Received: 25 January 2022 | Revised: 15 December 2022 | Accepted: 19 December 2022

DOI: 10.1111/peps.12570

PERSONNEL PSYCHOLOGY WILEY

ORIGINAL ARTICLE

When leaders heed the lessons of mistakes: Linking leaders' recall of learning from mistakes to expressed humility

Jia (Jasmine) Hu[1] | Shuxia Zhang[2] | Robert B. Lount Jr[1] | Bennett J. Tepper[1]

[1]Fisher College of Business, The Ohio State University, Columbus, Ohio, USA

[2]Mike Ilitch School of Business, Wayne State University, Detroit, Michigan, USA

Correspondence
Jia (Jasmine) Hu, Fisher College of Business, The Ohio State University, Columbus, OH, USA.
Email: hu.757@osu.edu

Funding information
Fisher Leadership Initiative, at the Ohio State University

Abstract

Making mistakes is an inevitable part of leadership, but little is known about how and when leaders benefit from reflecting on their missteps. In this paper, we propose that mistakes, when reflected upon, have the potential to increase a leader's expressed humility. We detail how having leaders recall past mistakes can help them formulate plans for learning and encourage them to express humility. We also argue that this positive relationship is strengthened when leaders have a promotion focus. We detail downstream benefits, as increased levels of leaders' expressed humility are expected to increase their teams' improvement-oriented behaviors and, subsequently, team performance. Across multiple studies and using varied methods (i.e., scenario-based experiments with 955 managerial leaders, a laboratory experiment with 210 student leaders and team members, and a daily field experiment with 85 managers), we empirically test the proposed relationships. Our studies contribute to the literature by identifying leaders' recall of learning from mistakes as an important intervention to elicit their expressed humility.

KEYWORDS
leader humility, promotion focus, recall of learning from mistakes

"A mistake that makes you humble is much better than an achievement that makes you arrogant."
– Anonymous

1 | INTRODUCTION

Research suggests that individuals who have an inflated sense of self-importance and entitlement are more likely to be selected as leaders (Grijalva et al., 2015) and that it is not uncommon for leaders to display arrogance and require admiration from followers (Chatterjee & Hambrick, 2007). Scholars, however, have highlighted the limitations associated with possessing such qualities and have suggested that effective leaders should instead behave with humility (Owens & Hekman, 2012). Consistent with this philosophy, high-performing employees, teams, and organizations often have leaders who display humility—a malleable, interpersonal quality that is manifested by three interrelated behaviors: (1) acknowledgment of one's limitations and weaknesses, (2) appreciation of others' strengths and contributions, and (3) openness to new insights and feedback (Owens et al., 2013).

Given the benefits of leader humility (Ou et al., 2014, 2018; Owens & Hekman, 2012, 2016), an important question follows: What triggers leaders to display higher levels of humility? Conceptual and empirical work has drawn attention to several possible antecedents to humility such as religiousness (Krause & Hayward, 2014), attachment (Dwiwardani et al., 2014), individual differences in Machiavellianism (Morris et al., 2005), growth mindset, and relational identity (Wang et al., 2018). This growing body of research sheds light on the personal factors that antecede humility, but it remains unclear how situational factors may also contribute to eliciting leader humility. Scholars have suggested that although some leaders may more easily gravitate toward humble behaviors than others, humble behaviors are likely to be modified according to situations and experiences (Owens et al., 2015; Vera & Rodriguez-Lopez, 2004). Indeed, Nielsen and Marrone (2018) highlight that "greater attention to the psychological aspects of situations that trigger the development (or display) of humility could advance our understanding of the possible ways that organizations can build employee humility" (p. 819).

Our research contributes to the literature in several ways. First, we extend current theory and research, which has emphasized personal attributes as antecedents of humility, by specifying a situational trigger—an intervention involving leader recall of learning from mistakes—that activates humility in leaders. We also clarify that not all individuals respond the same way to such an intervention by showing that a higher level of promotion focus—"a concern with advancement, growth, and accomplishment" (Higgins, 1997, p. 1282)— strengthens the humility-inducing effect of leader recall of learning from mistakes, relative to the effect under a lower level of promotion focus. Second, research on antecedents of humility is limited with regard to workplace implications, as most studies do not focus on leaders, nor do they discuss the distal work-related effect of the antecedents. In this research, we seek to explain how leaders' recall of learning from mistakes promotes expressed humility in the workplace (a relationship mediated by increased planned learning). Third, our research also adds to the leadership development literature, which suggests that leaders' self-knowledge/awareness requires more research (Day & Dragoni, 2015; Liu et al., 2021; Vogel et al., 2021). Our research highlights that interventions that center on having leaders recall a mistake they have learned from can have positive implications for improved team functioning.

