, we recommend paradoxical leadership to manage team and individual innovation. Integrating the paradox perspective and ambidexterity theory, we propose a multilevel model of how and when team leaders' paradoxical leadership enhances team and individual innovative outcomes. We conducted two multi-wave, multisource field studies and one online survey study with a cross-lagged panel design. Our findings show that paradoxical leadership has a positive indirect effect on team members' individual innovation through individual ambidexterity and a positive indirect relationship with team innovation through team ambidexterity. Our results further show that leader vision strengthens the effects of paradoxical leadership on team and individual ambidexterity and innovative outcomes. We discuss the theoretical and practical implications of these findings.

> Innovation has nothing to do with how many R&D dollars you have … It's about the people you have, how you're led, and how much you get it.
>
> —Steve Jobs (qtd. in Kirkpatrick, 1998)

Innovation—the introduction and application of new ideas, processes, products, services, or procedures (West & Farr, 1990)—has become crucial for the competitiveness and survival of organizations, more than ever before (Anderson, Potočnik, & Zhou, 2014; Kahn, 2018). The rising uncertainty and complexity of today's business environment require individuals and teams throughout the organization to innovate increasingly (Ilgen, Hollenbeck, Johnson, & Jundt, 2005; van Knippenberg, 2017). Thus, the question of how to promote team and individual innovation has occupied scholars and practitioners alike. Researchers pursuing this line of inquiry have identified leadership as one of the most influential factors (Hughes, Lee, Tian, Newman, & Legood, 2018; Hunter & Cushenbery, 2011; Mumford, Scott, Gaddis, & Strange, 2002). As noted by Anderson et al. (2014: 1321), "effective leadership for innovation is paramount."

Despite these valuable insights, our understanding of the relation between leadership and innovation remains far from complete. It has been increasingly recognized that innovation inherently involves paradoxical tensions. For instance, innovation requires both the extensive development of original ideas and the realization of such ideas within constraints (e.g., Hunter, Cushenbery, & Jayne, 2017); both out-of-the-box thinking and convergent thinking (e.g., Miron-Spektor & Erez, 2017); both flexibility and discipline (e.g., Andriopoulos & Lewis, 2009); and both knowledge generation and knowledge integration (e.g., Gebert, Boerner, & Kearney, 2010). These competing demands imply that "leading for

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innovation" involves unique challenges and considerations (Miron-Spektor, Erez, & Naveh, 2011; Rosing, Frese, & Bausch, 2011). Unfortunately, very few studies on leadership and innovation have considered the paradoxical tensions in the innovation process (Thayer, Petruzzelli, & McClurg, 2018; Zacher & Rosing, 2015).

In the present research, we draw upon the paradox perspective and suggest the role of paradoxical leadership in promoting innovation in work teams. The paradox perspective (Lewis, 2000; Smith & Lewis, 2011) outlines the features of organizational paradoxes (i.e., contradictory yet interrelated elements) and notes that leaders who accept and transcend paradoxes will harness new potential. *Paradoxical leadership* refers to leaders' "seemingly competing, yet interrelated, behaviors to meet structural and follower demands simultaneously and over time" (Zhang, Waldman, Han, & Li, 2015: 538). Specifically, paradoxical leadership entails taking a dynamic "both–and" approach to address underlying tensions in work teams concerning *control versus flexibility* and *collective versus individual* (Smith, Lewis, & Tushman, 2016; Waldman & Bowen, 2016)—for example, by treating followers equally and consistently while also considering individual needs and occasionally making exceptions. Building on the paradox perspective, we argue that paradoxical leadership could facilitate complementary processes to reconcile the competing elements inherent in innovation, thereby promoting innovative outcomes.

We further integrate ambidexterity theory (Bledow, Frese, Anderson, Erez, & Farr, 2009; see also Anderson et al., 2014) with the paradox perspective to illustrate the mechanisms by which paradoxical leadership affects innovative outcomes in work teams. Ambidexterity theory offers a valid account of innovation based on recognizing its paradoxical demands. The theory suggests that, to manage underlying tensions in the innovation process, a critical role of leadership is to stimulate both exploratory and exploitative activities and facilitate their effective integration—namely, ambidexterity. As Anderson et al. (2014: 1302) has suggested, ambidexterity theory holds high potential for understanding the mechanisms of "leadership effects in innovation processes."

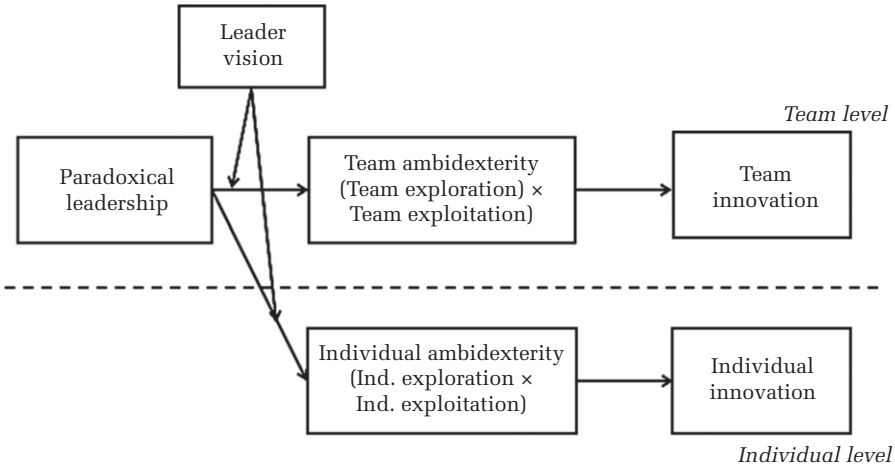
To fully understand leading for innovation in work teams, we have developed a two-level model of how paradoxical leadership affects innovative outcomes at both individual and team levels. In work teams, leaders naturally influence innovative performance through multilevel processes: on the one hand, they interact with members on a dyadic basis, expecting members to meet the demands of innovation, and acting as role models for how to do so; on the other hand, they create a motivational climate to foster collective innovative outcomes for the whole team (Bass & Stogdill, 1990; Hunter & Cushenbery, 2011; Rosing et al., 2011). Ambidexterity theory further holds that developing ambidexterity is vital to promoting innovation at both individual and team levels (Bledow et al., 2009; Rosing et al., 2011). Accordingly, we propose individual and team ambidexterity as the mediating mechanisms linking paradoxical leadership to individual and team innovation, respectively.

Though this possibility is not explicitly discussed in the literature, leaders adopting paradoxical leadership may send seemingly contradictory signals to team members. We posit that a critical condition of our theorizing is that whether members can sense the rationale underlying paradoxical leadership behaviors. Research on paradox suggests that a clear guiding vision is crucial to helping people understand and manage paradoxes at work (e.g., Lewis, 2000; Lewis, Andriopoulos, & Smith, 2014). Leader vision captures the extent to which leaders communicate a clear future direction for members of a team. A clear vision enables members to "see the big picture" and guides them toward a visionary direction despite uncertainties and apparent contradictions (Lewis et al., 2014; Venus, Johnson, Zhang, Wang, & Lanaj, 2019). Hence, we posit that leader vision will ensure that members can make sense of paradoxical leadership and strengthen its positive influence on ambidexterity and innovation in work teams.

We conducted two multi-wave, multisource field studies and an online survey study with a cross-lagged panel design to test our theoretical model (Figure 1). We confined our theorizing to organizational teams whose main tasks concern providing innovative solutions. Innovation, in the form of new products, services, technologies, and procedures, is not only vital for the team as a whole but also a major performance criterion for individual team members in such contexts (e.g., Gebert et al., 2010; Rosing et al., 2011; West, 2002).

Our research makes significant contributions to the literature on leadership and innovation. We put forth a paradox perspective to study innovation in team contexts, introducing paradoxical leadership to innovation management. To provide a richer understanding of leading for innovation in modern work teams, we explore the mechanisms through

FIGURE 1
Theoretical Model



which paradoxical leadership promotes both individual and team innovation, and further extend our theorizing regarding when it works. Considering the pervasive role of leadership in influencing innovative outcomes (e.g., Hunter & Cushenbery, 2011), this research expands our understanding of how to enhance workplace innovation through leadership practices (Anderson et al., 2014; Hughes et al., 2018).

Our work also contributes to the literature on paradox and ambidexterity. It presents a comprehensive test of ambidexterity theory in the context of work teams tasked with innovative solutions. We investigate the theoretical notions of ambidexterity for both teams and individuals, unpacking the multilevel processes of how leadership behaviors promote innovation. Our work also reveals that paradoxical leadership could promote team and individual ambidexterity, particularly when the leader communicates a clear, consistent vision. By doing so, this research expands the scope of ambidexterity theory by revealing *which* leadership behaviors promote ambidexterity in teams and *when* (Colquitt & Zapata-Phelan, 2007).

THEORY AND HYPOTHESES

In this section, we first review the paradoxical nature of innovation at both individual and team levels, and introduce the role of paradoxical leadership through the paradox perspective. We then integrate the paradox perspective with ambidexterity theory as our theoretical framework, and explain how individual and team ambidexterity bridge the effects of paradoxical leadership on individual and team innovation, respectively. Lastly, we extend our theoretical framework and explain how leader vision serves as a boundary condition for the proposed effects.

Leading for Innovation in Work Teams: Looking Through the Paradox Perspective

In work teams whose main tasks concern providing innovative solutions, both members' individual innovation and team innovation as a whole are essential indicators of performance (Bono & Judge, 2003; Wallace, Butts, Johnson, Stevens, & Smith, 2016). Innovation often originates from individuals. Following prior work (Harari, Reaves, & Viswesvaran, 2016; Scott & Bruce, 1994), we define *individual innovation* as the extent to which an individual employee generates and implements useful new ideas at work. Team members try out novel ideas individually for some tasks and collaborate to innovate as a team for others (Perry-Smith & Mannucci, 2017; West, 2002). We define *team innovation* as the extent to which a team, as a whole, develops useful new ideas and converts them into outputs (Drach-Zahavy & Somech, 2001). Team innovation takes diverse forms in the workplace, such as delivering new services, generating novel products or product functions, and developing new technologies (Lahiri, 2010; Schippers, West, & Dawson, 2015).

Essentially, innovation consists of two distinct components: idea generation and idea implementation. Idea generation requires thinking outside the box and a constant search for new possibilities; in

contrast, idea implementation requires outcome- and efficiency-oriented idea realization (Rosing et al., 2011; West & Farr, 1990). Thus, innovation involves paradoxical demands inherently (Bledow et al., 2009; Thayer et al., 2018). As innovation scholars have cautioned, the same conditions facilitating the creation of novel ideas often impede their application, and vice versa (e.g., Hargadon & Douglas, 2001; Miron-Spektor, Erez, & Naveh, 2004). In teams charged with innovative tasks, the same set of members must provide innovative solutions within constraints such as tight deadlines and limited resources (Acar, Tarakci, & van Knippenberg, 2019). As such, the generation and implementation of ideas often proceed hand in hand throughout the innovation process in an interwoven, ever-changing manner (King, 1992; Thayer et al., 2018; Van de Ven, 1986), making paradoxical demands inevitable (Miron-Spektor et al., 2011). Thus, we draw on the paradox perspective to identify leadership behaviors and mechanisms predicting innovation in work teams.

