Received: 24 July 2019 | Revised: 13 April 2022 | Accepted: 18 April 2022

DOI: 10.1111/peps.12516

PERSONNEL PSYCHOLOGY WILEY

ORIGINAL ARTICLE

Leader subjective ambivalence: Enabling team task performance via information-seeking processes

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Abstract

In this article, we investigate the effects of leader subjective ambivalence on team performance. Integrating the ambivalence literature and social learning theory, we propose a multi-level model of whether, when, and why team leaders' subjective ambivalence enhances team performance outcomes. The results of two laboratory experiments (Studies 1 and 2) demonstrate initial support for the relationship between leader subjective ambivalence and information-seeking behaviors. The results of a longitudinal field study (Study 3) based on 164 projects (164 leaders and 725 subordinates) show that leader subjective ambivalence has a positive indirect effect on team task performance first through leader information-seeking behaviors and later through team information-seeking behaviors. Our results further indicate that project complexity is a boundary condition for the proposed conditional indirect effect of leader subjective ambivalence on team performance outcomes. We discuss the theoretical and practical implications of these findings.

KEYWORDS
ambivalence, information-seeking, leadership processes, team performance

1 | INTRODUCTION

Subjective ambivalence, the "psychological state of conflict associated with holding both positive and negative thoughts and feelings at the same time about the same object, person, or issue" (Priester & Petty, 1996, p. 432) is a common experience at work, particularly for leaders (Rothman & Melwani, 2017). Leaders of contemporary organizations confront contradictions and tensions when managing people (Smith & Lewis, 2011), making strategic decisions (Plambeck & Weber, 2009), and when solving problems (Guarana & Hernandez, 2016). Take, for instance, leaders working on team projects with others. These leaders may have competing goals (e.g., integrating short- and long-term goals), competing roles (e.g., decision-maker and team player), and face multifaceted issues (e.g., meeting conflicting requests from different departments or stakeholders). These conflicting experiences may engender the internal experience of subjective ambivalence about work projects, with subsequent effects on leader behaviors. Considering that subordinates pay particular attention to their leaders' behaviors (Hernandez et al., 2011; Kouzes & Posner, 2006; Yukl, 2010) and use them as a guide (Aryee et al., 2007; Mawritz et al., 2012; Mayer et al., 2009), leaders' ambivalence-induced behaviors may have important interpersonal consequences for their subordinates as well as for overall team performance.

To date, however, whether leader subjective ambivalence is helpful, harmful, or neither for team performance is unclear. Specifically, there are two emerging lines of discrepant thought regarding the effects of leader subjective ambivalence on subordinates, and this discrepancy implies both positive and negative effects on team performance. On the one hand, research demonstrates that leader ambivalence about subordinates negatively impacts subordinate task engagement (e.g., Lim et al., 2021). On the other hand, research suggests that leaders' subjective ambivalence about complex issues can increase participation by subunits and thus broader and more novel strategic responses (e.g., Guarana & Hernandez, 2015; Plambeck & Weber, 2009). These inconsistent findings suggest that leader subjective ambivalence is potentially a double-edged sword that produces both detrimental and beneficial effects on subordinates, with inconsistent implications for whether we should predict a positive or negative effect on team performance. Further, there is a lack of clarity about why and when leader subjective ambivalence would positively affect team performance.

Our work advances the literature by building consensus between these divergent views on the effects of leader subjective ambivalence on subordinates. We do so specifically by clarifying a multi-level, multi-step process by which leader subjective ambivalence shapes team performance through behavior. Building on prior ambivalence scholarship, we suggest that because ambivalence violates needs for consistency (Festinger, 1957), it motivates both intra- and inter-personal processes (Ashforth et al., 2014; Van Harreveld et al., 2009). First, individuals experiencing subjective ambivalence will be motivated to engage in information-seeking behaviors to better understand the problem (Guarana & Hernandez, 2016) and reduce inconsistencies related to experiencing ambivalence (Sawicki et al., 2013). Second, building on social learning theory that posits that people model the behaviors they deem credible and attractive (Bandura, 1977), we suggest that leaders' information-seeking behaviors trickle down to engender similar behaviors in team members. Since the leaders' information-seeking behaviors are considered credible and attractive, they are mimicked by team members, thereby creating a process of team information-seeking which enhances the overall team performance.

To further provide consensus to these diverging views about leader ambivalence we propose that project complexity, or the degree to which projects are non-routine and require complex approaches (Haas, 2010; Tushman, 1978; Vashdi et al., 2013; Weingart, 1992), is an important, yet overlooked, contextual factor that influences the strength of the relationship between leader subjective ambivalence and team performance via leader information-seeking behaviors and team information-seeking behaviors. We posit that subjective ambivalence will facilitate leaders' ability to adapt and adjust their information-seeking patterns across different situational demands. Leaders experiencing subjective ambivalence are more likely to attend to and be influenced by the situational requirements (Rees et al., 2013) of high and low complex projects than leaders not experiencing subjective ambivalence. As a result, project complexity can inform ambivalent leaders—through task cues—of the need for more information whereas low project complexity

can inform ambivalent leaders of the lack of need for more information. As a result, ambivalent leaders will seek more information from their team members when project complexity is high than when it is low, thus creating benefits for team performance. Project complexity, therefore, can offer a theoretically and practically relevant explanation for the diverging findings related to leader subjective ambivalence.

The findings in this article offer several important theoretical and practical contributions. Most significantly, our results advance the literature on subjective ambivalence in leaders by providing consensus around the mechanism(s) responsible for the positive effects of leader subjective ambivalence on subordinates. By integrating research on subjective ambivalence (Priester & Petty, 1996; Van Harreveld et al., 2015) with social learning theory (e.g., Bandura, 1977), we find support for a multi-level, multi-step process that explains why leader experiences of subjective ambivalence are beneficial for team performance: because they elicit greater information seeking from leaders and followers. Although previous research on ambivalence has identified the individual and dyadic effects of ambivalence either in separate studies (e.g., Guarana & Hernandez, 2015; Rees et al., 2013; Rothman, 2011; Rothman & Northcraft, 2015) or as separate paths in the same model (e.g., Rothman & Melwani, 2017), our research links the individual internal experience of ambivalence to team-level behaviors and outcomes. Our results suggest the importance of considering ambivalence-induced behavior and social learning processes as a key to the positive effects of leader subjective ambivalence. This approach improves conceptual precision by demonstrating how seemingly independent processes—intrapersonal and interpersonal—operate together to affect performance within a team.

Overall, our findings demonstrate that advantages exist for team performance when leaders do not have all the answers. Specifically, when leaders simultaneously hold positive and negative thoughts about the same complex project, they are motivated to utilize the knowledge, ideas, skills, and abilities of their followers, with downstream benefits for team performance.

2 | THEORY AND HYPOTHESES

We conceptualize leader subjective ambivalence as a leader's psychological state of conflict associated with holding both positive and negative thoughts and feelings at the same time about an issue (Priester & Petty, 1996, p. 432; Thompson et al., 1995). As we describe below, integrating research on subjective ambivalence (Priester & Petty, 1996; Van Harreveld et al., 2015) with social learning theory (e.g., Bandura, 1977), explicitly clarifies a two-step process underlying the relationship between leader subjective ambivalence and team performance as well as an organizational boundary condition for our effects.

2.1 | Subjective ambivalence and leader information-seeking behaviors

Attitudes are considered ambivalent when a target, such as a project or an idea, is evaluated[1] both positively and negatively at the same time. In other words, people are ambivalent when their attitudes toward an object contain conflicting positive and negative elements (Kaplan, 1972; Priester & Petty, 1996, 2001; Thompson et al., 1995). There are two central features of ambivalence. First, both positive and negative associations need to be present. Second, these associations are relevant to the target, such as a project, at the same time (Van Harreveld et al., 2015). On the one hand, an objective approach to assessing ambivalence considers the intensity of independent positive and negative reactions that an individual holds toward an attitude object and combines these to reflect the level of ambivalence. On the other hand, a subjective approach to assessing ambivalence considers the internal feelings of being mixed, torn and conflicted that a person experiences when a target is considered (Priester & Petty, 1996).

Building on prior ambivalent leadership scholarship (Plambeck & Weber, 2009), we focus on leader subjective ambivalence regarding a work project, referring to feeling "mixed" or "conflicted" about a work project that comes from recognizing that the project has both positive and negative qualities. Subjective ambivalence is our focus because

it has been described as "the engine that drives the subsequent effects of ambivalence on cognition and behavior" (Van Harreveld et al., 2015, p. 313).

Research on ambivalence and information processing has emphasized the motivational influence of subjective ambivalence. Simultaneous positive and negative evaluations of an attitude object may be subjectively experienced as uncomfortable (Priester & Petty, 1996), especially if the positivity and negativity are simultaneously activated (Newby-Clark et al., 2002) and if a choice is imminent (Van Harreveld et al., 2009). Similar to traditional cognitive dissonance theories (Abelson, 1968), the discomfort of subjective ambivalence has been found to exert a motivational influence on information choices. Specifically, Van Harreveld et al.'s model of the consequences of ambivalence suggests that because ambivalent attitude holders experience an internal evaluative inconsistency that creates a subjective state of tension, they are motivated to process information about the attitude object extensively in an effort to resolve the discomfort of that tension (Sawicki et al., 2013; Van Harreveld et al., 2015) or to increase their attitude certainty (Jonas et al., 1997).

It follows that when leaders experience subjective ambivalence about a work project they are likely to thoroughly seek more information from their team either to reduce their subjective ambivalence or to increase their attitude certainty. For instance, the co-existence of positive and negative thoughts and feelings in the leader can create feelings of internal conflict (Priester & Petty, 1996). Since information can enable leaders' ability to meet their goals of subjective ambivalence reduction and increased attitude certainty, leaders' motivation to seek and utilize the knowledge, ideas, advice, skills, and abilities of their team members will increase. Alternatively, if the leaders experience more of a one-sided set of thoughts and feelings about the project, their feelings of internal conflict and attitude uncertainty will be reduced. They already have a solid basis for their attitudes which will in turn reduce their motivation to seek and utilize knowledge and ideas from their team members. Thus, we argue that leaders experiencing high subjective ambivalence are likely to value others' perspectives and opinions and will engage in more information-seeking from their teams. Thus, we predict the following:

Hypothesis 1: *Leader subjective ambivalence is positively associated with leader information-seeking behaviors.*

2.2 | Leader information-seeking behaviors relates to team information-seeking behaviors

Thus far we have focused on the individual effects of subjective ambivalence and have argued that leader subjective ambivalence influences the leader's own information-seeking behaviors. However, successful team performance requires team members to also engage in information seeking that enables them to integrate multiple viewpoints (Bunderson & Sutcliffe, 2002; Jehn & Shah, 1997). However, leaders cannot simply demand such information-seeking processes; rather leaders must cultivate them (Agrell & Gustafson, 1996; N. R. Anderson & West, 1998; S. K. Kahai et al., 1996; Tost et al., 2013; West, 1990). Given this dynamic, we propose that leader information-seeking behaviors that result from subjective ambivalence also have interpersonal effects and increase team members' information seeking.