Figure 1 depicts the model underlying our theory development and empirical work. We propose that leaders' recall of learning from mistakes triggers expressions of humility, which in turn facilitates team improvement-oriented behavior (i.e., team learning and team voice) and subsequently, team performance. Furthermore, this process is strengthened by leaders' promotion focus, such that leaders with higher promotion focus are more likely to harvest the benefits of learning from mistakes and display higher levels of humility. We test our theoretical model in three scenario-based

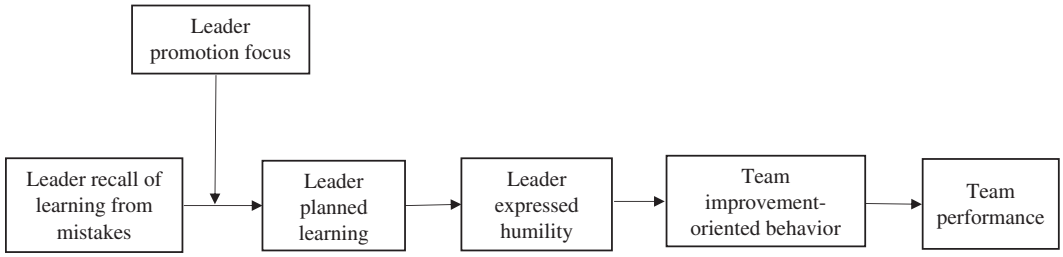

FIGURE 1 Theoretical model

experiments with 955 managerial leaders, a laboratory experiment with 210 student leaders and team members, and a daily field experiment with 85 managers.

2 | THEORY AND HYPOTHESIS DEVELOPMENT

2.1 | From leader recall of learning from mistakes intervention to expressed humility

We propose that leaders who recall learning from their mistakes are more likely to display humble behaviors. This feature of our conceptual work is consistent with experiential learning theory, which frames concrete experiences, including making mistakes, as precursors to adjustments in individuals' thinking and behavior (Kolb, 1984).

Learning from mistakes helps leaders become self-aware of personal limits (Kolb, 1984). Recalling learning from their mistakes activates leaders' memory about how and why things do not always unfold as expected and guides them to think about the lessons they learned (Argyris, 1976; Louis & Sutton, 1991). Importantly for our theorizing, the process of reflecting on one's mistakes should engender a defining feature of humility in leaders: an acknowledgment of their own shortcomings (Kolb, 1984; Simon & Lieberman, 2010). Individuals "who engage in this self-learning through interactions with others gain a more accurate awareness of their intrapersonal resources" (Owens et al., 2013, p. 1519) and are more likely to express humility. For leaders, whose work is often characterized by a hectic and unrelenting pace (Mintzberg, 1973), recall of learning from mistakes gives them time to reflect on missteps. As such, leaders who take the time to recall a prior mistake and their learning from it are more likely to behave in a manner that reflects a balanced understanding of their own capabilities (Carmeli et al., 2012).

Second, a leader's recall of learning from a prior mistake should also set the stage for another feature of humility to occur: an appreciation of the relative value of others' capabilities (Owens et al., 2013). Reflecting on one's mistakes reminds leaders why things went wrong and guides them to see themselves from a more balanced perspective (Wang et al., 2018). Thus, leaders who reflect on their past mistakes are more likely to view themselves more objectively and seek new insights from others through "a multifaceted lens that sees a variety of character strengths and skill sets others possess" (Owens et al., 2013, p. 1520). Such an approach can prompt leaders to reflect on how they and their followers can do better, which increases their understanding of others' insights and abilities (Tjosvold et al., 2004) and their appreciation for followers who are skilled in areas where they (i.e., the leaders) do not excel (Hammedi et al., 2011; Owens & Hekman, 2016).

Third, recalling learning from past mistakes reminds leaders of the importance of keeping an open mind regarding new approaches and helps shape their attitudes toward new information. Learning from mistakes transforms concrete experiences into purposeful future actions (Kolb, 1984), suppresses inertia, and increases the likelihood of exploring new ways to improve in order to achieve better outcomes (Carmeli et al., 2012). As a result of recalling learning from their mistakes, individuals will strive to reduce the likelihood that the same miscue will be repeated by opening themselves to new ideas, which will often come from others. That is, by recalling one's learning from a prior mistake, a third feature of humility is more likely to occur: an openness to perspectives different from one's own. In sum, we posit that recall of learning from one's mistakes can be an important experience that encourages displays of humility by leaders.