Given an increasing recognition that organizational members encounter challenges from various paradoxes constantly nowadays (e.g., Eisenhardt, Furr, & Bingham, 2010), the paradox perspective holds that the key to sustained effectiveness is embracing rather than choosing between the two poles of these paradoxes (Lewis, 2000; Smith & Lewis, 2011). Accordingly, a vital role of leadership is "to support opposing forces and harness the constant tensions" (Smith & Lewis, 2011: 386). The paradox literature has consistently delineated two common paradoxes for leaders managing work teams: maintaining control versus ensuring flexibility (i.e., the "organizing paradox") and emphasizing the collective (team) versus stressing the individual (i.e., the "belonging paradox") (Lewis, 2000; Quinn & Rohrbaugh, 1983; Smith & Lewis, 2011). These two paradoxes are interrelated, substantial issues for leaders in teamwork.

Zhang et al. (2015) derived the concept of paradoxical leadership describing leader behaviors addressing these paradoxes. Paradoxical leadership consists of five behavioral dimensions, each representing a pair of both–and leadership behaviors: (a) enforcing work requirements while allowing flexibility; (b) maintaining decision control while allowing autonomy; (c) treating members equitably while considering individuality; (d) ensuring self as the source of leadership while sharing the locus of influence with members; and (e) maintaining both hierarchical distance and interpersonal closeness with members. The first two dimensions correspond to the paradox of control versus flexibility—the *organizing paradox*—while the latter three pertain to the paradox of the collective versus the individual—the *belonging paradox*. Following the literature, we refer to those who are high in paradoxical leadership as "paradoxical leaders" (e.g., Shao, Nijstad, & Täuber, 2019; Zhang et al., 2015).

Paradoxical leadership entails taking a both–and approach to competing demands at work, in contrast to an "either–or" approach (the traditional contingency approach of adopting different leader behaviors depending on the situation; Waldman & Bowen, 2016). Paradoxical leaders may integrate or iterate both sides of these both–and leadership behaviors dynamically over time (Smith et al., 2016; Zhang et al., 2015). For instance, a paradoxical leader may assign tasks according to members' interests while concurrently ensuring collaboration based on complementarities among their skill sets. Likewise, when facing uncertainties regarding the expected outputs of new projects, a paradoxical leader may first set challenging goals to press members to perform beyond expectations and then provide them with additional support or even loosen goal requirements if necessary. In this vein, paradoxical leaders may exhibit these both–and behaviors in addressing organizing and belonging paradoxes in simultaneous, serial, or iterative patterns (Waldman & Bowen, 2016; Zhang & Han, 2019). The more frequently leaders *integrate* these contradictory yet interrelated leadership behaviors, the higher their level of paradoxical leadership (Smith & Lewis, 2011; Waldman & Bowen, 2016).

Building on the paradox perspective, we expect paradoxical leadership to promote innovative outcomes in work teams. In managing the organizing paradox, paradoxical leaders grant team members the flexibility to stimulate divergent insights while also maintaining control to ensure high-quality outputs; in addressing the belonging paradox, they allow for members' individuality to express their original ideas while also ensuring a sense of collectivism to foster effective collaboration (Waldman & Bowen, 2016; Zhang et al., 2015). These behaviors could facilitate complementary processes to reconcile competing demands in the innovation process. However, while the paradox perspective implies the beneficial effect of paradoxical leadership on innovation, it does not explicate the underlying mechanisms. We further integrate the paradox perspective with ambidexterity theory to explain the mechanisms.

The Multilevel Mediating Role of Ambidexterity

Ambidexterity theory (Bledow et al., 2009) shares theoretical roots with the paradox perspective as

they both highlight that, to facilitate innovative outcomes, it is essential to manage the paradoxical demands resulting from the dual requirements of idea generation and idea implementation. Adding specificities to the paradox perspective, ambidexterity theory holds that ambidexterity is a primary underlying process to enhance innovation (Bledow et al., 2009; Bledow, Frese, & Mueller, 2011). It further underlines the important role of leadership in promoting ambidexterity for teams and individuals. In particular, it suggests that leaders who integrate seemingly competing but in practice complementary leadership behaviors (such as paradoxical leadership) could fine tune divergent activities to facilitate the ambidextrous process to enhance innovation (Bledow et al., 2011; Rosing et al., 2011).

Ambidexterity literally means "using both hands equally well." In organizational research, it connotes managing *both* exploration *and* exploitation successfully (Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2004). Originally proposed by March (1991) as two key forms of organizational learning, *exploration* denotes activities of discovering, experimenting, increasing variance, and searching for alternatives, while *exploitation* pertains to activities of refining, executing, reducing variance, and recombining existing knowledge and abilities (Benner & Tushman, 2003; Kostopoulos & Bozionelos, 2011). Scholars have recently recognized that individuals and teams are increasingly facing demands to pursue both exploration and exploitation, for example, searching for new possibilities for products, services, or markets while serving existing customers with existing services or products (e.g., Jansen, Kostopoulos, Mihalache, & Papalexandris, 2016; Tempelaar & Rosenkranz, 2019). This involves the paradoxical tension between capitalizing on existing capabilities and developing new ones (Lewis, 2000; Smith & Lewis, 2011).

Employing a both–and logic, ambidexterity theory holds that the successful integration of exploration and exploitation develops ambidexterity and yields synergies to benefit innovation (Bledow et al., 2009). Exploration leads to alternative ideas and methods that might be exploited and refined later, and exploitation ensures the availability of transferable knowledge and practical know-how as essential resources for further exploratory attempts (Bledow et al., 2011; Rosing et al., 2011). As such, exploratory and exploitative activities are not contradictory but functionally interdependent (Bledow et al., 2009), non-substitutable (Gibson & Birkinshaw, 2004), and synergistic (Smith & Lewis, 2011) in their effects on innovation.

Notably, while the notion of ambidexterity originates from the organizational level, ambidexterity theory expands its tenets to the individual and team levels (Bledow et al., 2009; Rosing et al., 2011). Following the literature (Kauppila & Tempelaar, 2016; Mom, Van Den Bosch, & Volberda, 2009), we define *individual ambidexterity* as the extent to which individual employees value and pursue *both* exploitative *and* exploratory activities in their work roles. Highly ambidextrous employees integrate outcome- and efficiency-oriented efforts with their endeavors to develop new capabilities (Birkinshaw & Gibson, 2004). For instance, an information technology consultant shows high ambidexterity when not only exploiting acquired skills to solve immediate problems for clients (exploitation) but also exploring advanced artificial intelligence techniques to tackle emerging needs (exploration). In contrast, employees with low ambidexterity are prone to be deficient in either exploitation or exploration, or even both (Good & Michel, 2013). We then define *team ambidexterity* as the extent to which teams as a whole emphasize and engage in *both* exploration *and* exploitation over time (Jørgensen & Becker, 2017; Nemanich & Vera, 2009). For example, marketing service teams realize high team ambidexterity when continually refining their existing capabilities to produce regular marketing solutions (exploitation) for clients and, meanwhile, following updated technologies and seeking new possibilities to address clients' dynamic needs (exploration).

Paradoxical leadership and individual or team ambidexterity. Paradoxical leadership is characterized as integrating seemingly contradictory yet interrelated leadership behaviors to address paradoxes of organizing and belonging dynamically (Waldman & Bowen, 2016). Building on the paradox perspective, Zhang et al. (2015) theorized two main pathways by which paradoxical leaders influence work outcomes: (a) through passing on role expectations to members and offering them role models of how to address competing work demands at the individual level; and (b) through creating a simultaneously autonomous and structured work atmosphere at the collective (team) level. We argue that paradoxical leadership contributes to individual and team ambidexterity based on these two theoretical routes respectively.

We first expect paradoxical leadership to facilitate team members' individual ambidexterity through delivering divergent role expectations for them. Because leaders are significant figures for employees at work, their role expectations are a powerful force to engage employees in corresponding work

activities (Kahn, 1990, 1992). In addressing the organizing and belonging paradoxes, paradoxical leaders deliver seemingly competing role expectations to team members. On the one hand, they expect members to be flexible and make unique contributions; on the other hand, they anticipate members to be subject to overall control and collective rules and standards (Lewis, 2000; Zhang et al., 2015). Members are then prone to internalize their responsibilities and behavioral protocols accordingly. As expected to keep flexibility and provide original inputs, members are directed to search for alternatives and expand new possibilities; meanwhile, as presumed to adhere to collectivity and control, they tend to feel obligated to refine and exploit existing solutions to ensure efficiency. Thus, rather than a singular focus on either exploration or exploitation stemming from personal preferences, members working with paradoxical leaders are more likely to attend to both.

Further, we argue that paradoxical leaders could serve as role models for members to address the tensions involved in their exploratory and exploitative attempts and find synergistic possibilities. When interacting with paradoxical leaders, members have opportunities to observe how they embrace their salient competing demands (namely, organizing and belonging paradoxes) and learn from their mastery in managing these tensions (Miron-Spektor, Ingram, Keller, Smith, & Lewis, 2018; Zhang et al., 2015). In the process of learning from role models, actors not only emulate the role models' behaviors but may also internalize the models' values and attitudes and transfer what they have acquired into related aspects (Bandura, 1977, 1986). Through such modeling and learning, team members are prone to absorb paradoxical leaders' mindset and problem-solving approach and apply what they have grasped into their own situations. Consequently, they are more likely to confront their tensions between exploration and exploitation proactively, become comfortable with doing so, and adopt a both–and approach to harvest potential synergies.

Hence, with the role expectations and role modeling provided by paradoxical leaders, team members tend to have a greater propensity to embrace the tensions behind the divergent demands of exploration and exploitation, find synergistic possibilities, and flexibly maneuver between them, thereby realizing higher individual ambidexterity (Smith & Lewis, 2011; Tempelaar & Rosenkranz, 2019). Thus, we hypothesize:

Hypothesis 1. Team leaders' paradoxical leadership has a positive relationship to team members' individual ambidexterity.

We further argue that paradoxical leadership, through addressing organizing and belonging paradoxes, may nurture a simultaneously autonomous and structured work atmosphere to enhance team ambidexterity. On the one hand, paradoxical leadership could cultivate an open atmosphere to promote team exploration. Paradoxical leaders tend to grant members autonomy and flexibility in teamwork so that members can realize their potential to the full (Waldman & Bowen, 2016). Paradoxical leaders also recognize members' uniqueness and show respect for their individual specialties (Zhang et al., 2015), thus developing a shared perception that their original inputs are welcomed and needed. As such, paradoxical leadership may encourage all members to challenge established schemas and develop alternatives beyond their comfort zone (Gebert et al., 2010; Srivastava, Bartol, & Locke, 2006), thereby promoting team exploration.