To understand how leader behavior influences the team process, we draw from social learning theory (Bandura, 1977). The central tenet of social learning theory is that individual behavior is influenced by the observation of important environmental stimuli (Bandura, 1977). Importantly, this theory also highlights that simply exposing people to environmental stimuli does not ensure that they will pay attention and learn from these stimuli; rather, this process only occurs when they pay attention and encode these stimuli as valuable. Since the formal leader is imbued with high levels of power and legitimacy, they are an especially conspicuous source of social information and influence (e.g., Wood & Bandura, 1989). Leaders are described as "the most salient, tangible representative of management actions, policies, and procedures" (Kozlowski & Doherty, 1989, p. 547). As a result, by signaling what is expected,

valued, and rewarded, leaders' positive and negative behaviors act as a blueprint for their followers' actions and interactions (Babalola et al., 2016).

By seeking information from their team members, leaders experiencing subjective ambivalence signal their openness to multiple perspectives and convey that they value their team members' knowledge. Although this behavior operates in contrast to the implicit belief that prototypical leaders need to be all-knowing, dominant, and decisive (Offermann et al., 1994), information seeking is valuable because it demonstrates that the leader is willing to acknowledge their own expertise limits (Simon, 1957), and it models the importance of self- and other-awareness (Chiu et al., 2016). These salient leadership cues then function to establish norms for behavior within the team, and they serve as an example of appropriate behavior. Thus, through the leaders' behaviors, team members come to understand what is expected and how to behave. In this manner, leaders serve as legitimate role models to the rest of the team.

In turn, social learning theory also relies on the idea that behaviors continue when they are reinforced. Employees are usually motivated to behave in ways that are desired by their leader because they know they will ultimately be rewarded. To the extent that team members observe their leader engaging in information-seeking behaviors, they may also consider this as an implicit expectation that they are expected to act in similar ways and will be rewarded accordingly. Overall, by seeking information from others on their team, leaders who experience subjective ambivalence model teamwork and how team members should work together. By fostering an environment where seeking others' expertise is the norm, leaders "establish the acceptable interaction patterns in the team" (Zaccaro et al., 2001, p. 468). Followers, therefore, learn to respect others' knowledge, perspectives, and information (Armenakis et al., 1993). Based on these dynamics, we propose the following:

Hypothesis 2: *Leader information-seeking behaviors are positively related to team information-seeking behaviors.*

Hypothesis 3: *Leader information-seeking behaviors mediate the effects of leader subjective ambivalence on team information-seeking behaviors.*

2.3 | Team information-seeking behaviors and team task performance

Furthermore, we propose that these information-seeking behaviors lead to enhanced team task performance. Past research in this domain has highlighted the importance of information sharing, specifically showing that teams that discuss unshared versus shared information have better outcomes (Greenhalgh & Chapman, 1998; Schittekatte & Van Hiel, 1996; Stasser & Titus, 1985, 1987). However, what remains is "variability in how many group members have access to a piece of information" (Hinsz et al., 1997, p. 54), and this variability of expertise and information only become apparent as teams engage in information-*seeking* behaviors. This need suggests that the process of information seeking is foundational to whether teams can engage in the next step of information sharing, which is critical to team performance (Mesmer-Magnus & DeChurch, 2009).

Although limited research considers the outcomes of information search, some studies have identified that teams often focus on shared information, even when individual team members have heterogeneous and distinctive knowledge sets (Hinsz et al., 1997; Stasser & Titus, 2003). However, to tap into individual team members' distinctive knowledge sets and expand the pool of knowledge available to the team, teams can develop coordinated information-seeking norms and processes. For instance, they can create a climate of information seeking that enables more unique information to surface or to be shared (e.g., Morrison et al., 2011). Once shared, this knowledge pool enhances team decision-making and performance (Mesmer-Magnus & DeChurch, 2009).

Integrating the above logic and arguments, we argue that leader subjective ambivalence triggers an information-seeking process composed of intra- and interpersonal effects, which in turn affects team task performance. In particular, we propose a serially mediated process in which leader experiences of subjective ambivalence first influence the leader's own information-seeking behaviors, which creates expectations for team members to seek information among themselves, leading to increased task performance. We hypothesize the following:

Hypothesis 4: *Team information-seeking behaviors are positively related to team task performance.*

Hypothesis 5: *Leader information-seeking behaviors and team information-seeking behaviors serially mediate the relationship between leader subjective ambivalence and team task performance.*

2.4 | The moderating role of project complexity

To further clarify the double-edged sword of leader ambivalence and provide consensus to the diverging views, we propose that levels of project complexity help to explain when leader subjective ambivalence enriches team performance. Demonstrating this contextual organizational moderator has the potential to clarify the contradictory findings of leader ambivalence.

We suggest that project complexity—which reflects the degree to which projects are non-routine and require multifaceted approaches (Haas, 2010; Tushman, 1978; Vashdi et al., 2013; Weingart, 1992)—will moderate the effect of leader ambivalence on information seeking. Based on the idea that tasks differ in their amount of predictability and therefore in the amount of uncertainty which the unit must deal with during task execution (Galbraith, 1973), Tushman (1978) suggested that tasks can be seen to vary in their amounts of information processing requirements from minimal (simple or routine tasks) to substantial (complex or nonroutine tasks). Indeed, in his research on an R&D facility of a large American corporation, Tushman (1978) found the most successful projects tailored their communication patterns to fit the information processing demands of their work. High performing projects with complex tasks had greater intra-project communication than the high performing projects with less complex tasks. In short, individuals effectively dealt with their increased task complexity through increased communication inside the project. For more complex tasks, a little communication may not be sufficient to deal with the task's complexity. However, the less complex projects required less problem solving and thus less communication inside the project. For routine tasks, substantial communication may be redundant and costly.

The implication for leaders is that more effective leaders can actively manage the communication patterns of their teams, particularly when tasks and projects are complex (Kane et al., 2002; Zaccaro et al., 2001). When task complexity is high, the leader needs to "reconsider team resources, recombine them into more viable coordination patterns, and reorient team regulation mechanisms" (S. S. Kahai et al., 1997; Kozlowski et al., 1996; Zaccaro et al., 2001, p. 476). One way leaders can do this is to help the team develop the appropriate communication patterns that match the information processing demands of the project's work.

We suggest that leader ambivalence will facilitate leaders' ability to adapt and adjust their information-seeking patterns across different situational demands. Because complex projects place more demands on knowledge, skills, problem-solving, and resources of performers, they require greater information-seeking than less complex projects. The more complex the project, the more leaders endanger their effectiveness by not soliciting information that can help them to anticipate, identify and address potential problems or unexpected consequences of their decisions (Haas, 2010). Individuals who are ambivalent are more influenced by the context than when they are not ambivalent (Katz & Hass, 1988; MacDonald & Zanna, 1998). Specifically, ambivalent individuals have been shown to be more open and receptive to contextual information like persuasive messages (Maio et al., 1996), peer advice (Rees et al., 2013), and persuasion attempts (Zemborain & Johar, 2007) than less ambivalent individuals. As a result, we propose that leaders experiencing high levels of subjective ambivalence will be more likely to attend to these situational requirements of high and low complex projects, and will be more likely to be influenced by them, than leaders experiencing low levels of subjective ambivalence.

In turn, high project complexity can inform ambivalent leaders of the need for more information whereas low project complexity can inform ambivalent leaders of the lack of need for more information. Therefore, we expect that leaders experiencing subjective ambivalence will seek more information from their team members when project complexity is high than when it is low. In contrast, leaders experiencing lower subjective ambivalence are less attuned and

less influenced by situational cues, and thus, we expect their levels of information seeking will not vary as a function of high and low levels of project complexity.

Accordingly, we extend our theorizing to propose that this project-level characteristic—project complexity—influences the strength of the positive relationship between leader subjective ambivalence and leader information-seeking behaviors, thus explaining when leader subjective ambivalence increases information seeking—and subsequently influences team information-seeking behaviors and team task performance (e.g., McGrath, 1962; Zaccaro et al., 2001). In sum, we propose a first-stage conditional indirect effect model in which leader subjective ambivalence interacts with project complexity to positively predict leader information-seeking behaviors. This interaction influences the strength of the indirect effects of leader subjective ambivalence on team task performance first via leader information-seeking behaviors and then via team information-seeking behaviors. We hypothesize the following:

Hypothesis 6: *The positive relationship between leader subjective ambivalence and team task performance, first via leader information-seeking behaviors, and then via team information-seeking behaviors, is stronger when project complexity is high.*

3 | OVERVIEW OF THE EMPIRICAL STUDIES

We conducted three studies to test the hypotheses. Study 1 utilized a laboratory experiment to test whether leaders who experience subjective ambivalence are more likely than other leaders (positive, negative, or indifferent) to demonstrate information-seeking behaviors. Study 2 was another laboratory experiment with 546 participants (182 leaders and 364 subordinates), in which we manipulated leader subjective ambivalence. In this study, we examined whether teams whose leaders experienced subjective ambivalence performed better than other teams and whether leader information-seeking behaviors and team information-seeking behaviors accounted for the proposed direct effects. The tasks adopted in Studies 1 and 2 were complex and required leaders to seek information to perform better. Study 3 utilized a longitudinal field study with 164 project leaders and 725 subordinates to test the full theoretical model. To minimize problems with common method variance, clients provided team task performance data.

3.1 | Study 1

3.1.1 | Participants and procedure

We recruited a total of 410 U.S. leaders from different companies and industries through Qualtrics (qualtrics.com) at the end of 2019, paying each $5.00 (Indiana University Institutional Review Board approval 1912247236 - Title: Ambivalence in leadership processes). In addition to being leaders, participants had at least 5 years of work experience. Four participants did not finish the survey and six did not answer the attention check item properly. Accordingly, following Meade and Craig's (2012) procedures for careless responders and R. J. Little and Rubin's (2002) recommendations for handling missing data, we dropped these 10 participants (listwise deletion), resulting in a final sample of 400 leaders (56.25% male; average age = 37.89 years [*SD* = 5.77]).

Participants were told that they would assume the role of a senior consultant for a large consulting firm and that these senior consultants usually managed teams of junior consultants with unique knowledge, yet related expertise (Bernholz & Teng, 2015; Blagoev & Schreyögg, 2019). They were told that their team had been assigned to a new client that wanted to introduce home delivery services to their customers and that the director of their firm would expect their final recommendations on the project.