Hypothesis 1: When leaders recall learning from prior mistakes, they will be more likely to express humility.

2.2 | Leader planned learning as a mediator of the relationship between recall of learning from mistakes and expressed humility

We propose that following reflecting on a mistake that one learned from, leader-planned learning helps to drive expressions of humility. Leader-planned learning includes leaders' *intentions* to engage in learning behaviors, such as seeking new information and feedback from others, reflecting on work progress, and discussing errors (Edmondson, 1999). From the standpoint of planned behavior theory (Ajzen, 1991), people undertake logical and reasoned planning to engage in specific behaviors by evaluating available information. If they see value in engaging in certain behaviors, individuals are more likely to carry out plans to do so. Recall of learning from mistakes allows leaders to revisit their past miscalculations, analyze how things might have been better had they chosen a different path, and think about the lessons learned. In so doing, leaders come to see what they are able to gain by reflecting on past mistakes, realize the positive value of learning, and are more likely to initiate plans for future reflection on work progress to achieve better outcomes (Antonacopoulou & Sheaffer, 2014).

As the theory of planned behavior suggests, individuals who have a positive attitude toward a behavior are more likely to display that behavior and related ones (Ajzen, 1991). When leaders form intentions to learn, they are more likely to formulate plans to figure out ways to: improve their work progress, seek new information, and incorporate inputs from others (Edmondson, 1999; van Dyck et al., 2005). In leader-team contexts that often entail frequent interactions, leaders who engage in planned learning behaviors should be more inclined to solicit insights from team members on how to improve the team's performance (Owens et al., 2013). In doing so, they are more likely to appreciate and learn from others' inputs with openness, which is an expression of humility (Owens et al., 2013). Planned learning behavior also involves intentions to discuss work progress and examine things that did not work (Antonacopoulou & Sheaffer, 2014), which allows leaders to better understand their own abilities and form an objective, humble view of themselves. Thus, we posit that leaders who recall learning from mistakes will formulate plans for improvement and subsequently behave in a humble manner. Leaders' planned learning mediates the relationship between their recall of learning from mistakes and expressed humility.

Hypothesis 2: Leaders' recall of learning from mistakes is positively related to their expressed humility through leaders' planned learning.

2.3 | The moderating role of leader promotion focus

This experiential learning process varies by person and depends on each individual's self-regulated learning motivation (Kolb, 1984). Learning from mistakes works better for those whose self-regulatory goals are more aligned with improvement and growth (Dweck & Leggett, 1988; Kolb, 1984). Specifically, leaders' promotion focus orients them to strive to achieve desired outcomes and look for opportunities to realize their aspirations (Crowe & Higgins, 1997; Higgins, 1997), thus strengthening the benefits of learning from mistakes. Promotion focus can be both a chronic disposition (Higgins, 1997) and a psychological state primed by situational cues (Liberman et al., 1999).

We propose that when leaders have higher promotion focus, a recall of learning from mistakes intervention will be more likely to prompt them to plan for engaging in learning behavior and display humility for several reasons. First, recall of learning from one's own mistakes begins with identifying and interpreting mistakes (Cannon & Edmondson, 2005). Because people with a higher promotion focus strive for ideal goals (Kark et al., 2015), they should be inclined to experience recalled mistakes as starting points for growth and development, formulate plans to seek improvement, and be more open to acknowledging and discussing their own shortcomings (Lin & Johnson, 2015). Second, after analyzing and focusing on what one has learned, leaders with a higher promotion focus will be future-oriented and more

likely to think of ways to apply the lessons they learned while interacting with their followers (Higgins et al., 1994; Kark et al., 2015). Thus, leaders with a higher level of promotion focus will be more likely to see the potential value of engaging with their team members to improve outcomes (Johnson et al., 2010), plan to seek feedback from others, appreciate others' talents, and display humility. Third, leaders who have a higher promotion focus prioritize hopes and aspirations over rules and constraints, thus prioritizing the skills and knowledge they can gain (Higgins et al., 1994). Moreover, they are more optimistic about implementing their learned lessons and are more likely to commit themselves to reaching goals through planned learning (Gollwitzer, 1999) and to engage in behaviors to embrace new perspectives (Friedman & Förster, 2001; Gino et al., 2020).