On the other hand, paradoxical leadership could facilitate an organized team atmosphere that favors team exploitation. Paradoxical leaders emphasize establishing high work requirements and maintaining ultimate control to clarify standards and expectations for the team as a whole (Smith et al., 2016; Zhang et al., 2015). They further maintain structural distance to establish role relationships and treat members equitably to ensure team cooperation and cohesion (Shao et al., 2019). Taken together, these leadership behaviors enable the team to fully utilize and integrate members' existing knowledge and abilities for various tasks, thereby benefiting team exploitation (Gebert et al., 2010; Keller, 2006).

Importantly, paradoxical leaders' both–and leadership behaviors in addressing organizing and belonging paradoxes *interdependently* nurture a simultaneously autonomous and structured work atmosphere that facilitates both team exploration and team exploitation. Suppose leaders focus only on fulfilling team members' needs for flexibility and individuality but neglect the organizational demands of control and collectivity. In that case, they may unintentionally allow too much divergence in teamwork and harm collaboration among members. This will inevitably jeopardize exploitation and eventually damage the team's capability for further exploration (Zimmermann, Raisch, & Cardinal, 2018). Conversely, if leaders only emphasize control and collectivity, overlooking team members' individual interests, members may become overly strict "order-keepers" and unwilling to explore, eventually running out of ideas to exploit. Thus, paradoxical leadership behaviors jointly nurture the ambidexterity of a team. This rationale is similar to

Parker's (2014) suggestion that leaders combine control- and flexibility-oriented practices to promote ambidexterity. In sum, we posit:

Hypothesis 2. Team leaders' paradoxical leadership has a positive relationship to team ambidexterity.

The mediating role of individual and team ambidexterity. Ambidexterity theory suggests that individuals with higher levels of ambidexterity tend to generate and also implement new ideas more often, resulting in greater individual innovation (Bledow et al., 2009). Employees high in individual ambidexterity follow a both–and mode to integrate and alternate between exploratory and exploitative activities at work (Mom, Chang, Cholakova, & Jansen, 2019). Exploratory activities, such as searching for alternatives, stimulate the focal actor to generate creative ideas and to apply those ideas into outputs in novel but effective ways. Alternatively, exploitative activities, such as honing efficiency, provide a practical basis for implementing ideas as well as releasing individual resources (such as time, energy, and attention) to be used in developing new ideas (Crossan, Lane, & White, 1999; Good & Michel, 2013). In this respect, such exploratory and exploitative efforts function complementarily for better individual innovative outcomes. Recent empirical evidence has provided initial support for the ambidexterity–innovation relationship at the individual level (e.g., Kobarg, Wollersheim, Welpe, & Spörrle, 2017; Miron-Spektor et al., 2018). For example, Kobarg et al. (2017) found that ambidexterity in junior scholars positively relates to their research performance, such as the development and realization of useful new ideas in the form of research articles.

As we articulated before, paradoxical leaders facilitate team members' individual ambidexterity by passing on divergent role expectations and modeling how to deal with them, and the heightened individual ambidexterity can enhance new idea creation and implementation. Combining these arguments, we suggest that paradoxical leadership spurs individual members to achieve greater ambidexterity, thus improving their innovation at work. In sum, we propose:

Hypothesis 3. Team leaders' paradoxical leadership has a positive relationship to team members' individual innovation through individual ambidexterity.

Similarly, we expect team ambidexterity, through integrating exploratory and exploitative activities at the team level, to enhance team innovation. For idea generation, team exploration works as the "engine," so to speak, and team exploitation serves as a supporting system to that engine. Specifically, a team's exploratory activities produce alternative perspectives to fuel the generation of creative ideas. Meanwhile, a team's exploitative activities could enhance efficiency and in turn release cognitive resources for coming up with novel ideas (Bledow et al., 2009). These roles of exploratory and exploitative activities are inverted in idea implementation. That is, a team's exploitative activities facilitate refining capabilities for converting new ideas into outputs. Additionally, alternative perspectives introduced by exploratory activities help upgrade existing knowledge and capabilities to benefit the implementation of creative ideas as well (Bledow et al., 2011; Rosing et al., 2011).

In this way, team exploitative and exploratory activities iterate between one another, jointly contributing to team innovation. Taking these arguments together with Hypothesis 2, we suggest that, for teams as a whole, paradoxical leadership helps build a simultaneously autonomous and structured work atmosphere to promote team ambidexterity, and this heightened team ambidexterity facilitates both the generation and application of novel ideas, ultimately increasing team innovation. Hence, we hypothesize:

Hypothesis 4. Team leaders' paradoxical leadership has a positive relationship to team innovation through team ambidexterity.

The Moderating Role of Leader Vision

Thus far, we have postulated multilevel mechanisms to account for the effects of paradoxical leadership on innovative outcomes in work teams. Yet, we implicitly assume that team members sense the rationale underlying paradoxical leadership's seemingly complex behavioral pattern. This may not always be the case. To hone our theorizing, we posit leader vision as a boundary condition of the proposed relationships. The paradox literature suggests that leaders should consistently transmit a clear vision so that members can see a holistic picture behind competing demands (e.g., Lewis, 2000; Lewis et al., 2014). When there is no such vision, the competing demands might aggravate into chaos.

Following prior work (Griffin, Parker, & Mason, 2010; Stam, Lord, van Knippenberg, & Wisse, 2014), we define *leader vision* as the extent to which team members perceive a clear, overarching direction for their team communicated by their leader. A vision

denotes superordinate goals rather than common goals. It is typically oriented to the long term and depicts a big picture of the future (Austin & Vancouver, 1996; Berson, Halevy, Shamir, & Erez, 2015; Carton & Lucas, 2018). Clear leader vision offers a compelling sense of direction, even in situations characterized by change and uncertainty (Nanus, 1992; Stam et al., 2014). Prior research has investigated different facets of leader vision, including the extent to which leaders promote a shared vision among team members (e.g., Carton, Murphy, & Clark, 2014) and the extent to which leader vision is consistent with the larger organization's vision (e.g., Lewis & Clark, 2020). We focus on the *clarity of leader vision*, as perceived by team members, to tackle the theoretical tenet of the paradox literature: a clear and consistent vision provides a vital direction for followers to navigate competing work demands (Lewis et al., 2014; Pearce, Wassenaar, Berson, & Tuval-Mashiach, 2019).

We first posit that leader vision strengthens the impact of paradoxical leadership on members' individual ambidexterity and innovation. Research shows that people have a general preference for consistency and predictability (e.g., Cialdini, Trost, & Newsom, 1995; Heider, 1958) and often feel anxious and distressed when presented with contradictory information (Lüscher & Lewis, 2008; Vince & Broussine, 1996). When confronted by paradoxical leadership, team members may struggle to interpret the complex behaviors. With a clear vision as the underlying rationale, however, members would find these behaviors easier to understand and follow. Thus, it is more comfortable for them to legitimize, accept, and integrate the divergent role expectations from paradoxical leaders and to engage in their expected activities related to exploration and exploitation. Further, members are more likely to model themselves on and thus learn from paradoxical leaders when they can see a clear direction provided (Shamir, House, & Arthur, 1993; Zhang et al., 2015). Consequentially, members are better able to find ways to maneuver flexibly between exploratory and exploitative activities, thereby realizing higher individual ambidexterity and enhancing their innovation at work.

Conversely, without a clear vision, a sense of vagueness may prevent members from understanding the behaviors of paradoxical leaders or modeling their actions on their leaders. Delivering paradoxical expectations without first ensuring a clear view of the road ahead might leave team members unable to interpret the rationale behind paradoxical leadership behaviors (Pearce et al., 2019). Members are then less likely to accept the tensions between exploration and exploitation and less able to find synergistic possibilities under paradoxical leaders. In sum, we propose that a strong leader vision will enable team members to enhance their individual ambidexterity and innovation at work under paradoxical leadership. We hypothesize:

Hypothesis 5a. Leader vision moderates the positive relationship between paradoxical leadership and team members' individual ambidexterity, such that the relationship is stronger under strong (vs. weak) leader vision.

Hypothesis 5b. Leader vision moderates the positive relationship between paradoxical leadership and team members' individual innovation through individual ambidexterity, such that the indirect relationship is stronger under strong (vs. weak) leader vision.

We further predict that leader vision will reinforce the relationship between paradoxical leadership and the whole team's ambidexterity and innovation. While paradoxical leadership embraces the potential to build a simultaneously open and organized team environment, it may sometimes inadvertently cause divergence and ambiguity. A clear, consistent leader vision tends to overcome this possibility by offering a forward-looking anchor to guide the team (Mumford et al., 2002; Venus, Stam, & van Knippenberg, 2019). It enables members under paradoxical leaders to feel more at ease working in the both autonomous and structured atmosphere, given a strong sense of direction. Consequently, these members are better able to collaborate actively to develop team ambidexterity.

In contrast, without a strong vision, leaders may fail to harness the positive influence of paradoxical leadership. If leaders dynamically alternate between providing flexibility and emphasizing control without communicating the underlying rationale, this apparent lack of consistency may create uncertainty for the team or even result in unexpected chaos (Lewis et al., 2014). Even worse, the whole team may lose sight of where it is going and feel disoriented in the both autonomous and structured team environment under paradoxical leaders, and consequentially fail to capitalize on the benefits of paradoxical leadership for team ambidexterity and innovation. In sum, we propose:

Hypothesis 6a. Leader vision moderates the positive relationship between paradoxical leadership and team ambidexterity, such that the relationship is stronger under strong (vs. weak) leader vision.

Hypothesis 6b. Leader vision moderates the positive relationship between paradoxical leadership and team innovation through team ambidexterity, such

that the indirect relationship is stronger under strong (vs. weak) leader vision.

OVERVIEW OF STUDIES

To test our hypothesized model, we conducted two field studies with work teams whose main tasks were to provide innovative solutions. We then supplemented these with a survey study among working adults recruited online. Study 1 preliminarily tested the effects of paradoxical leadership on team and individual ambidexterity and innovation. Study 2 investigated the full model, examining the contingency effect of leader vision. We further utilized a survey study with cross-lagged panel design (Study 3) to disentangle the causal directions of paradoxical leadership, individual ambidexterity, and individual innovation.

STUDY 1: FIELD STUDY

Sample and Procedure

We invited seven companies in northern China to participate in Study 1. All of these companies operated in highly volatile industries, including information technology (IT), telecommunications, and medical technology. Before data collection, we asked human resources (HR) managers in the sampled companies to identify teams whose major tasks were to develop innovative solutions, including product and service innovation, technology innovation, and process innovation. The HR managers mainly selected research and development teams (which design and develop new products or services) and technical teams (which build new, practical, and technological solutions for clients). For example, the sampled IT service teams worked on designing, delivering, operating, and maintaining IT services for different types of customers, offering novel solutions to solve emerging problems effectively and efficiently. Each sampled work team consisted of one formal leader and its members. They had specialized knowledge in their products, services, and markets. The HR managers provided us with lists of team leaders and members, based on which we coded and matched questionnaires. The HR managers and staff then helped us distribute envelopes containing questionnaires during work breaks. Each sealed envelope had a removable name tag on the cover. We asked respondents to return their completed questionnaires in the sealed envelopes after tearing off the name tag. On the cover page of the questionnaire, we affirmed that all answers would be confidential, voluntary, and used only for academic research purposes.