Participants were randomly assigned to one of four conditions: ambivalence (n = 101), positivity (n = 100), negativity (102), and indifference (n = 97). In the ambivalence condition, participants were given three strengths (positive

TABLE 1 Means of leader subjective ambivalence, and leader information-seeking behaviors as a function of the assigned condition for Study 1

		Leader subjective ambivalence	Leader information-seeking behaviors
Category	*N*	*M (SD)*	*M (SD)*
Ambivalence	101	3.80 (.92)	2.57 (1.29)
Positivity	100	3.17 (.85)	1.44 (1.26)
Negativity	102	3.24 (.90)	1.56 (1.29)
Indifference	97	3.06 (.87)	1.49 (1.23)

cues) and three weaknesses (negative cues) about the project as the ambivalence literature that finds that ambivalence emerges when strong positive and negative perspectives are similar in magnitude (e.g., similarity-intensity model [SIM], Thompson et al., 1995). In the positivity condition, participants were given three positive cues about the project. In the negativity condition, participants were provided with only three negative cues about the project and informed that these cues made them strongly oppose the initiative. Participants in the indifference condition did not receive cues and were told that they were neutral or did not strongly support or oppose the initiative.[2]

After reading the scenario, we asked participants if they wanted to seek more information from their subordinates (junior consultants) before providing their final recommendation. They were told that they had four subordinates, and that each subordinate provided one extra piece of information (two subordinates were supportive of and two subordinates opposed the initiative). If they chose to talk to the junior consultant, participants were randomly assigned to a new positive or negative piece of information and asked the same question again. Therefore, participants had the option to seek new relevant information from zero to four subordinates before meeting with the director ($M = 1.77$, $SD = 1.35$). This was the measure of leader information-seeking behaviors. We also measured subjective ambivalence with a psychometric valid three-item scale adapted from Priester and Petty (1996). The items were "How conflicted were you about the decision," "How indecisive were you about the decision," and "How many mixed reactions did you have about the decision" (Cronbach's $\alpha = .81$). This scale was used as a manipulation check.

3.1.2 | Results and discussion

Table 1 shows the means and standard deviations for the variables in each condition. The scenario successfully produced the desired subjective ambivalence level in the participants. Analysis of variance (ANOVA) demonstrated that there were differences across the four different conditions ($F_{[3,396]} = 14.01$, $p < .001$, $\eta^2 = .10$). Results from a series of planned contrasts showed that participants in the ambivalence condition reported significantly higher levels of subjective ambivalence ($M = 3.80$ $SD = .92$) when compared to participants in the positivity ($M = 3.17$, $SD = .85$, $t = 5.06$, $p < .001$), negativity ($M = 3.24$, $SD = .90$, $t = 4.56$, $p < .001$), or indifference condition ($M = 3.06$, $SD = .87$, $t = 5.88$, $p < .001$). These results suggested that the subjective ambivalence manipulation was effective.[3]

Next, to test for Hypothesis 1, we examined the impact of the manipulation on leader information-seeking behaviors. One-way analyses of variance showed that there were significant differences in leader information-seeking behaviors across the four conditions ($F_{[3,396]} = 18.27$, $p < .001$, $\eta^2 = .12$). Planned contrasts showed that participants in the subjective ambivalence condition reported higher levels of leader information-seeking behaviors ($M = 2.57$, $SD = 1.29$) than participants in the positivity ($M = 1.44$, $SD = 1.26$, $t = 6.34$, $p < .001$), negativity ($M = 1.56$, $SD = 1.29$, $t = 5.71$, $p < .001$), or indifference condition ($M = 1.49$, $SD = 1.23$, $t = 5.99$, $p < .001$). We found initial support for Hypotheses 1.

These initial findings suggest that leaders who experience subjective ambivalence seek information about the situation more often than other leaders (positive, negative, or indifferent). However, we did not measure the theorized distal mechanism (team information seeking behaviors) and team task performance in Study 1. In Study 2, we manipulated leader subjective ambivalence and conducted a team activity that allowed us to examine all other components of our model including an objective measure of team task performance.

3.2 | Study 2

3.2.1 | Participants and procedures

We recruited 546 business school students from a large Midwest University early in 2020 (Indiana University Institutional Review Board approval 2003592500 - Title: Leader ambivalence and decisions). Upon arrival in the behavioral laboratory in blocks of twenty-four, participants were randomly assigned to teams of three: one leader and two subordinates. In total, there were 182 teams (182 leaders: 57.69% male, average age was 20.51 years [$SD = 1.28$], and 364 subordinates: 55.22% male, average age was 20.63 years [$SD = 1.19$]). All participants passed attention checks. Participation was voluntary, and all participants were included in a raffle for five $20 Amazon gift cards.

The experiment proceeded in five steps. First, participants read a brief introductory description of their roles. Participants in the leader role were told that they were in charge of leading the team whereas participants in the subordinate role were told that the leader would be overseeing them (C. Anderson & Berdahl, 2002; Galinsky et al., 2003). Second, the experimenter handled a packet with information pertinent to the task to all team members: one for the leader, one for subordinate 1, and one for subordinate 2. For this task, we adopted a modified version of the hidden profile, "murder mystery" decision task from Stasser and Steward (1992). Each participant received a unique packet containing interviews from a fictional homicide investigation, a list of suspects, and a map. Clues for solving the murder were embedded in the individual packets; some of these clues were shared by all members of them team, while others were unique to each team member. Participants had 15 min to individually prepare for their meetings by taking notes, as they were not allowed to bring the entire packet into the meeting.

Third, after their initial reading and analysis, leaders were randomly assigned to one of four conditions (ambivalence, positivity, negativity, and indifference). In the ambivalence condition ($n = 46$), we asked leaders to write three key supporting and three key opposing arguments for their initial assessment. In the positivity condition ($n = 47$), we asked leaders to write three key supporting arguments for their initial assessment. In the negativity condition ($n = 46$), we asked leaders to write three key opposing arguments for their initial assessment. In the indifference condition ($n = 43$), we asked leaders to write about the laboratory physical space. Writing about experiences is common practice to manipulate ambivalence (e.g., Guarana & Hernandez, 2016; Van Harreveld et al., 2014). It is important to note that we asked leaders to write about *key* arguments supporting and/or opposing their initial assessment to be consistent with the ambivalence definition and literature: intensity of opposing evaluations (Harrison & Dossinger, 2017; Priester & Petty, 1996; Rothman et al., 2017). Next, leaders filled out the three-item subjective ambivalence scale (Priester & Petty, 1996) also adopted in Study 1. (Cronbach's $\alpha = .87$) as a manipulation check.

Fourth, the leaders and subordinates were then allowed to meet and had 10 minut to decide which suspect to charge with the murder. It is worth noting that there were four suspects, and three had the same number of incriminating clues (six incriminating clues), but different numbers of exonerating clues (three for suspect A, two for suspect B, and none for suspect C). One suspect had no direct incriminating evidence against her, but it is often described as a suspect as well (see Galinsky & Kray, 2004). All leaders received information that incriminated suspect A; however, suspect C was the murderer. Put together, the leader and subordinates had all necessary information to dismiss the suspects except C, the true murderer. To solve the murder mystery, the leader had to seek for unique information (clues) from their subordinates.

TABLE 2 Descriptive statistics and correlations for Study 2 variables [a]

Variable	*M*	*SD*	1	2	3
1. Leader subjective ambivalence[b]	2.47	1.11			
2. Leader information-seeking behaviors	3.60	.76	−.22**	(.91)	
3. Team information-seeking behaviors	3.55	.99	−.16	.42**	
4. Team task performance[c]	.41	.49	−.27**	.30**	.32**

Note: Scale reliabilities are presented within parentheses along the central diagonal.
[a]$N = 182$.
[b]Leader indifference condition = 4, leader negativity condition = 3, leader positivity condition = 2, leader subjective ambivalence condition = 1.
[c]correct = 1, incorrect = 0.
$^{**}p < .01$. $^{*}p < .05$.

TABLE 3 Means of leader subjective ambivalence, leader information-seeking behaviors, team information-seeking behaviors, and team task performance, as a function of the assigned condition for Study 2

		Leader subjective ambivalence	Leader information-seeking behaviors	Team information-seeking behaviors	Team task performance
Category	*N*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
Ambivalence	46	3.93 (.74)	3.97 (.67)	3.86 (1.06)	.67 (.47)
Positivity	47	3.29 (.86)	3.47 (.74)	3.45 (.83)	.34 (.48)
Negativity	46	3.46 (.99)	3.47 (.73)	3.50 (1.04)	.33 (.47)
Indifference	43	3.40 (.87)	3.47 (.80)	3.36 (.99)	.28 (.45)

Fifth, after the meeting, we asked leaders and subordinates to fill out final surveys. We asked leaders to report on information-seeking behaviors by filling out a survey with four items adapted from Major and Kozlowski (1997), and Wanberg and Kammeyer-Mueller (2000). An example item is "I sought information from my subordinates" (Cronbach's $\alpha = .91$). Finally, because leaders are responsible for final decisions (Avolio, 2007; Yukl, 2010), we asked leaders to report which suspect was the murderer (coded as 1 if correct; coded as 0 if incorrect). They also filled out a demographics section.

Subordinates filled out a final survey with similar items measuring their information-seeking behaviors. The only difference was in the item "I sought information from my team members." Considering that our distal mediator is team information-seeking behaviors, we checked for agreement in information-seeking behaviors between the two subordinates by calculating weighted Cohen's Kappa. The agreement was within acceptable values ($\kappa = .69$ [95% CI, .62; .76], $p < .001$, Landis & Koch, 1977), and we averaged their ratings to create a measure of team information-seeking behaviors. Next, subordinates filled out a demographic section. We debriefed all participants at the end of the experiment.

3.2.2 | Results and discussion

The means, standard deviations, and correlations for the variables of interest appear in Table 2. Means and standard deviations per condition appear in Table 3. First, we conducted an ANOVA to investigate whether the leader subjective ambivalence manipulation resulted in different levels of ambivalence. The results showed significant differences across conditions ($F_{[3,178]} = 4.82$, $p = .003$, $\eta^2 = .08$). The results from planned contrasts suggested that leaders

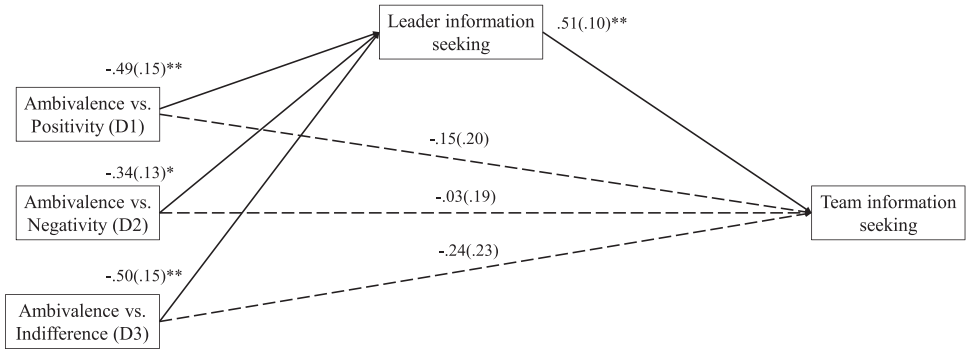

FIGURE 1 Path analysis results for the proposed multi-categorical mediation with leader subjective ambivalence as reference category for Study 2. All unstandardized coefficients with standard errors reported in parentheses
Note. Bootstrap sample size 10,000. $^{*}p < .01$, $^{**}p < .05$

in the ambivalence condition ($M = 3.93$, $SD = .74$) rated their subjective ambivalence higher than leader in the positivity ($M = 3.29$, $SD = .86$, $t = 3.53$, $p = .001$), negativity ($M = 3.45$, $SD = .99$, $t = 2.60$, $p = .01$), or indifference ($M = 3.40$, $SD = .87$, $t = 2.85$, $p = .005$) condition, suggesting that the manipulation was successful.