Conversely, leaders with a lower promotion focus are less concerned with growth and advancement and are less sanguine about opportunities to learn. When they recall learning from mistakes, they are more likely to make short-term corrections, less motivated to plan for future growth, and less likely to be open-minded and encourage exploratory behaviors (Neubert et al., 2008). As a result, when it comes to planned learning and expressed humility, the positive effect of recall of learning from mistakes is reduced. Thus, leader promotion focus strengthens the relationship of recall of learning from mistakes and leader expressed humility and the indirect association of recall of learning from mistakes and humility via planned learning.

Hypothesis 3: Leader promotion focus moderates the positive relationship of leaders' recall of learning from mistakes and their expressed humility such that the relationship is stronger when leader promotion focus is higher than when promotion focus is lower.

Hypothesis 4: Leader promotion focus moderates the indirect relationship of leaders' recall of learning from mistakes and their expressed humility through their planned learning such that the positive indirect relationship is stronger when leader promotion focus is higher than when promotion focus is lower.

2.4 | From leaders' recall of learning from mistakes to team improvement-oriented behaviors and performance

In team settings, leaders' humility is generally observable by team members (Owens & Hekman, 2016), and leaders' modeling humble behaviors can help foster team improvement-oriented behaviors. We focus our examination on two fundamental processes through which teams can experience improvement: team learning and team voice. Both are team-level properties that emerge through interactions among team members. Team learning consists of team members' collective efforts to acquire, combine, and share knowledge (Argote, 1999). Team voice captures the extent to which team members collectively engage in expressions of work-related ideas, concerns, or suggestions to improve team functioning (MacKenzie et al., 2011). Both team learning and team voice are motivated by a desire to improve the implementation of new ideas (Bashshur & Oc, 2015; Edmondson, 1999).

Extant research has highlighted the importance of leaders in promoting team learning (Edmondson, 1999, 2003; Morgeson, 2005) and encouraging team members to voice their concerns regarding work-related issues (Detert & Treviño, 2010). Prior research has shown that leaders' humble behaviors promote an orientation toward team learning (Owens et al., 2013) and team member voice (Liu et al., 2017). We extend these studies by proposing how leaders' recall of learning from mistakes can lead to team improvement-oriented behavior through their expressed humility. First, after recalling learning from their mistakes, leaders are more likely to express humble behaviors through their interactions with their teams, thus creating opportunities to transfer experiences to their team members (Crossan et al., 1995; Edmondson, 2004). Team members often look to their leaders for relevant cues regarding acceptable work methods and opinions (Owens & Hekman, 2016). When deciding whether or not to seek new information or to speak up, team members often engage in a cost-benefit analysis of weighing the expected success of voice against the risks involved (Detert & Edmondson, 2011). When individuals in powerful positions are seen acknowledging their own limitations, team members are more likely to emulate these leaders, think about their work mistakes and problems, share their concerns about work-related issues (Detert & Treviño, 2010), and engage in more learning behaviors

(Edmondson, 1999). Second, when confronted with obstacles, humble leaders are attentive and open to different perspectives and solutions (Rowatt et al., 2006). By applying the knowledge gained after recall of learning from mistakes, humble leaders activate team members' curiosity and inspire them to improve and test assumptions to solve problems. This exploration and experimentation fosters team learning behaviors (Gibson & Vermeulen, 2003; Vera & Rodriguez-Lopez, 2004) and encourages team members to seek opportunities to improve (Owens & Hekman, 2012). Third, after reflecting on their own oversights, leaders will be prepared to attend to others' strengths, recognize others' inputs, and show appreciation for others' contributions. Leaders' attention to others can shape how team members interact with each other through social contagion and modeling (Owens & Hekman, 2016) and help build stronger bonds within the team (Davis et al., 2013). These interpersonal connections encourage reflective, learning-based communication (Owens et al., 2013).

We further propose that team improvement-oriented behaviors will enhance team performance. When team members engage in collective learning, they are better able to adapt to environmental demands (Edmondson, 1999; Van Der Vegt & Bunderson, 2005) and improve their collective performance (Bresman, 2010; Kostopoulos & Bozionelos, 2011). Moreover, when team members regularly engage in voice behaviors, they are better able to detect potential mistakes (Baum & Ingram, 1998), make higher quality and future-oriented decisions (Carmeli & Schaubroeck, 2008), and produce better performance outcomes (Li et al., 2017). By integrating these arguments with those associated with Hypotheses 1 and 2, we can elucidate the mechanisms by which leaders' recall of learning from mistakes promotes team performance:

Hypothesis 5: Leaders' recall of learning from mistakes is positively related to team performance first through facilitating leaders' planned learning, then through promoting leader expressed humility, and lastly through fostering team improvement-oriented behavior.