We collected data from multiple sources (i.e., team members and team leaders) and at three time points, at intervals of two weeks, to reduce potential biases induced by common methods (Podsakoff, MacKenzie, & Podsakoff, 2012). At Time 1, members rated their team leader's paradoxical leadership and reported demographic information. After two weeks, at Time 2, each member reported their own individual exploration and exploitation and assessed team exploration and exploitation using the reference-shift consensus model of team constructs (Chan, 1998). We also used different scales to capture exploration and exploitation at the team and individual levels. In doing so, we aimed to minimize the likelihood of measurement contamination and common method bias (Chan, 2019; Podsakoff et al., 2012). At Time 3, after another two weeks, leaders rated team innovation and members' individual innovation. We ensured, with HR managers, that these leaders were well placed to assess team and individual innovative outcomes before data collection. These leaders generally played leading, organizing, coordinating, monitoring, and evaluating roles in their teams.

The sample comprised 130 leaders and 760 members. At Time 1, 597 members responded to the survey, resulting in a response rate of 78.55%. At Time 2, we obtained data from 575 members out of the 597 Time 1 responders (response rate = 96.31%). At Time 3, 105 leaders returned their questionnaires (response rate = 80.77%). By including matched data only, we obtained a final sample of 562 members from 105 teams. The total average team response rate was 76.11% and the response rates of all teams were greater than 60%, above the threshold recommended by Timmerman (2005). Among the responding team members, 58.01% were men; their average age was 27.69 (SD = 3.75); average organizational tenure was 2.74 years (SD = 2.64); and 78.65% had a bachelor's degree or above. Among team leaders, 69.52% were men; their mean age was 34.07 (SD = 5.49); average organizational tenure was 5.61 years (SD = 3.58); and 90.48% had a bachelor's degree or above.

Measures

We translated and back-translated measures from English into Chinese following the cross-cultural translation procedure recommended by Brislin (1980).

Paradoxical leadership. Members evaluated the extent to which their team leaders had exhibited

paradoxical leadership in the previous six months. The time scale of six months was long enough to present rich information on leaders' behavioral patterns (Shoda, Mischel, & Wright, 1994). We adopted the 22-item scale from Zhang et al. (2015), which captures the five behavioral dimensions corresponding to managing organizing and belonging paradoxes. The items were rated on a 5-point Likert-type scale (from 0 = *not at all* to 4 = *a lot*). A sample item is "maintained overall control but gives subordinates appropriate autonomy." This type of "dual-sided" measure embraces both sides of competing elements, capturing the core of paradoxical leadership.[1] Higher scores for each item indicated that both sides of the behavior were observed to a larger extent, while lower scores indicated that at least one side of the behavior was observed to a lesser extent (Miron-Spektor et al., 2018; Zhang & Han, 2019).

Cronbach's alpha of the paradoxical leadership scale in this study was .94; the reliabilities of its five dimensions ranged from .82 to .90. Confirmatory factor analyses (CFAs) first revealed that a five-factor model with the five dimensions of items as separate factors fit the data well, χ^2 (199) = 871.55 (CFI = .90; RMSEA = .08; SRMR = .05). We then tested the second-order model in which the five dimensions loaded on one higher-order latent factor of paradoxical leadership. The model showed a good fit with the data, χ^2 (204) = 892.07 (CFI = .90; RMSEA = .08; SRMR = .05), supporting the higher-order underlying construct (Gerbing & Anderson, 1984; Judge, Erez, Bono, & Thoresen, 2002). Given these findings, we then averaged scores across dimensions to form an overall measure of paradoxical leadership for further analyses (Anderson & Gerbing, 1988).

Individual ambidexterity. To measure individual ambidexterity, we first asked each team member to rate their own exploration and exploitation at work. We used the 11-item measure from Mom, Van Den Bosch, and Volberda (2007), which has been further validated by several other studies (e.g., Kauppila & Tempelaar, 2016; Mom et al., 2019). The scale stem was "In the last six months, to what extent did you, *as an individual*, engage in work-related activities that can be characterized as follows … " A sample item for exploration is "evaluated diverse options with respect to products/services, processes, or markets." A sample item for exploitation is "performed activities which were clear to you how to conduct." Items were measured on a 6-point Likert-type scale (1 = *to a very small extent* to 6 = *to a very large extent*). Cronbach's alpha for both scales was .88.

We operationalized individual ambidexterity by multiplying individual exploration and individual exploitation based on the tenet of ambidexterity theory—that is, exploration and exploitation are non-substitutable, interdependent, and synergistic rather than additive to promote innovation (Bledow et al., 2009, 2011). This operationalization is in line with previous studies (e.g., Gibson & Birkinshaw, 2004; Mom et al., 2009). We also replaced this multiplicative model with the additive model of exploration and exploitation and obtained consistent results.

Team ambidexterity. We asked members to assess the extent to which their teams as a whole had engaged in exploratory and exploitative learning activities in the previous six months on two 5-item scales developed by Kostopoulos and Bozionelos (2011). These scales of team exploration and exploitation have been well validated in other studies (e.g., Jansen et al., 2016; Liu & Leitner, 2012). A sample item for team exploration is "In our team, team members evaluated diverse options regarding the course of our team projects." A sample item for team exploitation is "The members of our team recombined existing knowledge for accomplishing work." Items were measured on a 6-point Likert-type scale (1 = *strongly disagree* to 6 = *strongly agree*). The Cronbach's alpha of these two scales was .92 and .86, respectively.

[1] Dual-sided measures have been gradually adopted in paradox research (e.g., Miron-Spektor et al., 2018; Zhang & Han, 2019). To further investigate whether the dual-sided measures we adopted capture the theoretical core of paradoxical leadership, we conducted additional analyses with an independent sample (n = 106; see also Zhang et al., 2015, subsample 2 of sample 3). In this sample, employees rated their direct supervisors with the dual-sided measures of paradoxical leadership and two sets of one-directional items separated from the paradoxical leadership items according to their respective meanings (focusing either on flexibility and individuality or on control and collectivity). We conducted polynomial regression with response surface analysis. Here, we use X and Y to refer to the scores of two sets of one-directional leadership behaviors. The results showed that the response surface is curved downward along the line of $Y = -X$; that is, the more X and Y differ in any direction, the level of paradoxical leadership decreases (Edwards, 2002; Shanock, Baran, Gentry, Pattison, & Heggestad, 2010). Moreover, the ridge of the surface is not flat along the line of $Y = X$ and shows that paradoxical leadership is high only when X and Y are congruent at high levels. In sum, these results show that *only* high levels in both sides of the behaviors indicate highly paradoxical leadership while lower levels in either side indicate less paradoxical leadership. The results provide support for the theoretical essence of paradoxical leadership.

Similar to individual ambidexterity, we used the product term of team exploration and team exploitation to form an overall measure of team ambidexterity that would better capture the theoretical essence of ambidexterity following prior studies (e.g., Nemanich & Vera, 2009). The results using an additive model of team exploration and team exploitation were similar to those obtained using the multiplicative model.

Individual innovation. We asked leaders to assess all team members' individual innovation in the previous six months using the 4-item scale from Welbourne, Johnson, and Erez (1998). The items are "came up with new ideas," "worked to implement new ideas," "found improved ways to do work," and "created better processes and routines." Items were measured on a 6-point Likert-type scale (1 = *never* to 6 = *very often*). Cronbach's alpha was .84.

Team innovation. Leaders rated the innovation of the whole team in the previous six months on the 4-item measure from De Dreu and West (2001), which has been widely used in other similar research settings (e.g., Chen, Farh, Campbell-Bush, Wu, & Wu, 2013; Chi, Huang, & Lin, 2009; De Dreu, 2006). We asked team leaders to indicate their agreement with statements regarding their team on a 6-point scale (1 = *strongly disagree* to 6 = *strongly agree*). A sample item is "Team members often produced new services, methods, or procedures." Cronbach's alpha was .72.

Control variables. We included employee age and education as control variables at the individual level, because more educated employees are more likely to be more capable of generating and implementing new ideas (Chen et al., 2013; Scott & Bruce, 1994) and older employees may have stronger inertia and make less effort to be innovative (Janssen, 2000; Scott & Bruce, 1994). At the team level, we included team size and team member mean tenure as control variables, given their importance in studying team innovation as indicated by the literature (for a review, see Hülsheger, Anderson, & Salgado, 2009). We conducted all the analyses with and without these control variables for a robustness check and obtained consistent results.

Confirmatory Factor Analyses

To ensure a comprehensive test of the multilevel data structure, we conducted multilevel CFAs following procedures recommended by Dyer, Hanges, and Hall (2005). We first performed individual-level CFAs on team exploration, team exploitation, individual exploration, and individual exploitation, given that they were all measured by team members at the same time. The CFA results showed a good fit with the hypothesized four-factor structure, χ^2 (183) = 755.25 (CFI = .91; RMSEA = .08; SRMR = .05). All indicators were significantly loaded on their respective factors. The alternative models were: (a) a two-factor model combining items of team exploration and exploitation and combining items of individual exploration and exploitation; (b) another two-factor model combining items of team and individual exploration into one factor and items of team and individual exploitation into another; and (c) a one-factor model combining all items. All of these alternative models fit the data significantly worse than the original hypothesized model, $\Delta\chi^2$ (5) = 1606.61, $p < .01$; $\Delta\chi^2$ (5) = 1496.09, $p < .01$; $\Delta\chi^2$ (6) = 2390.08, $p < .01$.

These CFA results at the individual level demonstrate the discriminant validity of the core constructs, providing a sufficient basis for examining the multilevel structure of the data (Dyer et al., 2005). We then constructed within- and between-team CFA models comprising these four factors. To avoid model nonconvergence, which is prone to arise in multilevel CFAs, we used item parceling to reduce the number of observed indicators (Nasser & Wisenbaker, 2003). The multilevel CFA of the model with three parceled indicators for each construct showed acceptable fit at both the individual and team levels of analysis, χ^2 (96) = 166.48 (CFI = .98; RMSEA = .04; $SRMR_{between}$ = .07; $SRMR_{within}$ = .04). Thus, we concluded that the factor structure of the measures was consistent at both levels.

Data Aggregation, Levels of Analysis, and Analytic Strategy

Intra-class correlations, ICC1 and ICC2, for all constructs theorized at the team level were acceptable—paradoxical leadership: ICC1 = .43 and ICC2 = .80 ($F = 5.12$, $p < .01$); team exploration: ICC1 = .29 and ICC2 = .68 ($F = 3.17$, $p < .01$); team exploitation: ICC1 = .33 and ICC2 = .73 ($F = 3.67$, $p < .01$). The median values of within-group inter-rater reliabilities (r_{WG}) across teams were .98, .96, and .96, respectively. Based on these results, we aggregated these three variables to the team level (Bliese, 2000).