Using Mplus 8.4 (Muthén & Muthén, 1998-2017), we conducted multi-categorical path analyses with 10,000 bias-correct bootstrap samples. For the indirect effect hypotheses, we adopted multi-categorial mediation analysis, which allows for the simultaneous testing of all direct, indirect, and total effects. Given that the fixed factor, scenario, had four conditions, three dummy-coded variables were created (see Hayes & Preacher, 2014 for details) with subjective ambivalence as the reference group. Each dummy-coded variable corresponds to one of three possible contrasts: ambivalence versus positivity (D1), ambivalence versus negativity (D2), and ambivalence versus indifference (D3). Negative effects suggest that, in comparison to the reference group, participants in other groups showed lower levels of focal dependent variables.

First, we examined the impact of leader subjective ambivalence on leader information-seeking behaviors (Hypothesis 1). The path between D1 and leader information-seeking behaviors ($B = -.49$, $SE = .15$, $p = .001$) was significant. So were the paths between D2 and leader information-seeking behaviors ($B = -.50$, $SE = .15$, $p = .001$); and D3 and leader information-seeking behaviors ($B = -.50$, $SE = .15$, $p = .001$). Thus, all relative direct effects were significant suggesting that leader subjective ambivalence had a stronger effect on leader information-seeking behaviors. The results showed support for Hypotheses 1.

To test for the relationship between leader information-seeking behaviors and team information-seeking behaviors (Hypotheses 2), we regressed team information-seeking behaviors on leader information-seeking behaviors. The relationship was positive and significant ($B = .55$, $SE = .09$, $p < .001$). Next, we conducted a multi-categorical mediation analysis to test for the relative indirect effects of leader subjective ambivalence on team information-seeking behaviors via leader information-seeking behaviors (Hypothesis 3). The results are summarized in Figure 1. The paths between D1 ($B = -.49$, $SE = .15$, $p = .001$), D2 ($B = -.34$, $SE = .13$, $p = .012$), D3 ($B = -.50$, $SE = .15$, $p = .001$), and leader information-seeking behaviors were significant. As mentioned before, negative effects suggest that participants in conditions different from the ambivalence condition experienced lower levels of information-seeking behaviors. Therefore, the effects were in the hypothesized direction. The path from leader information seeking behaviors to team information-seeking behaviors ($B = .51$, $SE = .10$, $p < .001$) was also significant. Bootstrapping results showed that the confidence intervals for the relative indirect effects on team information-seeking behaviors did not contain

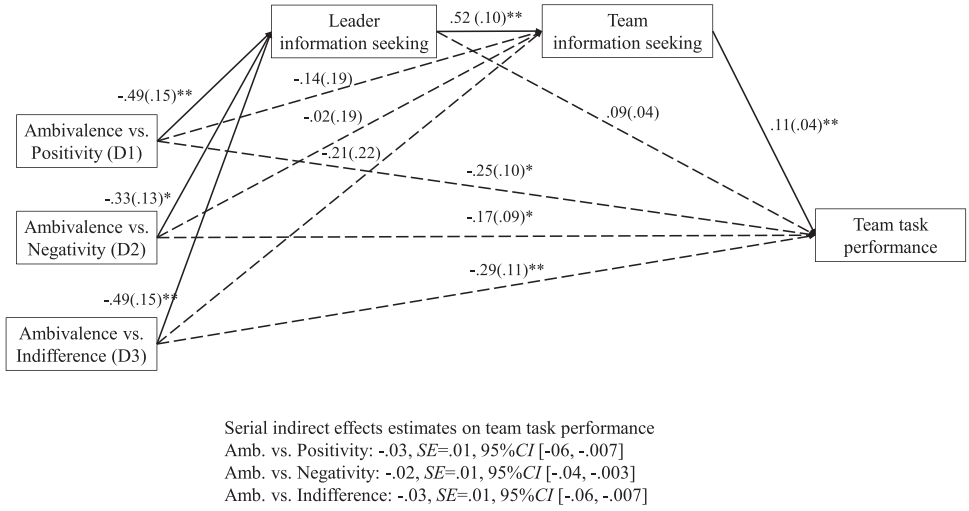

FIGURE 2 Path analysis results for the proposed categorical serial mediation with leader subjective ambivalence as reference category for Study 2. All unstandardized coefficients with standard errors reported in parentheses
Note. Bootstrap sample size 10,000. $^{*}p < .01$, $^{**}p < .05$

zero, providing support for mediation. (D1: *indirect effect* = -.25, 95% CI = -.42, -.10; D2: *indirect effect* = -.17, 95% CI = -.32, -.04; D3: *indirect effect* = -.25, 95% CI = -.45, -.09). We found support for Hypothesis 3.

To test for Hypothesis 4, which predicted that team information-seeking behaviors are positively related to team task performance we ran a logistic regression. The results showed a significant and positive relationship between team information-seeking behaviors and team task performance (*Exp(b)* = 2.12, *SE* = .18, $p < .001$). Hypothesis 4 was supported. Then, we conducted a multi-categorical serial mediation analysis to test for Hypothesis 5, which suggested that the positive relationship between leader subjective ambivalence and team task performance is serially mediated by leader information-seeking behaviors first, and team information-seeking behaviors later. We found that the paths between D1, D2, D3, and leader information-seeking behaviors were significant and the same reported before. The path from leader information-seeking behaviors to team information-seeking behaviors (*B* = .52, *SE* = .10, $p < .001$) and from team information-seeking behaviors and team task performance (*B* = .11, *SE* = .04, $p = .002$) were also significant. Bootstrapping results provided support for the relative serial indirect effects on team task performance. (D1: *indirect effect* = -.03, 95% CI = -.06, -.007; D2: *indirect effect* = -.02, 95% CI = -.04, -.003; D3: *indirect effect* = -.03, 95% CI = -.06, -.007). We found support for Hypothesis 5 (see Figure 2).

3.2.3 | Supplemental analyses

Although we are interested in how leader subjective ambivalence influence team task performance, and our theorizing focused on how subjective ambivalence influences team processes that lead to team task performance, we sought to test two additional models. First, we investigated the direct effects of leader subjective ambivalence on team task performance. Second, the indirect effect of leader subjective ambivalence on team task performance via leader information-seeking behaviors.

Adopting a similar analytical strategy to test for direct effect of leader subjective ambivalence on team task performance, the path between D1 and team task performance (*B* = -.33, *SE* = .10, $p = .001$) was significant. In addition, the paths between D2 and team task performance (*B* = -.22, *SE* = .08, $p = .008$); and D3 and team task performance

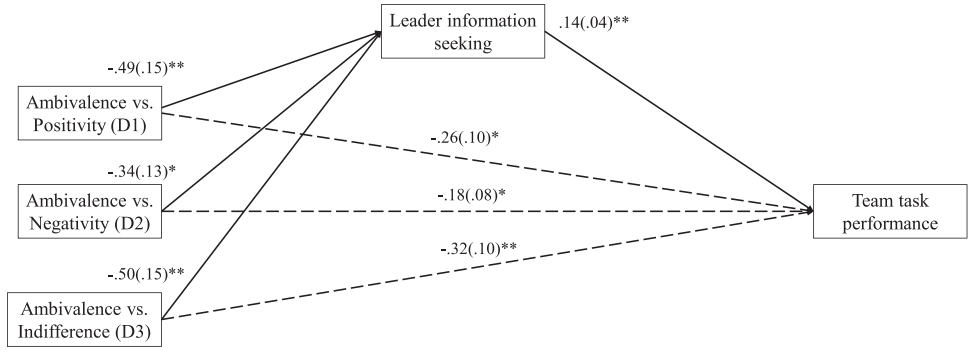

FIGURE 3 Path analysis results for the proposed categorical mediation with leader subjective ambivalence as reference category for Study 2. All unstandardized coefficients with standard errors reported in parentheses
Note. Bootstrap sample size 10,000. $^{*}p < .01$, $^{**}p < .05$

($B = -.39$, $SE = .10$, $p < .001$) were also significant. Thus, teams with ambivalent leaders performed better than teams that had leaders in the positivity, negativity, or indifference conditions.

We conducted another multi-categorical mediation analysis to test for the indirect effects of leader subjective ambivalence on team task performance via leader information-seeking behaviors. The paths between D1, D2, D3, and leader information-seeking were significant and the same as reported before. The path from leader information-seeking behaviors to team task performance ($B = .14$, $SE = .05$, $p = .002$) was also significant. Bootstrapping results provided support for the relative indirect effects on team task performance. (D1: *indirect effect* = -.07, 95% CI = -.14, -.02; D2: *indirect effect* = -.05, 95% CI = -.10, -.007; D3: *indirect effect* = -.07, 95% CI = -.15, -.02) (see Figure 3).

These findings suggest that leaders who experience subjective ambivalence have functional effects on team task performance through leader information-seeking behaviors, and team information-seeking behaviors. Therefore, Study 2 focused on behavioral mechanisms and a relevant organizational outcome of leader subjective ambivalence. Although we manipulated leader subjective ambivalence to minimize concerns over internal validity, these findings are based on a complex task (murder mystery) performed in a laboratory, which may raise concerns over external validity. In addition, although leaders and subordinates had to interact to solve the murder mystery, which can be an equivalent leadership process in complex projects, the nature of the task might not be generalizable. To overcome these limitations, and to extend the findings to examine whether leaders' subjective ambivalence increases leader information-seeking behaviors first, and team information-seeking behaviors later, and in turn, team task performance, we conducted Study 3. Study 3 is a longitudinal field study that also rules out several alternative explanations that could minimize the strength of our conclusions (e.g., transformational leadership, leader extraversion, and tenure).

3.3 | Study 3

3.3.1 | Participants and procedures

Leaders, their subordinates and project clients of a large multinational consulting company participated in a longitudinal study over the course of 2 years and four data collection phases in Study 3 (Indiana University Institutional

Review Board approval 1801645586 - Title: Ambivalence and leadership). Participants were not compensated for this study. The company was located in Brazil, had more than 7000 employees and served a variety of clients in different industries (ranging from health and oil and gas to technology and telecommunications) and had more than 150,000 employees globally.