Integrating the above arguments, we argue that leader promotion focus strengthens the indirect relationship of leaders' recall of learning from mistakes and team performance through leader planned learning, humility, and team improvement-oriented behavior.

Hypothesis 6: Leader promotion focus moderates the indirect relationship of leaders' recall of learning from mistakes and team performance first through leader planned learning, then through leader expressed humility, and lastly through team improvement-oriented behavior, such that the positive indirect relationship is stronger when leader promotion focus is higher than when it is lower.

3 | STUDY 1

In this study, we aimed to test the hypothesis that an intervention to have leaders recall learning from mistakes would promote higher levels of humility (Hypothesis 1). We collected data from two independent samples to test this hypothesis. The data collection was approved by Institutional Review Board (IRB) (study number: 2021E0045) at the Ohio State University. In both Sample A and Sample B, we compared the recall of learning from mistakes condition with a control condition for triggering leaders' expressions of humility. In Sample B, we include a third condition, which allows us to examine whether reflecting on a mistake that one did not learn from is also sufficient to elicit humility.

3.1 | Sample and procedure

Sample A included 155 managers recruited through Prolific in February of 2021. After excluding participants who did not follow instructions, completed the study within 3 min, or failed an attention check, Sample A consisted of 149 managers (M_{age} = 30.51 years; 40% female). Participants had an average position tenure of 2.84 years (SD = 3.02), an

average organizational tenure of 4.44 years (SD = 4.48), and an average managerial tenure of 3.03 years (SD = 3.28). Sample B included 305 managers recruited through Prolific in March of 2021. After applying the same exclusion criteria detailed above, Sample B consisted of 301 managers (M_{age} = 36.06 years; 56% female). Participants had an average position tenure of 4.51 years (SD = 4.53), an average organizational tenure of 7.06 years (SD = 6.28), and an average managerial tenure of 6.05 years (SD = 6.24). Participants in both samples worked in a wide range of industries such as education, retail, healthcare, finance, technology, construction, manufacturing, and telecommunications. Participants also held a variety of managerial job titles such as project manager, operations manager, production manager, customer service manager, and director. In both samples, participants received $2.00 for completing the study.

3.2 | Manipulation of leaders' recall of learning from mistakes

Within each sample, managers were randomly assigned to either the control condition or the recall of learning from own mistakes condition in a between-participants design. In the *recall of learning from own mistakes* condition, participants were instructed to take a few minutes to write about and reflect on a mistake they made in the past couple of weeks while engaging with their subordinates and their learning from the mistake. Participants were asked to think about a mistake they realized on their own and was not pointed out by others. In the *control* condition, participants were instructed to write about what they typically do in the morning and afternoon. In Sample B, we also had a third condition that participants were randomly also assigned to: *recall of mistakes without learning*. In this condition, participants were instructed to write about a mistake they made in the past couple of weeks that involved engaging with their subordinates but resulted in little to no learning. Participants were next presented with a workplace scenario and were asked how they would behave in the situation. We created a workplace situation that would allow for variability in the level of humility expressed (see Online Supplements S1). After responding to the scenario, participants completed some exploratory measures on moral emotions and event criticality, a manipulation check, an attention check item, and demographic information.

4 | MEASURES

4.1 | Expressed humility

Participant responses to the workplace situation were coded by three graduate students for the degree of humility expressed. The raters were blind to condition and were trained on how to identify and code for humility prior to coding responses. Each response was evaluated according to the degree of leader humility using Owens et al.'s (2013) nine-item measure on a 1 to 5 Likert scale (1 = strongly disagree; 5 = strongly agree). An example item is, "In the writing response, this manager acknowledged when others had more knowledge and skills than himself/herself." Given the high level of interrater reliability (Sample A: median r_{wg} = .94, ICC1 = .56, ICC2 = .80; Sample B: median r_{wg} = .94, ICC1 = .40, ICC2 = .67), we averaged ratings to create an overall score for leader expressed humility.