Given the nested nature of our model, we conducted multilevel path analyses to test our hypotheses using Mplus 8 (Muthén & Muthén, 2017), following prior work (Edwards & Lambert, 2007; Gong, Kim, Lee, & Zhu, 2013). We tested the significance of the proposed indirect effects using the

Monte Carlo method of parametric bootstrapping to compute their confidence intervals (Preacher, Zyphur, & Zhang, 2010).

Results and Discussion

Table 1 presents the means, standard deviations, and bivariate correlations of the variables. The correlation results provided preliminary support for the hypothesized relationships.

We conducted multilevel path analysis by specifying a model that examined the team-level relationship of paradoxical leadership–team ambidexterity–team innovation and the cross-level effect of paradoxical leadership–individual ambidexterity–individual innovation (Edwards & Lambert, 2007). Table 2 shows the path analysis results. Paradoxical leadership was positively related to team ambidexterity ($\gamma = 2.03$, $SE = 0.57$, $p < .01$), supporting Hypothesis 1. The relationship between paradoxical leadership and individual ambidexterity was positive and significant ($\gamma = 1.44$, $SE = 0.45$, $p < .01$), supporting Hypothesis 2.

As Table 2 shows, individual ambidexterity was positively and significantly related to individual innovation ($\gamma = 0.08$, $SE = 0.02$, $p < .01$). Parametric bootstrapping results showed that paradoxical leadership had a significant indirect effect on individual innovation through individual ambidexterity (*indirect effect* = 0.11, 95% CI [0.04, 0.21]). Therefore, Hypothesis 3 was supported. Team ambidexterity was positively related to team innovation ($\gamma = 0.05$, $SE = 0.01$, $p < .01$). Bootstrapping results showed that paradoxical leadership had a significant positive indirect effect on team innovation via team ambidexterity (*indirect effect* = 0.11, 95% CI [0.05, 0.16]). Thus, Hypothesis 4 was also supported. In sum, the results of Study 1 provided support for the proposed mediating effects of paradoxical leadership on innovative outcomes at both the individual and team levels through individual and team ambidexterity.

STUDY 2: FIELD STUDY

In Study 2, we replicated the results of Study 1 and further investigated leader vision as a critical boundary condition of paradoxical leadership's effects. Additionally, we controlled for two other theoretically relevant leadership behaviors—transformational leadership and supportive leadership behavior—to exclude possible alternative explanations.

Sample and Procedures

Study 2 data involved five companies in northern China from the information technology and services, software technology and services, media technology,

TABLE 1
Study 1: Means, Standard Deviations, and Correlations

Variable	Mean	Individual-Level *SD*	Team-Level *SD*	1	2	3	4	5	6	7
Individual level										
1. Age	27.69	3.75		—						
2. Education	3.86	0.57		.28**	—					
3. Individual exploration	4.49	0.80		.01	−.04	(.88)				
4. Individual exploitation	4.56	0.71		.10*	−.07	.44**	(.88)			
5. Individual ambidexterity	20.76	5.74		.06	−.07	.86**	.83**	—		
6. Individual innovation	4.31	0.77		.14**	−.02	.26**	.18**	.26**	(.84)	
Team level										
1. Team size	6.86		4.07	—						
2. Mean team tenure	1.92		1.07	.16	—					
3. Paradoxical leadership	2.68		0.46	.22*	.11	(.94)				
4. Team exploration	4.50		0.56	.07	−.08	.38**	(.92)			
5. Team exploitation	4.59		0.52	.07	.05	.35**	.72**	(.86)		
6. Team ambidexterity	20.93		4.53	.07	−.02	.38**	.93**	.91**	—	
7. Team innovation	4.75		0.56	−.06	.17	.27**	.38**	.48**	.47**	(.72)

Notes: $n = 562$ for individual-level variables; $n = 105$ for team-level variables. Cronbach's alphas are reported in the parentheses on the diagonal. Paradoxical leadership was measured on a 5-point Likert scale (ranging from 0 to 4); individual exploration, individual exploitation, individual innovation, team exploration, team exploitation, and team innovation were measured on 6-point Likert scales (ranging from 1 to 6); individual ambidexterity was calculated by multiplying individual exploration and individual exploitation (ranging from 1 to 36); team ambidexterity was calculated by multiplying team exploration and team exploitation (ranging from 1 to 36).

* $p < .05$

** $p < .01$

TABLE 2
Study 1: Simultaneous Multilevel Path Model Tests and Results

	Team Ambidexterity		Team Innovation		Individual Ambidexterity		Individual Innovation	
Variables	**Estimate**	***SE***	**Estimate**	***SE***	**Estimate**	***SE***	**Estimate**	***SE***
Intercepts	21.16**	0.35	3.60**	0.27	20.76**	0.33	2.64**	0.34
Team level								
Team size	−0.05	0.40	−0.09	0.06	0.89*	0.38	−0.04	0.05
Mean team tenure	−0.30	0.34	0.10	0.05	0.63	0.38	0.02	0.05
Paradoxical leadership	2.03**	0.57	0.07	0.05	1.44**	0.45	0.04	0.05
Team ambidexterity			0.05**	0.01				
Individual level								
Age					0.13	0.20	0.09	0.05
Education					0.21	0.22	−0.01	0.04
Individual ambidexterity							0.08**	0.02

Notes: $n = 562$ for individual-level variables; $n = 105$ for team-level variables. All independent variables were standardized before entering the path model. *SE* refers to standard errors.

* $p < .05$

** $p < .01$

and medical technology industries, all of which involve complex business environments and high innovation requirements. These companies all differ from those sampled in Study 1. We used the same sampling and survey methodology as in Study 1. At Time 1, we distributed questionnaires to 820 team members, and 726 questionnaires were returned (88.54% response rate). At Time 2, 634 of the 726 Time 1 responders returned their questionnaires (87.33% response rate). At Time 3, 94 of 120 leaders returned their questionnaires (78.33% response rate). We included matched data only and the final data set comprised 607 team members working under 93 leaders. The total average team response rate was 74.60%, and the response rates of all teams were above the threshold of 60% (Timmerman, 2005). Team members' average age was 28.52 (SD = 4.27), 41.35% were women, and 70.84% had received a bachelor's degree or above. Team leaders' average age was 35.09 (SD = 4.79), 48.39% were women, and 90.32% had a bachelor's degree or above.

Measures

We used the same measures of paradoxical leadership and individual and team ambidexterity and innovation as in Study 1.

Leader vision. We assessed leader vision with three items adapted from Griffin et al. (2010). Respondents evaluated the extent to which their team leader "creates an exciting and attractive image of where the team is going," "conveys a clear understanding of where the team is heading in the future," and "expresses a clear direction for the future of the team" on a 6-point Likert-type scale (1 = *to a very small extent*, 6 = *to a very large extent*). Cronbach's alpha for this scale was .91.

Controls. In addition to the control variables in Study 1, we controlled for transformational leadership, using a 7-item scale adopted from Carless, Wearing, and Mann (2000), and controlled for supportive leadership behavior, using a 6-item measure from Carmeli, Gelbard, and Gefen (2010). Prior studies have shown that these two types of leadership are positively associated with team ambidexterity and team innovation (Eisenbeiss, van Knippenberg, & Boerner, 2008; Jansen et al., 2016; Krause, 2004; Nemanich & Vera, 2009). Cronbach's alpha for these two scales was .80 and .88, respectively. The model results were virtually the same with and without these control variables. In line with contemporary recommendations, we kept these theoretically relevant control variables in the analyses to increase the rigor and precision of our results (Bernerth & Aguinis, 2016).

Confirmatory Factor Analyses

We conducted multilevel CFAs to examine the multilevel structure of the data regarding member-reported measures of paradoxical leadership, transformational leadership, supportive leadership, leader vision, team exploration, team exploitation, individual exploration, and individual exploitation. The individual-level CFA results showed good fit for the

hypothesized eight-factor structure, χ^2 (791) = 1789.46 (CFI = .93; RMSEA = .05; SRMR = .05). All indicators were significantly loaded onto their respective factors. We also tested alternative factor models and found that they all fit the data significantly worse than the original hypothesized model (further details are available on request).

Given these CFA results, we then constructed within- and between-team CFA models comprising these eight factors (Dyer et al., 2005). To ensure model convergence, the five paradoxical leadership subscales were modeled as five indicators of the latent construct, and the seven other latent variables—transformational leadership, supportive leadership behavior, leader vision, team exploration, team exploitation, individual exploration, and individual exploitation—were each parceled into two indicators. The resulting multilevel CFA model demonstrated an acceptable fit, χ^2 (248) = 440.09 (CFI = .97; RMSEA = .04; $SRMR_{between}$ = .09; $SRMR_{within}$ = .04). In sum, these results provide evidence supporting the factor structure at both the individual and team levels of analysis.

Data Aggregation, Levels of Analysis, and Analytic Strategy

As in Study 1, we first calculated the intra-class correlations of the team-level measures. ICC1 and ICC2 of the constructs were all acceptable—paradoxical leadership: ICC1 = .20 and ICC2 = .63 ($F = 2.67$, $p < .01$); transformational leadership: ICC1 = .17 and ICC2 = .57 ($F = 2.33$, $p < .01$); supportive leadership: ICC1 = .15 and ICC2 = .54 ($F = 2.16$, $p < .01$); leader vision: ICC1 = .21 and ICC2 = .63 ($F = 2.72$, $p < .01$); team exploration: ICC1 = .26 and ICC2 = .69 ($F = 3.27$, $p < .01$); and team exploitation: ICC1 = .19 and ICC2 = .60 ($F = 2.50$, $p < .01$). The median value of r_{WGs} was .98 for paradoxical leadership, .86 for leader vision, .93 for transformational leadership, .92 for supportive leadership behavior, .92 for team exploration, and .93 for team exploitation. Therefore, aggregation of these focal variables to team level was appropriate (Bliese, 2000).

We then conducted multilevel path analyses by specifying a model that was the same as our overall theoretical model and included all the control variables in multiple steps. We used the same analytic strategy as in Study 1 to analyze our data.

Results and Discussion

Table 3 shows the means, standard deviations, and bivariate correlations among the studied variables.

Table 4 shows the results of the multilevel path analysis. The cross-level direct effect of paradoxical leadership on team members' individual ambidexterity was positive and significant ($\gamma = 1.50$, $SE = 0.59$, $p < .05$), supporting Hypothesis 1. Paradoxical leadership was positively related to team ambidexterity ($\gamma = 1.20$, $SE = 0.54$, $p < .05$), supporting Hypothesis 2. Further, individual ambidexterity had a significant positive relationship with individual innovation ($\gamma = 0.18$, $SE = 0.05$, $p < .01$) and the results of parametric bootstrapping showed that paradoxical leadership had a significant indirect effect on individual innovation through individual ambidexterity (*indirect effect* = 0.27, 95% CI [0.07, 0.49]). Thus, Hypothesis 3 was supported. Team ambidexterity was also positively related to team innovation ($\gamma = 0.06$, $SE = 0.02$, $p < .05$) and the results of parametric bootstrapping showed that paradoxical leadership positively and indirectly affected team innovation via team ambidexterity (*indirect effect* = 0.07, 95% CI [0.005, 0.16]), supporting Hypothesis 4.