The company maintained a project-based structure, and each project had a unique leader who reported to top executives. Consulting projects included creating innovation strategies; developing world-class supply chains; and recruiting, retaining, and managing talent. The consulting projects varied in complexity and execution time, with some simple projects (e.g., implementing a payroll system) compared to complex projects (e.g., increasing data-privacy systems). The consulting contracts were negotiated between top executives and clients, and once a contract was signed, the company assigned a project leader and three to six subordinates with unique backgrounds to the project. Most of the subordinates shared some level of expertise but were strategically selected to the project based on their unique background; this is consistent with how large consulting companies structure their teams (Morris et al., 2012). In some cases, the company had multiple projects with the same client, but project leaders did not compete for clients. Exploratory interviews indicated that contact between top executives and subordinates was rare and that contact between project leaders and subordinates varied considerably (ranging from daily to monthly).

After a few meetings with top executives in the United States and Brazil, we were given access to all employees involved in new consulting projects. We were also granted access to performance-evaluation surveys filled out by client project leaders. To avoid employee fatigue and increase the participation rate, we were asked to keep the number of items to a minimum.

Since the survey was administered to Portuguese-language speakers, we followed Brislin's (1970) back-translation procedure: the questionnaire was initially formulated in English, was then translated into Portuguese by a native Portuguese speaker and was then back-translated into English by another individual. A pilot questionnaire was reviewed by the company's human resources (HR) manager and administered to five randomly selected employees to evaluate the accuracy of the translation (these data were eliminated from the final data collection). They found the English and Portuguese versions of the questionnaire to be consistent.

The data-collection effort took place over 3 years (from 2018 to 2020) and consisted of four phases. Immediately after being assigned to a new project, every project leader during this period received an invitation to participate in the survey. The invitation briefly described the data-collection process and highlighted the time commitment to the survey. Purposefully, Phase 1 was kept short to increase project leader participation in the next phases. The first survey was administered to 220 project leaders and measured leaders' experience of subjective ambivalence in their new project, transformational leadership, extraversion, and demographics. We encouraged leaders to reflect on their new project before filling out the survey. Leaders also had to wait for at least 1 min before being able to proceed to the next page. Of the project leaders solicited, 201 filled out the questionnaire.

One week after receiving the project leader questionnaire, we gathered data for Phase 2. We sent surveys measuring project complexity to two top executives who had previously agreed to fill out brief surveys (two items) about the complexity of each new project. The response rate for the top executives was 100%. During Phase 3, at approximately the midpoint of the project, we used names and email addresses received from HR to collect network data on information seeking from project leaders and their subordinates. In this phase, leaders were presented with the information-seeking network items; for robustness a check, we also asked leaders to report their subjective ambivalence levels again. In addition, in this phase, subordinates were asked to fill out items measuring their information-seeking network. Subordinates also reported their subjective ambivalence, tenure with the leader, and demographics. We also asked subordinates to describe the communication they had with leaders over the project. Of the 201 projects, 173 leaders and 803 subordinates responded to the questionnaires.

In Phase 4, we gathered data on team task performance from clients by adding three items to the survey the consulting company sends to all client project leaders at the end of each project. Three client project leaders did not fill out the survey. After the matching process, we obtained data on 164 projects (164 leaders and 725 subordinates), for a response rate of 74% (leaders: 87.2% male, average tenure was 8.54 years [$SD = 4.43$], average age was 40.74

years [*SD* = 5.31]; subordinates: 87.17% male, average tenure was 2.53 years [*SD* = 1.27], average age was 28.42 years [*SD* = 2.69]). The 164 teams ranged in size from four to seven individuals, including the project leader. We adopted listwise deletion when handling missing data (R. J. Little & Rubin, 2002). Independent sample *t*-tests comparing the mean levels of gender and age between leaders who completed both phases and those who did not reveal any significant differences. Moreover, we found no significant effect of the starting date (quarter) on the main variables.[4]

3.3.2 | Measures

Leader subjective ambivalence. We adapted the same scale used in Studies 1 and 2 (Priester & Petty, 1996) to measure leader subjective ambivalence about the project. The three adapted items were "I am conflicted about the scope and direction of the new project," "I have mixed reactions about the scope and direction of the new project," and "I am certain about the scope and direction of the new project" (reverse coded). Project leaders filled out this scale twice (Phase 1 α = .87; Phase 3 α = .85).[5] In addition, we interviewed five leaders who scored high in the leader subjective ambivalence to better understand their interpretation of the items adopted in this scale, and minimize concerns with construct validity. Although, ambivalence is theoretically different from ambiguity, and uncertainty (see Rothman et al., 2017), participants may confound these constructs. We, particularly, asked for examples that represented their conflict. In general, they mentioned tensions when explaining ambivalence. For example, one leader said "I was struggling incorporating past experiences while, at the same time, breaking with those past experiences in this particular project. This client seems different." Another leader said "I was thinking about how to execute this project keeping in mind the broader implications to the client. The client has a new market strategy." All in all, the interviews suggested that leaders had some clarity over the project, but were still conflicted about the scope and direction of the new project, which is aligned with the definition and operationalization of subjective ambivalence.

Leader information-seeking behaviors. We used social network data (roster method) to collect data on leader information-seeking behaviors. Specifically, we adopted out-degree centrality as the measure of leader information-seeking behaviors. Out-degree centrality is simply a count of the number of subordinates in the team with whom the project leader sought information. Therefore, higher values indicated higher levels of information-seeking behaviors. Project leaders were asked to look at an alphabetical list of their subordinates and indicate how frequently they *initiated* project-related communication with each. Because we were interested in the frequency of information-seeking behaviors, we elicited valued responses for the social network item using a six-point scale: 1 = "Not in this project," 2 = "About monthly," 3 = "Several times a month," 4 = "Weekly," 5 = "Several times a week," and 6 = "Daily").

Team information-seeking behaviors. We computed the overall density of the unsymmetrized information-seeking network between all subordinates (excluding the project leader) to operationalize team information-seeking behaviors. Like the leader information-seeking behaviors, we asked subordinates to evaluate how frequently they sought information from other co-workers. In binary networks, density is the proportion of actual nominations among the total possible number of nominations (Wasserman & Faust, 1994). Because the relationships in the data were valued (i.e., measured on a scale from 1 to 6), we computed density as the sum of the actual responses divided by the total number of possible responses.

Team task performance. Task team performance was measured using 3 items from Schaubroeck et al. (2007). To minimize common-method bias, we measured team task performance from client project leaders, and not the leaders themselves. Client project leaders followed the development and implementation of the project and evaluated team task performance at the end of the project. The three items were "The team was very competent," "The team got the job done very effectively," and "The team performed the job well" (α = .79).

Project complexity. Two top executives agreed to evaluate the complexity of each project. The two top executives have more than 40 years of combined work experience in consulting. We adopted two items from the scale developed by Tushman (1978) and used by Haas (2010) to measure project complexity ("To what extent does the work in

this project depart from the usual work of a routine project" and "To what extent does the project require complex approaches and solutions?") and randomized the order of the consulting projects after removing any type of project leader information. We calculated the weighted Cohen's Kappa to determine if there was agreement between the two top executives. The agreement between the two raters was within acceptable levels ($\kappa = .84$, 95% CI [.77; .90], $p < .001$) (Landis & Koch, 1977) and so we averaged their ratings to create a measure of project complexity. Examples of complex projects were shifting the client's mindset from purely transactional to customer-centric and creating a local execution for global clients. Examples of simple projects were implementing a new payroll system and international tax regulation compliance.

Controls. We considered several potentially relevant control variables including team structural variables (team size, project length, project type, leader tenure, subordinate gender diversity, and leader gender), relational variables (subordinate work experience with the leaders), leader variables (leader extraversion, and transformational leadership). Previous research on team attributes (Carpenter et al., 2004) and network dynamics (Borgatti et al., 2013) and gender (N. Anderson et al., 2006) suggest that team size ($M = 4.49$, $SD = .60$, ranging from 3 to 6 subordinates), project length ($M = 4.02$, $SD = 1.14$, ranging from 2 to 6 months), and project type (e.g., operations, information technology, and management), leader tenure, subordinate gender diversity, and leader gender can all influence the number of subordinates that leaders interact with and the frequency of such interactions. Take, for example, long projects. They can create cognitive conflicts as well influence the frequency of leader information-seeking behaviors. Project length can also influence outcome expectations. In addition, different project types can influence leaders' ambivalence levels and also have different performance expectations. Therefore, to eliminate alternative explanations related to the structure of the team, we wanted to parse out the variance between these control variables and the mediators and dependent variables in the model.

Moreover, researchers have shown that characteristics of the relationships between leader and subordinate can influence performance (Sin et al., 2009). Leaders who develop quality relationships with subordinates will seek information more often, and subordinates will reciprocate with high-quality behaviors (for a meta-analysis on LMX, please see Dulebohn et al. (2012)). We modeled subordinates' average tenure working with their leader, to account for the relationship quality that project leaders could develop with subordinates. We controlled for leader extraversion because extraversion is related to network size, and team performance (e.g., Bono & Anderson, 2005; Russell et al., 1997) using a 10-item scale (Goldberg, 1993) (Cronbach's $\alpha = .89$). In addition, transformational leadership not only correlates with performance (e.g., Wang et al., 2011), but also influence cognitive processes (Avolio, 2007). We asked leaders to report their transformational leadership using the 16 items from the MLQ-5X scale (Bass & Avolio, 1997) ($\alpha = .91$). Therefore, to demonstrate the incremental validity of leader ambivalence on team performance, we control for leader and subordinate relationship quality, and leader characteristics.

That said, after a thorough examination of the bivariate correlations found in Table 5, we identify control variables that were correlated to, at least, one of the mediators, or dependent variables. These variables also relate to the key variables in the study in a manner consistent with the theory-based expectation that leader ambivalence influence team performance via cognitive flexibility first, and leader information-seeking behaviors. These control variables are structural (team size and project type), relational (subordinate tenure with the leader), and leader variables (leader extroversion, and transformational leadership). Specifically, we choose these set of variables to maximize statistical power and offer the most interpretable results. Nevertheless, we also ran the analyses with all control variables, and with no control variables to examine the robustness of the findings. The results were identical and are available upon request.[6]

3.3.3 | Results and discussion

Prior to testing our hypotheses, we conducted a confirmatory factor analysis (CFA) to assess the fit of the measurement model. Specifically, we included all focal variables in the analysis: leader subjective ambivalence, leader

TABLE 4 Path analysis coefficients for mediation in Study 3[a]

	Leader information-seeking behaviors			Team information-seeking behaviors		
	B	*b*	*SE*	*B*	*b*	*SE*
Constant	−4.82**		1.35	4.04**		.95
Leader subjective ambivalence	.32**	.24**	.10	.23**	.28**	.07
Leader information-seeking behaviors				.20**	.32**	.05
Subordinate tenure with leader	−.11	−.03	.27	.21	.09	.16
Team size	.28	.14	.16	−.16	−.13	.09
Project type dummy 1	−.10	−.04	.20	−.13	−.08	.13
Project type dummy 2	−.34	−.13	.26	−.21	−.13	.14
Leader extraversion	.88**	.38**	.20	.06	.04	.10
Transformational leadership	.25	.09	.22	−.21	−.01	.14
R^2		.27			.25	
	Bootstrapping effect			SE	95% CI (LL, UL)	
DV = Team information seeking						
Ind. effect via leader information seeking	.06			.03	.02; .12	

Note: Unstandardized and standardized regression coefficients are reported; Bootstrap sample size = 10,000.
[a]$N = 164$. *$p < .01$. **$p < .05$.

information-seeking behaviors (observed), team information-seeking behaviors (observed), project complexity, and team task performance. Given a large number of items, we followed Williams and O'Boyle (2008) and modeled the variables with three parcels using random assignment (T. D. Little et al., 2002). The hypothesized model with five factors fit the data: $\chi^2(27) = 43.64$, $p = .02$; CFI = .98; TLI = .97; RMSEA = .06, 90% CI .02, .09; and SRMR = .03, and all loadings were significant ($p < .05$). The hypothesized model fit the data significantly better than all other models in which any two or three of the five factors were combined ($27.97 \leq \Delta\chi^2$ s ($\Delta df = 4$) ≤ 452.77). The findings show the discriminant validity of the measures of the key constructs.