4.2 | Control variables

Participants rated the extent to which they feel shame, embarrassment, and guilt on a 5-point Likert scale ranging from 1, the feeling is nonexistent to 5, the feeling was intense (α = .90 in Sample A; α = .90 in Sample B). We also considered the potential influence of criticality of the event participants recalled (two items from Morgeson and DeRue (2006), "to what extent was this event critical for the long-term success of the team" and "to what extent was this an important

event for the team", $a = .81$ in Sample A; $a = .84$ in Sample B). Controlling for moral emotions and event criticality did not affect the significance of the results so we report the results without including these variables as covariates.

5 | RESULTS AND DISCUSSION

5.1 | Manipulation check

As a manipulation check, we asked the participants to indicate whether they recalled and wrote about (1) a mistake they made and their learning from it, (2) a typical morning/afternoon, or (3) a mistake they made but did not learn from (Sample B only). All participants correctly indicated what they were asked to recall and write about. We also had two independent raters, who were blind to condition, read responses to ensure participants followed instructions. We asked raters to indicate whether their ratings showed "recall of learning from mistakes," "recall of daily routines," or "recall of mistake with no learning" (Sample B only). There was perfect inter-rater reliability (100% for both samples).

5.2 | Main analyses

In Sample A, a one-way ANOVA showed that leaders in the recall of learning from own mistakes condition expressed greater humility ($M = 3.03$, $SD = .99$) as compared to leaders in the control condition ($M = 2.60$, $SD = 1.02$), $F(1, 147) = 6.83$, $p = .01$, supporting Hypothesis 1. In Sample B, a one-way ANOVA indicated significant differences in expressed humility across the three conditions, $F(2, 298) = 8.19$, $p < .001$. A planned contrast analysis showed that leaders in the recall of learning from own mistakes condition (coded as 2) expressed more humility as compared to leaders in the other 2 conditions (each coded as −1), $t(298) = 3.73$, $p < .001$. Providing further support for Hypothesis 1, leaders in the recall of learning from own mistakes condition expressed more humility ($M = 3.12$, $SD = .90$) than leaders in the control condition ($M = 2.85$, $SD = .68$), $t(298) = 2.40$, $p = .017$. Participants in the recall of learning from own mistakes condition also expressed higher levels of humility than the recall of mistakes without learning condition ($M = 2.66$, $SD = .81$), $t(298) = 4.02$, $p < .001$. The recall of mistakes without learning condition and the control condition did not significantly differ from one another, $t(298) = 1.65$, $p = .10$. Figure 2 shows the means of each experimental condition in both samples.

Across both samples, the findings support the hypothesis that leaders' recall of learning from their own mistakes increases their expressed humility. Consistent with our theory that it is important for the mistake to be one that resulted in learning from the experience, and that merely having a leader reflect on a prior mistake they made may be insufficient to elicit leader humility, we did not find evidence to support the possibility that recalling a mistake one made but didn't learn from would increase humility. Although Study 1 provided an initial test of the impact of recall of learning from mistakes on expressed humility, it is not without limitations. For example, we relied on participants' responses to vignettes to evaluate their humility. It is important to examine whether the results could be constructively replicated in a different sample with different operationalizations of recall of learning from mistakes and expressed humility. In addition, Study 1 did not allow us to test the moderating impact of promotion focus or examine the downstream effects of leader humility. To help address these limitations, we conducted Study 2 (which introduces the moderating role of promotion focus), Study 3 (which includes teammate evaluated leader humility), and Study 4 (tests our full model with managers in the field).

6 | STUDY 2

In Study 2, we examined the moderating effect of regulatory focus on the relationship between leaders' recall of learning from mistakes and humility in Hypothesis 3. We use the same learning from mistakes manipulation in Study 1 and add a regulatory focus manipulation.