Hypotheses 5 and 6 pertain to the moderating effects of leader vision. The results demonstrated that leader vision significantly moderated the effect of paradoxical leadership on individual ambidexterity ($\gamma = 0.67$, $SE = 0.27$, $p < .05$) and team ambidexterity ($\gamma = 0.72$, $SE = 0.20$, $p < .01$). As shown in Figures 2 and 3, the results support Hypotheses 5a and 6a.

We then tested our proposed moderated mediation relationships. The results showed that paradoxical leadership had a stronger indirect effect on individual innovation through individual ambidexterity under strong leader vision (*indirect effect* under strong leader vision = 0.36, $p < .01$; *indirect effect* under weak leader vision = 0.19, $p < .05$; *difference* = 0.17, 95% CI [0.03, 0.30]). Similarly, paradoxical leadership had a stronger indirect effect on team innovation through team ambidexterity under strong leader vision (*indirect effect* under strong leader vision = 0.10, $p < .05$; *indirect effect* under weak leader vision = 0.04, n.s.; *difference* = 0.06, 95% CI [0.02, 0.18]). Hence, Hypotheses 5b and 6b were supported.

In summary, Study 2 provides further evidence for the positive effect of paradoxical leadership on innovation through ambidexterity at both individual and team levels after controlling for transformational leadership and supportive leadership behavior. Additionally, the results show that leader vision strengthens the positive effects of paradoxical leadership on ambidexterity and innovation for both individuals and teams.

TABLE 3
Study 2: Means, Standard Deviations, and Correlations

Variable	Mean	Individual-Level *SD*	Team-Level *SD*	1	2	3	4	5	6	7	8	9	10
Individual level													
1. Age	28.52	4.27		—									
2. Education	3.79	0.61		.15**	—								
3. Individual exploration	3.88	1.06		−.02	.08	(.88)							
4. Individual exploitation	4.40	0.85		.05	.03	.43**	(.86)						
5. Individual ambidexterity	17.44	6.67		.02	.06	.90**	.75**	—					
6. Individual innovation	3.97	0.91		.04	−.01	.30**	.22**	.32**	(.86)				
Team level													
1. Team size	8.66		4.00	—									
2. Mean team tenure	2.13		0.97	.04	—								
3. Transformational leadership	3.70		0.43	.07	−.08	(.80)							
4. Supportive leadership	3.89		0.42	.11	−.07	.74**	(.88)						
5. Paradoxical leadership	2.64		0.33	.08	−.03	.63**	.58**	(.92)					
6. Leader vision	4.19		0.69	.20	−.02	.59**	.65**	.45**	(.91)				
7. Team exploration	4.32		0.57	.00	−.08	.44**	.55**	.47**	.48**	(.90)			
8. Team exploitation	4.48		0.46	−.05	−.16	.41**	.56**	.41**	.30**	.61**	(.84)		
9. Team ambidexterity	19.53		4.14	−.02	−.12	.48**	.61**	.50**	.45**	.92**	.86**	—	
10.Team innovation	4.42		0.86	.13	−.17	.24*	.21*	.27**	.19	.35**	.30**	.37**	(.86)

Notes: $n = 607$ for individual-level variables; $n = 93$ for team-level variables. Cronbach's alphas are reported in the parentheses on the diagonal. Paradoxical leadership was measured on a 5-point Likert scale (0–4); individual exploration, individual exploitation, individual innovation, team exploration, team exploitation, and team innovation were measured on 6-point Likert scales (1–6); individual ambidexterity was calculated by multiplying individual exploration and individual exploitation (ranging from 1 to 36); team ambidexterity was calculated by multiplying team exploration and team exploitation (ranging from 1 to 36).

* $p < .05$

** $p < .01$

TABLE 4
Study 2: Simultaneous Multilevel Path Model Tests and Results

	Team Ambidexterity		Team Innovation		Individual Ambidexterity		Individual Innovation	
Variables	**Estimate**	***SE***	**Estimate**	***SE***	**Estimate**	***SE***	**Estimate**	***SE***
Intercepts	19.17**	0.33	3.30**	0.43	17.12**	0.37	0.50	0.77
Team level								
Team size	−0.42	0.30	0.11	0.07	0.15	0.38	−0.15	0.15
Mean team tenure	−0.50	0.26	−0.14	0.08	−0.72*	0.29	0.11	0.09
Supportive leadership	1.75**	0.37	−0.11	0.14	−0.25	0.49	0.23**	0.08
Transformational leadership	−0.34	0.47	0.06	0.17	−1.10*	0.56	0.11	0.10
Paradoxical leadership	1.20*	0.54	0.14	0.10	1.50*	0.59	−0.15	0.10
Leader vision	0.61	0.34	0.04	0.10	1.49**	0.38	−0.26**	0.10
Paradoxical leadership × Leader vision	0.72**	0.20	0.10*	0.04	0.67*	0.27	−0.03	0.05
Team ambidexterity			0.06*	0.02				
Individual level								
Age					0.25	0.28	0.00	0.03
Education					0.58*	0.25	0.02	0.03
Individual ambidexterity							0.18**	0.05

Notes: n = 607 for individual-level variables; n = 93 for team-level variables. All independent variables were standardized before entering the path model. *SE* refers to standard errors.

* $p < .05$

** $p < .01$

STUDY 3: CROSS-LAGGED STUDY VALIDATING CAUSALITY

The results of the above two field studies support our proposed model. However, they could not validate the causal direction of our theorizing. It is possible that highly innovative employees view themselves as putting more effort into exploration and exploitation (Yuan & Woodman, 2010); in other words, employees may assess their engagement in exploratory and exploitative work activities based

FIGURE 2
Study 2: Leader Vision Moderates the Effect of Paradoxical Leadership on Individual Ambidexterity

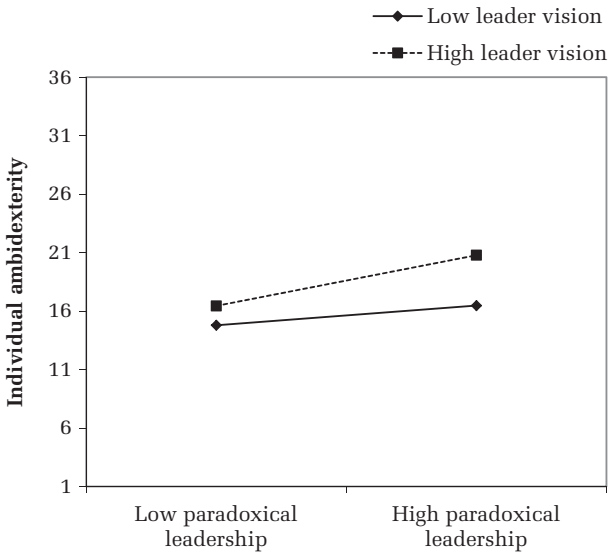
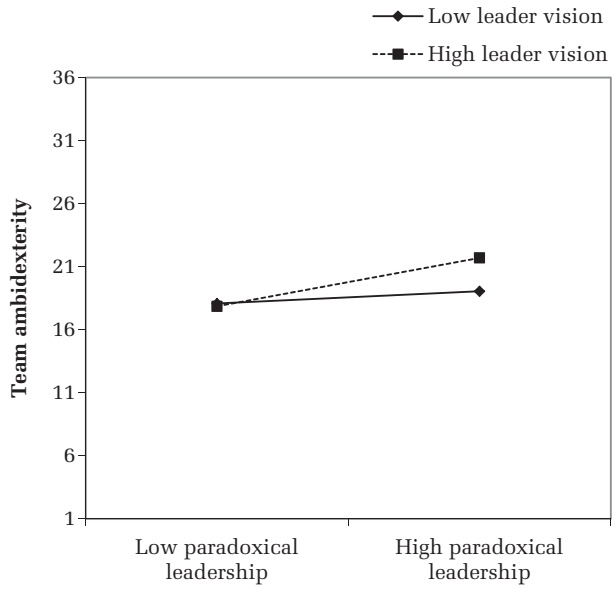


FIGURE 3
Study 2: Leader Vision Moderates the Effect of Paradoxical Leadership on Team Ambidexterity



on their own innovative performance. This suggests the possibility of reverse causation between individual ambidexterity and innovation, which may present an alternative explanation for our results. We therefore conducted an online survey study using a cross-lagged panel design to strengthen the causal direction of paradoxical leadership–individual ambidexterity–individual innovation. The cross-lagged panel model is a rigorous design to test the causal ordering of variables using survey data (Finkel, 1995; Kenny, 1975; Maxwell & Cole, 2007; Selig & Little, 2012), and is especially useful for studying phenomena that are difficult to manipulate in laboratory studies (MacKinnon, Fairchild, & Fritz, 2007).

Sample and Procedures

We recruited a Western sample via Prolific Academic, an online platform designed to recruit participants specifically for academic research that has been shown to provide data of equivalent quality to many work settings (Miron-Spektor et al., 2018; Wu, Parker, Wu, & Lee, 2018). We stipulated that all participants should be full-time employees and working in an organizational team. We also required that their work activities be related to developing new ideas and applying them to work processes, methods, products, or services.

We collected the data at three time points at two-week intervals. The temporal separation was sufficiently long that the prior responses were less likely to be salient and available in participants' short-term memory (Dormann & Griffin, 2015; Miller & Desimone, 1994), but short enough to minimize contaminating factors (Ostroff, Kinicki, & Clark, 2002) and reduce attrition rates (Olsen, 2005). In each of the time periods, participants rated their team leaders' paradoxical leadership (Paradoxical Leadership T1–T3), individual exploration (Exploration T1–T3), individual exploitation (Exploitation T1–T3), and individual innovation (Innovation T1–T3). Additionally, at Time 1, participants reported their demographic characteristics and leader vision.

A total of 442 participants joined this study and completed the T1 survey, 357 participants completed the T2 survey (80.77% response rate), and 312 participants completed the T3 survey (87.39% response rate).[2] We include cases with complete data only in the final sample. Among the 312 participants, 47.44% were female and 90.06% had received a college-level education or above; they had an average age of 31.98 years (SD = 9.20), an average organizational tenure of 5.22 years (SD = 5.22), and had worked with their team leaders for 3.66 years on average (SD = 3.93).

Measures

We used the same measures as in Studies 1 and 2, except that the time scale of the repeated measures was "the last two weeks" across three waves in this study. We asked participants to refer to their respective team leaders when rating paradoxical leadership and leader vision.

Unlike in Studies 1 and 2, the participants rated their own innovation at work. Research has documented considerable convergent validity among self- and supervisor ratings of individual innovation (e.g., Harari et al., 2016; Janssen, 2000), and self-rated innovative performance has also often been adopted in the innovation literature (e.g., Chen, Li, & Leung, 2016; Shalley, Gilson, & Blum, 2009). Furthermore, self-reported innovation has complementary merits over rating by others: it may be more accurate as employees are more likely to be aware of the subtleties involved in their own innovative behavior (Chen et al., 2016; Ng & Feldman, 2013).

We included participants' age and education as control variables. The results were virtually the same for analyses with and without these control variables.