The means, standard deviations, and correlations for all variables are in Table 4. We calculated the variance inflation factor (VIFs) for each variable, and none of the variables had VIF values over 2, which suggests that multicollinearity was not present in this sample (Kutner et al., 2004). Because we used out-degree centrality, a social network approach to capture leader information-seeking behaviors, we calculated these measures using UCINET V6 (Borgatti et al., 2002). We tested all hypotheses in Mplus 8.4 (Muthén & Muthén, 1998-2017).[7] There were no estimation problems or correlation of measurement errors.

We first proposed that leader subjective ambivalence is positively related to leader information-seeking behaviors (Hypothesis 1). Path analysis results show that leader subjective ambivalence was positively related to leader information-seeking behaviors ($B = .32$, $SE = .10$, $p = .001$) after controlling for team size, project type, subordinate tenure with the leader, leader extraversion, and transformational leadership. These results provide evidence for Hypothesis 1.

Next, we tested for the effects of leader information-seeking behaviors on team-information seeking behaviors (Hypothesis 2). The results show that leader information-seeking behaviors was positively related to team information-seeking behaviors ($B = .24$, $SE = .05$, $p < .001$) after controlling for team size, project type, subordinate tenure with the leader, leader extraversion, and transformational leadership. These results provide evidence for Hypothesis 2.

TABLE 5 Descriptive statistics and correlations for Study 3 variables[a]

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1. Team task performance	3.73	.69	(.79)									
2. L. subjective ambivalence	3.21	.92	.45**	(.87)								
3. Leader information-seeking behaviors	1.65	1.24	.46**	.30**	–							
4. Team information-seeking behaviors	3.98	.76	.49**	.35**	.38**	–						
5. Project complexity	3.52	1.23	.18*	.25*	.13	.42**	–					
6. Transformational leadership	4.02	.43	.14	.20*	.13	−.03	−.13	(.91)				
7. Leader extroversion	3.98	.54	.12	.13	.40**	.17*	.05	.08	(.89)			
8. Subordinate tenure with leader	1.46	.34	−.01	.11	−.01	.09	−.09	.13	.01	–		
9. Team size	4.49	.60	−.01	.10	.20**	.01	.08	−.08	.09	.07	–	
10. Project dummy 1	0.39	0.49	−.11	−.13	−.04	−.08	−.02	.08	−.09	−.15	−.11	–
11. Project dummy 2	0.32	0.47	.11	.10	−.02	−.04	.01	−18*	.20*	.21**	−.13	−.55**

Note: Scale reliabilities are presented within parentheses along the central diagonal.
[a]$N = 164$. $^{**}p < .01$. $^{*}p < .05$.

Turning to the indirect effects of leader subjective ambivalence on team information-seeking behaviors, we predict that leader information-seeking behaviors (Hypothesis 3) will mediate that relationship. These analyses showed that the paths between leader subjective ambivalence and leader information-seeking behaviors ($B = .32, SE = .10, p = .001$) was significant as was the path between leader information-seeking behaviors ($B = .20$, $SE = .05$, $p < .001$) and team information-seeking behaviors. Bootstrap procedures using 10,000 resamples revealed significant indirect effects via leader information-seeking behaviors (*indirect effect* = .06, 95% CI .02, 12) providing support for Hypothesis 3 (see Table 5).

Hypothesis 4 suggests that team information-seeking behaviors is positively related to team task performance. The results show that team information-seeking behaviors was positively related to team task performance ($B = .46$, $SE = .06$, $p < .001$) after controlling the same set of control variables. These results provide evidence for Hypothesis 4. Next, we tested for the serial mediation hypotheses suggesting that leader subjective ambivalence influences team task performance via leader information-seeking behaviors first (first stage), and via team information-seeking behaviors later (second stage) (Hypothesis 5). Similar to prior models, we had one comprehensive analysis with all variables modeled simultaneously to provide a rigorous test for the hypotheses. The paths between leader subjective ambivalence and leader information-seeking behaviors ($B = .32, SE = .10, p = .001$) was significant. The path from leader information-seeking behaviors to team information-seeking behaviors ($B = .20$, $SE = .05$, $p < .001$) was significant. Team information-seeking behaviors predicted team task performance ($B = .28, SE = .06, p < .001$). Results from bootstrap procedures with 10,000 repetitions showed that the serial mediation models were significant for all indirect effects because the confidence interval did not contain zero (*serial indirect effect* = .018, 95% CI .004, 038) (See Table 6).

To test for the hypothesized first-stage serial conditional indirect effect model (Hypothesis 6), we began by examining the interactive effects of leader subjective ambivalence and project complexity on leader information-seeking behaviors. We mean-centered the independent variable and moderator (Aiken et al., 1991), and the results suggest that the interaction term was significant ($B = .30$, $SE = .08$, $p < .001$). We plotted the interactions to facilitate

TABLE 6 Path analysis coefficients for serial mediation in Study 3[a]

	Leader information-seeking behaviors			Team information-seeking behaviors			Team task performance		
	B	*b*	*SE*	*B*	*b*	*SE*	*B*	*b*	*SE*
Constant	−4.82**		1.35	4.04**		.95	2.48**		.76
Leader subjective ambivalence	.32**	.24**	.10	.23**	.28**	.07	.18**	.25**	.06
Leader information-seeking behaviors				.20**	.32**	.05	.18**	.33**	.04
Team information-seeking behaviors							.28**	.32**	.06
Subordinate tenure with leader	−.11	−.03	.27	.21	.09	.16	−.18	−.09	.15
Team size	.28	.14	.16	−.16	−.13	.09	−.07	−.06	.08
Project type dummy 1	−.10	−.04	.20	−.13	−.08	.13	.00	.00	.11
Project type dummy 2	−.34	−.13	.26	−.21	−.13	.14	.19	.13	.12
Leader extraversion	.88**	.38**	.20	.06	.04	.10	−.15	−.12	.10
Transformational leadership	.25	.09	.22	−.21	−.12	.14	.09	.06	.12
R^2		.27			.25			.42	
	Bootstrapping Effect			SE			95% CI (LL, UL)		
DV = Team task performance Serial ind. effect via leader and team information	.018			.01			.004; .038		

Note: Unstandardized and standardized regression coefficients are reported; Bootstrap sample size = 10,000.
[a]$N = 164$. *$p < .01$. **$p < .05$.

interpretation (see Figure 4). Consistent with our theorizing, at low levels of leader subjective ambivalence the 95% confidence intervals of low and high project complexity overlap suggesting that leaders seek for similar amounts of information despite the complexity of the project; however, at high levels of leaders subjective ambivalence the 95% confidence intervals of low and high levels of project complexity do not overlap suggesting that leaders seek for more information when the project is high in complexity compared to when the project is low in complexity. Next, we adopted bootstrap procedures to test for the serial indirect effects at different levels of the moderator (project complexity). At one standard deviation above the mean, bootstrap procedures showed that the serial mediated moderated models were significant (*serial indirect effect* = .028, 95% CI .010, .067). At one standard deviation below the mean, however, the serial mediated models were not significant (*serial indirect effect* = -.001, 95% CI -.015, .009; *Difference* = .029, 95% CI .009, .072). Together, the results suggest that leader subjective ambivalence is more likely to influence team task performance through leader information-seeking behaviors, and later via team information-seeking behaviors when project complexity is high (See Table 7 and Figure 5).

3.3.4 | Supplemental analyses

Similar to Study 2, we ran the same two additional models to provide a thorough understanding of the relationships in our dataset. First, we tested the direct effects of leader subjective ambivalence on team task performance. The results show that leader subjective ambivalence was positively related to team task performance ($B = .32$, $SE = .05$,

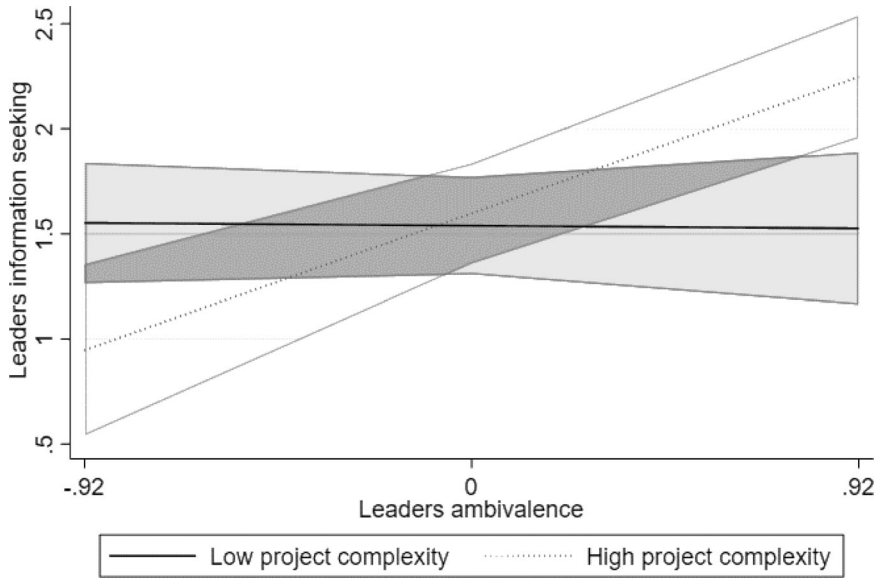

FIGURE 4 The interactive effect of leader subjective ambivalence and project complexity on leader information-seeking behaviors with 95% confidence interval for Study 3

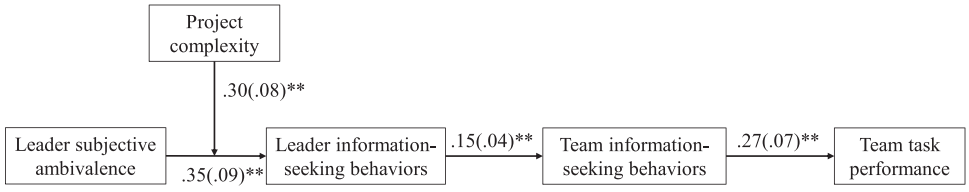

FIGURE 5 Path estimates for path analysis for Study 3. Paths are unstandardized parameter estimates with standard errors in parentheses. $^{*}p < .01$, $^{**}p < .05$. Estimates for control variables and other indirect and direct effects not illustrated for simplicity, but can be found in Table 7

$p < .001$) after controlling for team size, project type, subordinate tenure with the leader, leader extraversion, and transformational leadership (see Table 8).