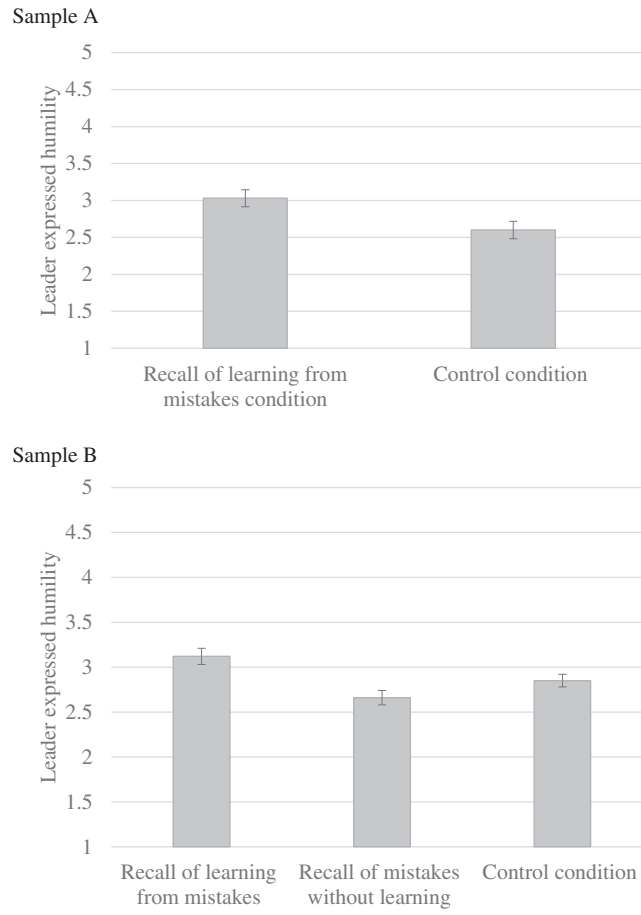

FIGURE 2 Study 1: Mean comparisons across conditions (Error bars are standard errors)

6.1 | Sample and procedure

Five hundred and twenty managers were recruited through Prolific in March of 2021. Prior to collecting data, we pre-registered the hypothesis, conditions, measures, sample size, exclusion criteria, and planned analysis (https://aspredicted.org/blind.php?x=yt85d5). The data collection was approved by IRB (study number: 2021E0207) at the Ohio State University. We excluded participants who did not follow instructions, completed the study within 3 min, or failed an attention check. After applying the exclusion criteria, the final sample consisted of 505 managers (M_{age} = 34.58 years; 50.0% female). Participants worked in a wide array of industries such as education, healthcare, retail, technology, and banking. Participants also held a diverse range of managerial job titles such as project manager, finance manager, and director of supply chain. Participants received $2.50 for completion of the study. Participants' average tenure with the current position, the organization, and managerial positions was 3.85 years (*SD* = 3.70), 6.30 years (*SD* = 5.53), and 5.29 years (*SD* = 5.48), respectively. Participants were randomly assigned to one of four conditions in a 2 (recall of learning from own mistakes vs. control) × 2 (promotion focus vs. prevention focus) between-participants design.

6.2 | Manipulation of leaders' recall of learning from mistakes

Depending on condition, participants either completed the recall of learning from own mistakes task or wrote about their daily events. The wording and instructions for the two conditions were the same as in Study 1.

6.3 | Manipulation of leaders' regulatory focus

We next manipulated state regulatory focus using a writing task validated in prior research (Freitas & Higgins, 2002; Gino et al., 2020). We compared promotion focus participants against those induced to have a prevention focus (Gino et al., 2020; Zhang et al., 2011). As Higgins and Pinelli (2020, p. 27) note, "Depending on the circumstances, we can approach situations with either a promotion or prevention focus concern," highlighting that one's state regulatory orientation cannot simultaneous be high for both promotion and prevention focus. A promotion-focused self-regulation is focused on the pursuit of hopes, aspirations, and growth (Crowe & Higgins, 1997), reducing one's focus on prevention. Similarly, a heightened prevention focus orients one's current goals toward security needs, duties, and fulfilling obligations (Crowe & Higgins, 1997; Higgins, 1997), lowering one's focus on promotion goals. That is, by inducing a prevention focus, an individual's level of promotion focus should be temporarily lowered. As such, prior experimental research on regulatory focus often compares a promotion focus intervention against a prevention focus intervention (de Lange & van Knippenberg, 2009; Friedman & Förster, 2001; Gino & Margolis, 2011). In the *promotion focus* conditions, participants read, "Please think about something you ideally would like to do. In other words, think about a hope or aspiration that you currently have. Please list the hope or aspiration below." In the *prevention focus* conditions, participants read, "Please think about something you think you ought to do. In other words, think about a duty or obligation that you currently have. Please list the duty or obligation below."

After completing the regulatory focus manipulation, participants were presented with the same workplace scenario described in Study 1 that was used to assess leader humility. After responding to the scenario, participants completed the same measures of moral emotions ($\alpha = .91$) and event criticality ($\alpha = .85$) as described in Study 1. To ensure the task was effective in eliciting differences in promotion focus, participants completed a nine-item promotion-focus scale by Neubert et al. (2008; e.g., "My work priorities are impacted by a clear picture of what I want to be") on a 1 (strongly disagree) to 5 (strongly agree) scale ($\alpha = .85$). Participants also completed a recall task manipulation check, an attention check, and reported demographic information.