Confirmatory Factor Analyses and Analytic Strategy

Given that we measured paradoxical leadership and individual exploration, exploitation, and innovation three times, we first tested whether these measures had measurement invariance across time (Finkel, 1995; Vandenberg & Lance, 2000). To ensure the degree of freedom of our statistical model, we parceled the five dimensions of paradoxical leadership into five indicators, and exploration, exploitation, and innovation each into two indicators. We tested configural and metric invariance (Little, Preacher, Selig, & Card, 2007). The configural

[2] To examine the effects of subject attrition, we used t-tests to see whether those who stopped participating after the first survey differed from the final sample in the second and third surveys, and whether those who quit after the second survey differed from the final sample in the third survey, with respect to the control, independent, and mediating variables. We did nine such comparisons, applied a Bonferroni correction method, and found no significant differences.

invariance model that specified the same factor structure over time fit the data well, χ^2 (114) = 269.81 (CFI = .972, RMSEA = .066; SRMR = .032). Also, the metric invariance model that fixed the corresponding factor loadings of the same variables as equal across the three time points also fit the data well, χ^2 (128) = 316.45 (CFI = .966, RMSEA = .069; SRMR = .048). The difference of fit indices between the configural and metric invariance models (ΔCFI = .006, ΔRMSEA = −.003, ΔSRMR = −.016) shows measurement invariance according to Chen (2007) (|ΔCFI| ≤ .010 or |ΔRMESA| ≤ .015 or |ΔSRMR| ≤ .030). Based on these criteria, we accepted the metric invariance model of our measures (Chen, 2007; Widaman, Ferrer, & Conger, 2010).

Figure 4 shows the tested cross-lagged mediation model. This model includes parameter estimates of (a) the stabilities of focal variables over time; (b) the cross-lagged effects between paradoxical leadership and individual ambidexterity, and between individual ambidexterity and individual innovation; (c) the direct cross-lagged effect of paradoxical leadership T1 on individual innovation T3; (d) variable correlations at Time 1 and (e) disturbance term correlations at Time 2 and 3; and (f) the effects of control variables on dependent variables. We tested this model using Mplus 8 (Muthén & Muthén, 2017).

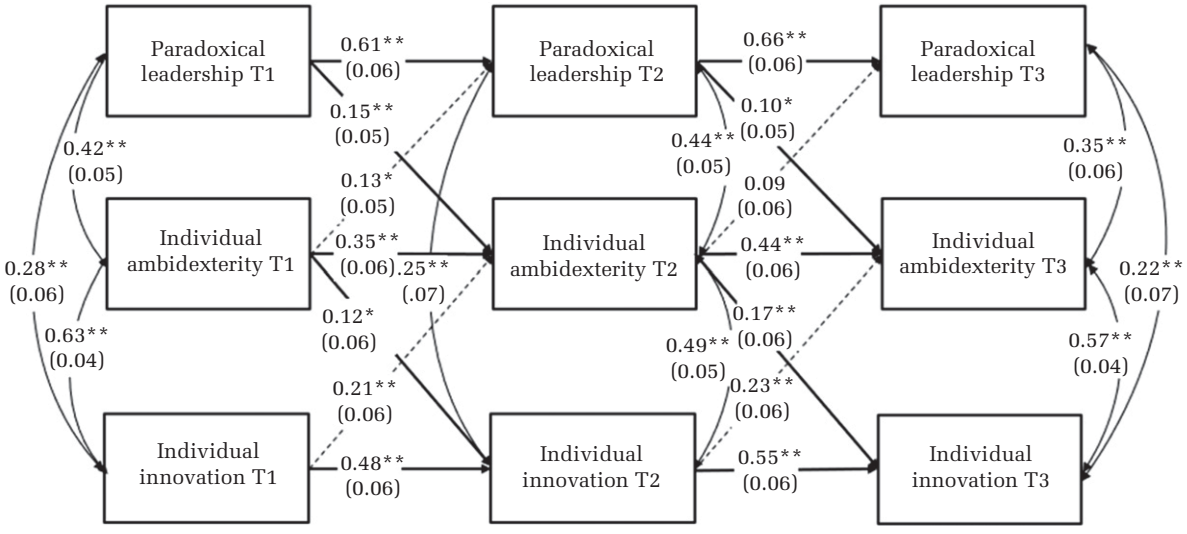
Results and Discussion

Table 5 presents the means, standard deviations, and correlations for all of the variables.

Figure 4 shows the path analysis results of the cross-lagged model. Standardized coefficients are reported. Participants' perception of paradoxical leadership T1 was positively related to their individual ambidexterity T2 (γ = 0.15, SE = 0.05, $p < .01$), and individual ambidexterity T2 was positively related to their individual innovation T3 (γ = 0.17, SE = 0.06, $p < .01$). The indirect effect of paradoxical leadership T1 on innovation T3 through individual ambidexterity T2 was 0.06, with a 95% CI [0.02, 0.13]. These results further supported our proposed relationships. Additionally, the results also showed a bidirectional effect between individual ambidexterity and innovation; for example, individual innovation T2 also has a lagged effect on individual ambidexterity T3 (γ = 0.23, SE = 0.06, $p < .01$).

We further tested the proposed moderating effect of leader vision with this survey data. The moderation of leader vision on the paradoxical leadership T1–individual ambidexterity T2 relationship was positive and significant (γ = 0.86, SE = 0.30, $p < .01$; see Figure 5). The moderated mediation analysis showed that paradoxical leadership had a

FIGURE 4
Study 3: Results of the Cross-Lagged Model



Notes: n = 312. Values shown are standardized coefficients with standard errors in parentheses. Dashed lines represent reverse causality paths. For parsimony, the estimates of the effects of control variables and the direct effect of paradoxical leadership T1 on individual innovation T3 are not presented.

*$p < .05$

**$p < .01$

TABLE 5
Study 3: Means, Standard Deviations, and Correlations

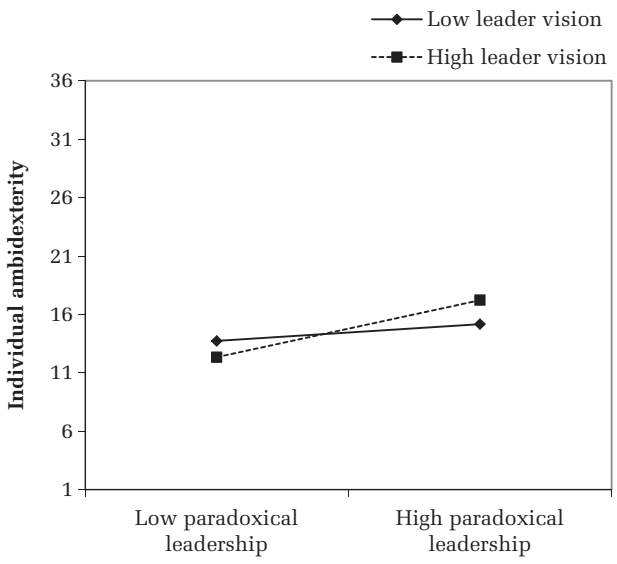
		Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Age	31.98	9.20	—																	
2	Education	3.82	0.92	.14*	—																
3	Leader vision	3.57	0.89	−.15**	−.07	(.87)															
4	Paradoxical leadership T1	2.48	0.58	−.09	.04	.59**	(.91)														
5	Individual exploration T1	3.94	0.99	−.09	.11*	.41**	.37**	(.83)													
6	Individual exploitation T1	4.26	0.81	.03	.02	.27**	.33**	.43**	(.80)												
7	Individual ambidexterity T1	17.15	6.18	−.04	.08	.42**	.42**	.89**	.77**	—											
8	Individual innovation T1	4.21	1.08	−.10	.14*	.25**	.27**	.61**	.46**	.63**	(.89)										
9	Paradoxical leadership T2	2.43	0.67	−.08	.03	.44**	.67**	.37**	.29**	.38**	.28**	(.94)									
10	Individual exploration T2	3.54	1.12	−.10	.11	.28**	.33**	.52**	.23**	.46**	.45**	.47**	(.86)								
11	Individual exploitation T2	4.13	0.98	.00	.05	.14*	.26**	.33**	.50**	.46**	.35**	.50**	.41**	(.86)							
12	Individual ambidexterity T2	15.08	6.53	−.05	.08	.28**	.37**	.50**	.39**	.53**	.48**	.57**	.89**	.73**	—						
13	Individual innovation T2	3.70	1.19	−.05	.14*	.18**	.24**	.43**	.30**	.43**	.57**	.37**	.59**	.46**	.63**	(.90)					
14	Paradoxical leadership T3	2.44	0.69	−.08	.07	.45**	.65**	.35**	.24**	.36**	.27**	.72**	.43**	.38**	.47**	.35**	(.94)				
15	Individual exploration T3	3.53	1.16	−.08	.14*	.34**	.37**	.57**	.27**	.51**	.49**	.41**	.66**	.32**	.62**	.57**	.50**	(.88)			
16	Individual exploitation T3	4.07	1.01	−.09	.10	.22**	.30**	.35**	.47**	.45**	.36**	.42**	.30**	.56**	.45**	.37**	.51**	.50**	(.88)		
17	Individual ambidexterity T3	14.96	6.71	−.09	.11	.35**	.41**	.56**	.41**	.58**	.50**	.47**	.60**	.46**	.64**	.57**	.56**	.92**	.75**	—	
18	Individual innovation T3	3.64	1.29	−.08	.17**	.21**	.28**	.47**	.26**	.44**	.55**	.37**	.55**	.34**	.53**	.68**	.44**	.74**	.51**	.74**	(.92)

Notes: $n = 312$. Cronbach's alphas are reported in the parentheses on the diagonal. Paradoxical leadership across time waves were measured on 5-point Likert scales (0–4); individual exploration, individual exploitation, and individual innovation across time waves were measured on 6-point Likert scales (1–6); individual ambidexterity across time waves was calculated by multiplying individual exploration and individual exploitation (ranging from 1 to 36).

* $p < .05$

** $p < .01$

FIGURE 5
Study 3: Leader Vision Moderates the Effect of Paradoxical Leadership on Individual Ambidexterity



stronger lagged effect on individual innovation through individual ambidexterity under the strong leader vision condition (*indirect effect* under stronger leader vision = 0.08, $p < .05$; *indirect effect* under weaker leader vision = 0.02, n.s.; *difference* = 0.06, 95% CI [0.02, 0.14]). In sum, these results consistently support leader vision as a boundary condition of paradoxical leadership's effect on individual ambidexterity and innovation at work.

GENERAL DISCUSSION

Integrating the paradox perspective and ambidexterity theory as our theoretical framework, we proposed and tested a multilevel model to determine how paradoxical leadership affects individual and team innovation. Our empirical results show that paradoxical leadership positively affects team members' individual innovation through individual ambidexterity and has a positive relationship to team innovation via team ambidexterity. The results further demonstrate that leader vision strengthens these effects.