We then tested if leader information-seeking behaviors accounted for the relationships between leader subjective ambivalence and team task performance and modeled direct, indirect effects, and control variables simultaneously. The path between leader subjective ambivalence and leader information-seeking behaviors ($B = .32$, $SE = .10$, $p = .001$) was significant. The path between leader information-seeking behaviors and team task performance ($B = .24$, $SE = .04$, $p < .001$) was also significant. Bootstrap procedures using 10,000 resamples revealed a significant indirect effect to team task performance (*indirect effect* = .08, 95% CI .03, 13) (see Table 9).

4 | DISCUSSION

In this research, we set out to explain the association between leader subjective ambivalence and team performance by establishing leader information-seeking behaviors, and in turn team information-seeking behaviors, as the two-stage intervening mechanism. Further, we sought to delineate a project level characteristic moderator that would strengthen the positive relationship between leader subjective ambivalence and leader information-seeking

TABLE 7 Path analysis coefficients for serial first-stage moderated mediation in Study 3[a]

	Leader information-seeking behaviors			Team information-seeking behaviors			Team task performance		
	B	*b*	*SE*	*B*	*b*	*SE*	*B*	*b*	*SE*
Constant	−3.82**		1.21	4.21**		.87	3.09**		.83
Leader subjective ambivalence	.35**	.26**	.10	.18**	.22**	.07	.22**	.30**	.06
Project complexity	.02	.02	.08	.21**	.34**	.04	−.04	−.06	.04
Int. leader ambivalence and project complexity	.30**	.26**	.08	.13*	.18*	.05	.11*	.18**	.05
Leader information-seeking behaviors				.15**	.24**	.05	.15**	.28**	.04
Team information-seeking behaviors							.27**	.30**	.07
Subordinate tenure with leader	.11	.03	.27	.37*	.17*	.16	−.11	−.06	.16
Team size	.27	.13	.16	−.18*	−.14*	.08	−.06	−.06	.08
Project type dummy 1	−.10	−.04	.20	−.17	−.11	.13	.01	.001	.11
Project type dummy 2	−.36	−.13	.25	−.27	−.17	.13	.18	.012	.12
Leader extraversion	.82**	.36**	.20	.07	.05	.09	−.14	−.11	.10
Transformational leadership	.23	.08	.22	−.10	−.05	.13	.06	.04	.12
R^2		.33			.38			.45	
	Bootstrapping effect				SE		95% CI (LL, UL)		
DV = Team task performance									
Serial ind. effect via leader and team information seeking									
−1SD (-1.23)	−.001				.006		−.015; .009		
+1SD (+1.23)	.028				.012		.010; .067		
Difference	.029				.014		.009; .072		

Note: Unstandardized and standardized regression coefficients are reported; Bootstrap sample size = 10,000.
[a]$N = 164$. *$p < .01$. **$p < .05$.

behaviors—project complexity. Our conceptual model was fully supported. Analyses of indirect effects indicated that leader's subjective ambivalence was more likely to influence team task performance through leader information-seeking behaviors, and later via team information-seeking behaviors when project complexity was high. However, at low levels of leader subjective ambivalence, leader information-seeking did not vary as a function of different levels of project complexity.

4.1 | Theoretical implications

These findings extend theory in several ways. First, we advance ambivalence scholarship by linking ambivalence-induced intrapersonal processes with interpersonal dynamics, thus demonstrating how seemingly independent processes operate together in a two-step process to influence performance within a team. To understand the benefits of this integrative approach, it is important to examine our findings in the context of prior work. For instance,

TABLE 8 Path analysis coefficients on team task performance for Study 3[a]

	Team task performance		
Variables	***B***	***b***	***SE***
Constant	2.50**		.68
Subordinate tenure with leader	−.15	−.07	.15
Team size	−.05	−.04	.08
Project type dummy 1	−.06	−.04	.12
Project type dummy 2	.05	.04	.13
Leader extraversion	.07	.05	.09
Transformational leadership	.09	.06	.12
Leader subjective ambivalence	.32**	.43**	.05
R^2		.22	

Note: Unstandardized and standardized regression coefficients are reported.
[a]$N = 164$. **$p < .01$. *$p < .05$.

TABLE 9 Path analysis coefficients for mediation in Study 3[a]

	Leader information-seeking behaviors			Team task performance		
	B	***B***	***SE***	***B***	***b***	***SE***
Constant	−4.82**		1.35	3.63**		.85
Leader subjective ambivalence	.32**	.24**	.10	.25**	.33**	.06
Leader information-seeking behaviors				.24**	.43**	.04
Subordinate tenure with leader	−.11	−.03	.27	−.12	−.06	.13
Team size	.28	.14	.16	−.12	−.10	.09
Project type dummy 1	−.10	−.04	.20	−.04	−.03	.12
Project type dummy 2	−.34	−.13	.26	.13	.09	.13
Leader extraversion	.88**	.38**	.20	−.14	−.11	.10
Transformational leadership	.25	.09	.25	.03	.02	.12
R^2		.27			.35	
	Bootstrapping effect			SE	95% CI (LL, UL)	
DV = Team task performance						
Ind. effect via leader information seeking	.08			.03	.03; 13	

Note: Unstandardized and standardized regression coefficients are reported; Bootstrap sample size = 10,000.
[a]$N = 164$. *$p < .01$. **$p < .05$.

Rothman and Melwani (2017) theorize two separate paths by which leader ambivalence may be functional in organizations: the first suggests that leader's experience of ambivalence increases leaders' adaptable decision making and the second proposes that leaders' expressions of ambivalence increase followers' empowerment and proactivity because it is interpreted as a signal of the leader's cognitive flexibility. We advance this work using a social learning-based explanation in which the leader's ambivalence-induced-information seeking behavior crosses over to increase follower information-seeking behavior. Together, we thus highlight the conceptual usefulness of combining these two processes by linking intrapersonal leader variables (ambivalence to information seeking) to team behavior (follower

information seeking) and team performance. As Dinh et al. (2014), p. 14), "in many instances, it is the combined effects of intrapersonal and interpersonal processes that produce emergent phenomena in organizations."

Second, we contribute to research on ambivalence by offering a likely reason for why inconsistent results have been found in previous ambivalence research. As we have noted, there are two emerging lines of discrepant thought on the effects of leader subjective ambivalence on subordinates. On the one hand, research demonstrating the negative effects of leader ambivalence on subordinates finds that leader subjective ambivalence, particularly ambivalence about the subordinate, hurts individual subordinate task engagement (e.g., Lim et al., 2021). This is because ambivalence about the subordinate signals unpredictability and produces anticipated stress. On the other hand, research suggests that leaders' subjective ambivalence about complex issues can increase broader participation by subunits and thus broader, and more novel strategic responses (e.g., Guarana & Hernandez, 2015; Plambeck & Weber, 2009). The bifurcations in the ambivalence literature have led scholars to call for research that takes into account mechanisms and moderators when examining the effects of ambivalence in order to provide some consensus in the literature (Rothman et al., 2017).

Whereas recent scholarship has started to identify when leader ambivalence is harmful—particularly when the leader is ambivalent about the subordinate (e.g., Lim et al., 2021), we help to advance the leader ambivalence scholarship by identifying an organizational condition explaining when it is helpful—particularly when projects are complex. Rothman and Melwani (2017) implied that the benefits of leader ambivalence would be realized in complex and changing circumstances. Similarly, we test whether project complexity enhances the positive effect of leader subjective ambivalence on information seeking. Importantly, our first two studies hold project complexity constant at a high level and demonstrate the predicted benefits of ambivalence for information seeking and team performance. Our third study demonstrates that the predicted effects of leader subjective ambivalence on information seeking are strengthened when project complexity is high. When leader subjective ambivalence is low, there is no effect of project complexity. This was predicted based on ambivalence amplification theory and subsequent empirical findings which suggests that ambivalent individuals are more influenced by contextual cues than less ambivalent individuals. Thereby, we offer a consensus creation perspective indicating that the benefits of ambivalence can be even more properly understood when conceptually relevant moderators are considered. In the process, we also highlight the relevance of work that suggests that leadership studies need to look not only within the leader but also within the team and the task context (e.g., Morgeson et al., 2010; Zaccaro et al., 2001).

Finally, our results (see Tables 5 and 6) indicate that controlling for leader extraversion did not influence our results. Although we had not formally hypothesized that extraversion influences leadership processes and team dynamics, the results are consistent with and support prior theorizing and findings. For instance, meta-analytical results show that extraversion is related to leadership emergence and effectiveness (Do & Minbashian, 2014; Wilmot et al., 2019); and extraverted supervisors engage in direct and indirect inquiry (Ashford et al., 2016). Our results support this proposition by indicating that leader extraversion is related to information-seeking behaviors, however, once these effects are partial out, we still find that leader subjective ambivalence positively influences information-seeking behaviors and team task performance.

4.2 | Managerial implications

Our research highlights the importance of leaders' experience of subjective ambivalence for team performance. Although leaders may be especially reluctant to engage in downward information seeking because of the risk it poses to them (e.g., fear of losing power and control over decision making; fear of being perceived as incompetent), leader information-seeking lies at the root of team processes that are critical for team success (Zaccaro et al., 2001). As such, leader information-seeking constitutes "what needs to be done for effective performance" (Hackman & Walton, 1986, p. 77) and so there is practical value in understanding its benefits. Leaders can be roadblocks to promoting effective

team processes. However, our research suggests that leaders can overcome these tendencies by remaining open to their own ambivalence.

Further, given the moderating role of project complexity, organizations seeking to improve team performance might especially benefit when leaders are encouraged to cultivate ambivalence during complex projects. By the same token, leaders who want to benefit from their subjective ambivalence might need to ensure that projects are perceived as appropriately complex. Specifically, organizations could invest in procedural structures that encourage ambivalence. For instance, by encouraging within- and across-department debates through formal and informal meetings and cultivating counterfactual thinking through formal debriefing. They can also cultivate organizational cultures (e.g., Rothman & Pratt, forthcoming) that increase the chances for leaders to experience subjective ambivalence, and reduce their impulsive to suppress this complex state.

4.3 | Limitation and future research

These findings should be qualified by several limitations suggestive of future research opportunities. First, our field study (Study 3) was conducted in a Brazilian organization. Brazilian leaders may be high in collectivism (Hofstede, 1980), which may limit the generalizability of the results to Western contexts like the United States that are higher on individualism. For instance, as a function of their collectivism, defined as considering oneself as a member of a larger social group, rather than as an isolated, independent being (Triandis, 1993), Brazilian leaders may be more inclined to seek information from team members and subordinates may also be more inclined to discuss project-related issues with their co-workers. Consequently, it would be important for future research to examine how processes related to ambivalence-induced-information seeking behaviors that we uncovered in Brazil are the same or different in more individualistic countries. To alleviate some concern about the generalizability of our findings, our first and second studies were conducted in the United States—with full-time employees (Study 1) and university students (Study 2)—and reveal consistent findings. Nevertheless, future research can fruitfully investigate whether the effects of leader subjective ambivalence on team performance are influenced by individualistic and collectivistic cultures to further unpack whether the effects of leader ambivalence are shaped by cultural values related to interdependence.

Second, in Study 3, we adopted a social network approach to measure leader information-seeking behaviors and team information-seeking behaviors. While we asked participants to assess the extent to which they engaged in information-seeking with their leaders and team members, we did not measure the specific content of the conversations between leaders and team members. Even with these measures, our results in Study 3 were consistent with our results in Studies 1 and 2, where we measured information-seeking behaviors in psychometric valid ways. To extend our findings further into the networking literature, future research could record and code conversations between team members to precisely measure the content of the information flowing through the network.

Third, a potentially fruitful direction for future research involves identifying other boundary conditions beyond project complexity for the relationship between leader subjective ambivalence and team performance. In Study 3, we demonstrated that the effects of leader ambivalence on team task performance was stronger in highly complex projects. Other project characteristics, such as task interdependence (Saavedra et al., 1993), the degree to which group member interaction and coordination are required to complete the task (Guzzo & Shea, 1992), could also moderate the proposed relationship. Researchers have argued that team members working on an interdependent task can develop a shared understanding of their situation (Wageman, 1995) because they have to interact with one another to perform the task (Saavedra et al., 1993). Perhaps in highly interdependent teams, ambivalence-induced-leader information seeking could also be normalized. If teams and leaders interact a great deal, it may reduce some of the perceived risk to leaders that is associated with asking team members for information rather than telling them about their own perspective.

Finally, the effects of leader subjective ambivalence on team task performance are likely to be more nuanced than we acknowledged in this research. Specifically, Guarana and Hernandez (2015) theorized that shared leader *and*

subordinate ambivalence can trigger different contextual interpretation processes (sense-jumping, upward sense-giving, downward sense-giving, and sense-building). Thus, it is possible that the benefits of leader subjective ambivalence are stronger when subordinates also experience ambivalence. Future research might test these dynamic processes, including the interaction between subordinate ambivalence and leader ambivalence on team task performance.

5 | CONCLUSION

The findings in this research demonstrate that leaders who experience subjective ambivalence increase team performance because these leaders seek information from subordinates, and in turn, subordinates seek information from one another. Further, we delineate project complexity as a key boundary condition for these benefits. Leader subjective ambivalence has a stronger effect on leader information seeking, team member information seeking, and thus team task performance in highly complex projects. We thus highlight the conceptual and empirical usefulness of integrating ambivalence scholarship and social learning theory for creating some consensus in the ambivalence literature around the mechanisms and moderators that help to explain when subjective ambivalence in leadership is beneficial.

DATA AVAILABILITY STATEMENT

The data that support the findings of these studies are openly available in The Center for Open Science at https://osf.io/r8nxt/?view_only=07508b5bc87b48dba07851221e49ff7b

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ENDNOTES

[1] The positive and negative evaluative components that together form ambivalence can come from many sources. Both evaluative components can be cognitive in nature (e.g., Eagly & Chaiken, 1993), but ambivalence can also be investigated in the context of inconsistencies between cognitive and affective elements (Lavine et al., 1998), between emotions (e.g., Fong, 2006; Larsen, McGraw & Cacioppo, 2001; Rees et al., 2013), and so on.

[2] Please see appendix for the full scenarios

[3] Anonymized data, syntax, and output for all three studies are available at https://osf.io/r8nxt/view_only=07508b5bc87b48dba07851221e49ff7b

[4] We also ran all models adopting full-information maximum likelihood, instead of adopting a listwise deleting approach. The significance of the results did not change, and the results are available upon request.

[5] Considering the importance of construct validity, we conducted a study on MTurk to provide evidence for our measure of subjective ambivalence. We asked 80 full-time employees (53.80% male, average age was 35.18 years [$SD = 9.13$]) to recall a project in which they experienced subjective ambivalence or indifference. Participants were randomly assigned to one of the conditions. After writing about the ambivalent or indifferent project, we asked participants to fill out a scale composed of four items: the original three items of the Priester and Petty (1996) scale plus the reversed coded item adopted in this study. The items were: "I was conflicted about the scope and direction of the project," "I had mixed reactions about the scope and direction of the project," "I was indecisive about the scope and direction of the project" and "I was certain about the scope and direction of the project" (reverse coded). $\alpha = .90$. The correlation between the two last items was high ($r = .88$) providing evidence for the interchangeability between them.

[6] We would like to thank an anonymous reviewer for this suggestion.

[7] As a supplementary analysis, we conducted a t-test to investigate whether leader subjective ambivalence levels changed from Phase 1 (at the beginning of the project) to Phase 3 (at the midpoint of the project). There was a significant difference in leader subjective ambivalence levels from Phase 1 ($M = 3.22$, $SD = .92$) to Phase 3 ($M = 2.89$, $SD = 70$, $t[326] = 3.56$, $p < .001$). This finding is consistent with the theory that leaders seek information to thoroughly understand the context and reduce the cognitive discomfort created by experiencing ambivalence. In addition, we investigated whether leaders' subjective ambivalence in Phase 1 (at the beginning of the project) was correlated with subordinates' subjective ambivalence in Phase 3 (at the midpoint of the project). The correlation was positive and significant ($r = .28$, $p < .001$), suggesting that leaders who were experiencing subjective ambivalence triggered ambivalence in their subordinates. Also, the correlation was significant

($r = .26$, $p < .001$) when leaders' subjective ambivalence and subordinates' subjective ambivalence were measured in Phase 3 (at the midpoint of the project).

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How to cite this article: Guarana, C. L., Rothman, N. B., & Melwani, S. (2022). Leader subjective ambivalence: Enabling team task performance via information-seeking processes. *Personnel Psychology*, 1–32. Advance online publication. https://doi.org/10.1111/peps.12516

APPENDIX A

STUDY 1A– AMBIVALENCE MANIPULATION

Ambivalence condition

You are a senior consultant of a large consulting firm. Your team manages a portfolio of projects focused on grocery retailers in the Northwest. The director of your division assigned you to a new client.

The client, a midsize grocery chain, wants to introduce home delivery to their customers. The director wants your recommendation after you review the memo. In sum, your job is to analyze the feasibility of the initiative.

After carefully reviewing and analyzing the memo, internal data, and client's data you had **strong conflicted** impressions about the initiative. Although it seems that the project has the potential to be successful, it also can be a failure. According to your assessment, (1) the main **strength** of the home delivery initiative is to provide convenience to customers. In addition, (2) customers are virtually close to the client. Customers can shop for groceries online at any place and time. (3) Also, the client can customize its pricing strategies based on seasonal demands. However, introducing home delivery has some weaknesses as well. (1) The main **weakness** is the initial investment in infrastructure. The

client has to develop a state-of-art website. In addition, (2) the client will compete with giants in the industry. (3) Also, the client will have to create the logistics for home delivery. Investing in logistics is also capital intensive.

All in all, it seems that there is trend in consumer preferences to move to home delivery, but competition is fierce. In short, the numerous strengths and weakness of the initiative **make you conflicted**. There are many aspects of the initiative that **strongly support moving forward**, but there are many other aspects that **strongly oppose the initiative**.

You will meet with the director to discuss the initiative shortly.

Positive condition

You are a senior consultant of a large consulting firm. Your team manages a portfolio of projects focused on grocery retailers in the Northwest. The director of your division assigned you to a new client.

The client, a midsize grocery chain, wants to introduce home delivery to their customers. The director wants your recommendation after you review the memo. In sum, your job is to analyze the feasibility of the initiative.

After carefully reviewing and analyzing the memo, internal data, and client's data you had **strong positive** impressions about the initiative. According to your assessment, (1) the main **strength** of the home delivery initiative is to provide convenience to customers. In addition, (2) customers are virtually close to the client. Customers can shop for groceries online at any place and time. (3) Also, the client can customize its pricing strategies based on seasonal demands.

All in all, it seems that there is trend in consumer preferences to move to home delivery. In short, the numerous strengths in this initiative make you **enthusiastically support** this project.

You will meet with the director to discuss the initiative shortly.

Negative condition

You are a senior consultant of a large consulting firm. Your team manages a portfolio of projects focused on grocery retailers in the Northwest. The director of your division assigned you to a new client.

The client, a midsize grocery chain, wants to introduce home delivery to their customers. The director wants your recommendation after you review the memo. In sum, your job is to analyze the feasibility of the initiative.

After carefully reviewing and analyzing the memo, internal data, and client's data you had **strong negative impressions** about the initiative. (1) The main **weakness** is the initial investment in infrastructure. The client has to develop a state-of-art website. In addition, (2) the client will compete with giants in the industry. (3) Also, the client will have to create the logistics for home delivery. Investing in logistics is also capital intensive.

All in all, it seems that competition is fierce in-home delivery. In short, the numerous weaknesses in this initiative that make you **strongly oppose this project**.

You will meet with the director to discuss the initiative shortly.

Neutral condition

You are a senior consultant of a large consulting firm. Your team manages a portfolio of projects focused on grocery retailers in the Northwest. The director of your division assigned you to a new client.

The client, a midsize grocery chain, wants to introduce home delivery to their customers. The director wants your recommendation after you review the memo. In sum, your job is to analyze the feasibility of the initiative.

In short, the numerous strengths and weakness of the initiative **make you neutral**. You do not **strongly support or oppose the initiative**.

You will meet with the director to discuss the initiative shortly.

APPENDIX B

STUDY 1B- REGRESSION RESULTS FOR THE RELATIONSHIP BETWEEN LEADER SUBJECTIVE AMBIVALENCE ON LEADER INFORMATION-SEEKING BEHAVIOR. MODELS WERE RUN ON MPLUS

	Leader-information seeking		
Variables	***B***	***b***	**SE**
Constant	2.57**		.13
Dummy 1 – difference between ambivalence and positivity	−1.13**	−.37**	.18
Dummy 2 – difference between ambivalence and negativity	−1.02**	−.33**	.02
Dummy 3 – difference between ambivalence and indifference	−1.08**	−.34**	.18
R^2		.12	

Note: Unstandardized and standardized coefficients are reported. [a] $N = 400$. $^{**}p < .01$. $^{*}p < .05$.