Theoretical Implications

Our findings contribute to the literature on innovation, ambidexterity, and leadership in several important ways. First, looking at innovation via the paradox perspective, we have revealed paradoxical leadership as a driving force to help individuals and teams address the paradoxical demands involved in the innovation process. Emerging research has recognized the paradoxical features of innovation (e.g., Thayer et al., 2018), suggesting that leaders should implement opposing action strategies and practices to foster innovation, especially in teams and individuals tasked with providing innovative solutions (e.g., Gebert et al., 2010; Rosing et al., 2011). However, our understanding of how leaders tackle the inherent paradoxical tensions to foster effective innovation is still quite limited. A major omission of prior frameworks and studies is that they mainly center either on idea generation or on idea implementation (Anderson et al., 2014). By integrating the paradox perspective and ambidexterity theory, we disentangled the mechanisms by which paradoxical leaders foster individual and team innovation—that is, through promoting ambidexterity in both individual employees and whole teams.

Second, our research extends ambidexterity theory. Although ambidexterity theory suggests the importance of leaders and leadership in influencing ambidexterity and, in turn, innovation (e.g., Bledow et al., 2009; Rosing et al., 2011), it reveals very little about *what* leadership behaviors. The present research enriches our understanding by showing what specific leader behaviors can promote ambidexterity and when. Specifically, it discloses that team leaders can promote the ambidexterity of individual followers and their teams by taking a both–and behavioral approach to the competing demands for control versus flexibility and the collective versus the individual. Such a leadership approach enhances ambidexterity (and, in turn, innovation) depending on the extent to which the leader communicates a strong vision. Taken together, our findings advance ambidexterity theory by demonstrating what leadership behaviors promote innovation through enhancing ambidexterity at both individual and team levels and when they do so (Colquitt & Zapata-Phelan, 2007).

Third, this research contributes to understanding leadership in work teams operating in complex and volatile environments. Team leadership research has underlined the functional leadership perspective (Hackman & Wageman, 2005; Zaccaro, Rittman, & Marks, 2001), which posits that leaders should act in ways that provide their teams what they need for successful actions—highlighting the importance of matching leader behaviors to team contexts and performance requirements. Related to this stream,

scholars increasingly attend to leadership approaches to workplace paradoxes, which are particularly prevalent in the present era of rising uncertainties and complexity (e.g., Denison, Hooijberg, & Quinn, 1995; Kaiser, Lindberg, & Craig, 2007; Zacher & Rosing, 2015). Throughout this line of inquiry, a seeming consensus is that leaders should act paradoxically and flexibly to address complex and competing work demands. Paradoxical leadership, with its theoretical roots in the paradox perspective and systematically developed measures, displays the behavioral manifestations of team leaders in managing tensions and shows a good fit with the contemporary complex team contexts (Barkema, Chen, George, Luo, & Tsui, 2015; Schad, Lewis, Raisch, & Smith, 2016). The findings of this research regarding the moderating effect of leader vision further add to our knowledge about an important boundary condition for paradoxical leadership's effectiveness in promoting innovation in such work teams.

Limitations and Future Research Directions

We first acknowledge the limitations in the measurement and design of our studies. In our field studies, we asked team leaders to rate team innovation rather than measuring it objectively (e.g., by observing the number of patents acquired) because the work teams we sampled came from a range of different industrial and functional backgrounds and did not have uniform innovation solutions or quantified records. Additionally, in our cross-lagged survey study, we used participants' subjective measures of individual innovation, due to the constraints imposed by the online sample. Though subjective rating has its merits in representing the real-world innovation situations that objective data or external observers cannot capture (Anderson et al., 2014), we could not rule out the possibility of social desirability biases. In any event, future research could consider (a) incorporating objective or multiple measures of team innovation with certain types of teams, such as new product development teams, to increase the rigor and robustness of the findings, or (b) using different data sources to capture team innovation and team members' individual innovation when they are considered together. Further, given the limited sample size of teams in our field studies ($N = 105$ in Study 1 and $N = 93$ in Study 2), we had to test the structural model and measurement model separately following Anderson and Gerbing's (1988) two-step approach. Future work could adopt the more rigorous multilevel structural equation modeling approach recommended by Preacher et al. (2010), if possible. Moreover, while the "dual-sided" measures of paradoxical leadership have their theoretical merits (i.e., they are parsimonious measures that are tightly aligned with the theoretical root of the paradox perspective), other operationalizations may work as well (e.g., a multiplicative approach [Zacher & Rosing, 2015]). We suggest future research to consider alternative operationalizations of paradoxical leadership according to research questions and theoretical underpinnings.

Second, while we applied the notion of ambidexterity to work team contexts, our model is primarily applicable to teams tasked with innovative solutions. Not all organizational teams are necessarily ambidextrous—for example, functional teams with relatively simple and routine tasks. On this point, a compelling question arises: Can ambidexterity sometimes yield undesirable consequences? Future research could consider and identify whether and when ambidexterity is beneficial (or undesirable) for teams and individuals. Additionally, we believe that the nature and manifestations of ambidexterity in teams and individuals merit further investigation. Ambidexterity can take different forms (e.g., Bledow et al., 2009). For instance, in a team responsible for developing new products, some members may concentrate more on coming up with novel ideas while others focus on scrutinizing the feasibility and application of ideas. The same activities can also be carried out by an individual switching back and forth between engaging in unconstrained idea generation and practical implementation. The respective measures of team ambidexterity and individual ambidexterity we adopted in our studies could not capture all the differences underlying these two types of ambidexterity. Qualitative approaches would greatly enrich our understanding in this area by disentangling the characteristics and processes of team and individual ambidexterity. Moreover, since we used the cross-lagged panel design to test the causality of only part of our model, future work could further validate the causal direction for the team-level theorizing. A quasi-experimental design would be a powerful method for strengthening the causal inferences.

Third, we did not investigate the relationship between individual and team innovation in the context of paradoxical leadership, though we included both of them as our focal dependent variables. Theoretically, team innovation differs from individual innovation and the summation of team members' individual innovation—they could be correlated but are indeed two different phenomena (e.g., Anderson et al., 2014). Like the relationship between team members'

individual performance and team performance, individual innovation could contribute to the team's overall innovation. It is also possible that the most innovative member may determine the innovation volume of the team. However, previous research has indicated that the team innovation–individual innovation relationship may be more complicated than expected. For example, employees with more innovative behavior are more likely to have conflicts with their coworkers and poorer coworker relations (e.g., Janssen, 2003), and, when innovative behaviors result in group conflict, this can cause lower levels of group cohesion and group potency (Janssen, Van de Vliert, & West, 2004), which may consequentially reduce team innovation. Thus, we encourage researchers to unpack the complex relationship between team innovation and team members' individual innovation in future research of "leading for innovation."

Fourth, though we derived multiple theoretical rationales for the effect of paradoxical leadership on team and individual ambidexterity, we acknowledge that we did not explicitly test them. We encourage future research to examine alternative, more specific underlying mechanisms of paradoxical leadership's effects in work teams, such as how the role modeling effect works to influence team members and the type of work atmosphere that paradoxical leadership develops. Additionally, paradoxical leaders combine seemingly competing behaviors to manage paradoxical work demands, but the extent to which they do so based on situational requirements is not well understood. As Rosing et al. (2011: 972) suggested, "Leaders need to have the knowledge or intuition of when and how to act and—even more importantly—they need to flexibly switch between behaviors according to situational requirements." Researchers could further investigate how leaders exhibit paradoxical leadership behaviors dynamically over time.

Lastly, our research only focuses on the extent to which leaders communicate a clear vision as a boundary condition. It is worth noting that the clarity of the communication of leader vision does not necessarily indicate whether followers internalize and identify with the vision, or collectively share it. Future research could explore other facets of vision as contextual factors, such as the degree to which team members share the same vision or the extent to which the vision communicated by a leader is consistent with organizational vision. Moreover, paradoxical leaders may enhance individual and team innovation particularly under complex and uncertain conditions, such as in situations of high task complexity and role ambiguity. Prior research has also shown the importance of team composition in predicting innovation (e.g., Miron-Spektor et al., 2011). We suspect that team cognitive composition may interact with leader behaviors to affect team innovation. We urge future research to investigate these conditions and advance the theoretical development of leading for innovation (Colquitt & Zapata-Phelan, 2007).

Practical Implications

Our research offers several practical insights for practitioners. First, based on our findings, we advise managers—especially those leading work teams to deliver innovative solutions—to employ a paradox perspective and consider using paradoxical leadership principles and behaviors to foster ambidexterity and innovation. If organizations provide paradoxical leadership training to team leaders, it could help them to master a both–and approach to resolving common paradoxes—for example, to ensure flexibility while enforcing clear work requirements and to hold personal control of outputs while granting team members autonomy in the process.

Prior research has indicated that a cognitive prerequisite for paradoxical leadership is "paradoxical mindset"—that is, an individual's cognitive orientation to accept and be energized by tensions (Miron-Spektor et al., 2018; Zhang et al., 2015). In his influential book concerning the paradoxical mindset, Martin (2009) gave vivid examples of leaders capable of such a mindset, such as Jack Welch, Larry Bossidy, and Michael Dell. Just as Paul Polman, the former CEO of Unilever, stated, "The difference between average and outstanding firms is an 'AND mentality' (Lewis et al., 2014). We must find and create tensions—force people into different space for thinking." Leaders high in paradoxical mindset can simultaneously hold two contradictory ideas in mind (such as retaining control and granting autonomy), and combine and integrate both into higher-order planning. To achieve sustained success in today's volatile environments, we recommend that leaders think paradoxically and act integratively (Bledow et al., 2009; Peng & Nisbett, 1999). Providing training on such cognitive mindsets therefore becomes imperative.

Furthermore, to maximize the effectiveness of paradoxical leadership, team leaders should create and convey a clear, forward-looking vision to their team. Recent research shows that team leaders and middle managers play important roles in conveying and cultivating vision and direction for employees and that their vision communication can have a significant

influence on the effectiveness of their leadership (e.g., Dionne, Yammarino, Atwater, & Spangler, 2004; Lewis & Clark, 2020; Wellman, 2017). Our findings indicate that communicating a clear, guiding vision to members and empowering them to "see the big picture" could be necessary for paradox management in work teams. Without a clear vision, a team may lose sight of where it is going and, hence, be unable to interpret and understand the rationale behind paradoxical leadership. Organizations can encourage and guide team leaders to develop visions for teams in line with organizational visions.

Finally, our findings empirically support the notion that ambidexterity enhances innovation at both individual and team levels. These findings can benefit companies that are built on innovative products and services (such as high-tech enterprises and young start-ups), which may have a particularly strong need for ambidextrous work teams. In reality, not all teams are capable of delivering high-quality innovative outcomes as requested. Some focus too much on introducing new ideas and fail to move forward and realize these ideas' potential, while others fail because they move to implementation too quickly. We suggest that, to innovate successfully, teams and individuals should place equal emphasis on both exploratory and exploitative activities. Also, organizations should provide an enabling context to encourage both exploratory and exploitative efforts of teams and individuals, such as HR management practices (e.g., training) to increase paradoxical leadership and effective leader vision communication, or a culture that emphasizes paradoxical thinking and dynamic adaptability to nurture (or at least not to inhibit) ambidexterity.

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