7 | MEASURES

7.1 | Expressed humility

Following the same procedure from Study 1 to evaluate humility, three graduate students, who were blind to condition, rated each workplace scenario response using a nine-item scale from Owens et al. (2013) using a 5-point Likert scale (1 = disagree to 5 = agree). There was a high degree of interrater reliability (median $r_{wg} = .95$, ICC1 = .49, ICC2 = .74) and we averaged ratings to create an overall score for leader humility.

7.2 | Control variables

Similar to Study 1, we controlled for the potential influences of moral emotions and event criticality on expressed humility. Controlling for them did not affect the significance of the results so we report the results without including these variables.

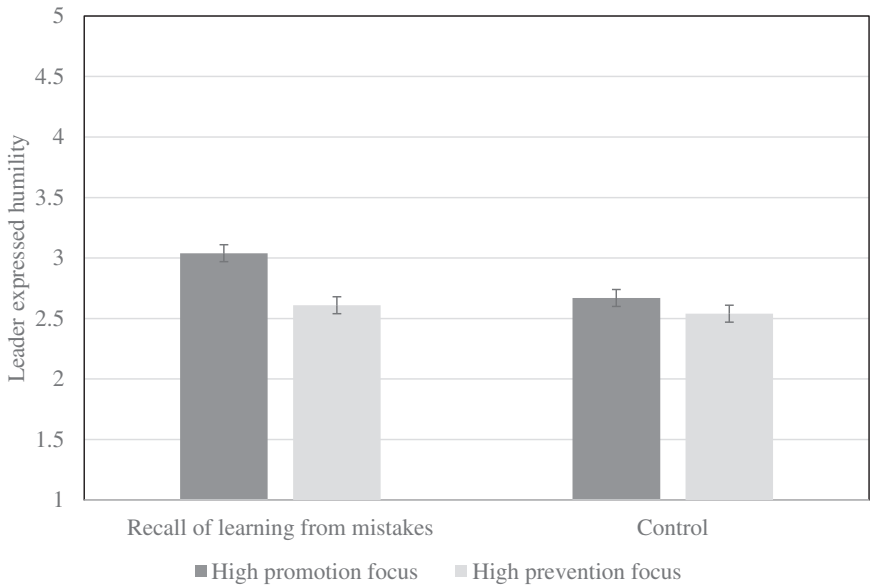

FIGURE 3 Study 2: The moderating effect of leader promotion focus on the relationship between leader learning from mistakes and leader expressed humility (error bars are standard errors)

8 | RESULTS AND DISCUSSION

8.1 | Manipulation checks

After participants completed their recall writing task, we asked them to indicate whether their writing involved (1) a mistake they made or (2) a typical morning/afternoon. All participants reported the correct topic that they wrote about, indicating that they had followed instructions. Supporting the effectiveness of regulatory focus manipulation, a one-way ANOVA showed that participants rated their promotion focus higher in promotion focus conditions ($M = 3.81$, $SD = .72$) than in the prevention focus conditions ($M = 3.64$, $SD = .65$), $F(1, 503) = 7.88$, $p = .005$.

For both manipulations, we had two independent raters who were blind to condition read each of the responses to ensure participants followed instructions. We asked raters to evaluate whether leaders' responses to the first writing task reflected "recall of learning from own mistakes" or "daily routines" (control) and whether their responses to the second writing task were about promotion focus (a hope or a goal) or prevention focus (a rule or an obligation). There was almost perfect inter-rater reliability (99.91%), with all participants included in the final sample having followed instructions on the manipulation tasks.

8.2 | Main analyses

A two-way ANOVA showed a main effect for learning from mistakes on humility, with participants in the recall of learning from mistakes conditions showing higher levels of humility ($M = 2.83$, $SD = .82$) than those in the control conditions ($M = 2.60$, $SD = .76$), $F(1, 501) = 10.38$, $p = .001$ (Hypothesis 1). Importantly, there was also a significant interaction, $F(1, 501) = 5.16$, $p = .024$ (see Figure 3). A planned contrast showed that for leaders whose promotion-focus was heightened, recall of learning from mistakes produced higher levels of humility ($M = 3.04$, $SD = .80$) than did recalling daily events ($M = 2.67$, $SD = .74$), $t(501) = 3.87$, $p < .001$. However, for participants whose prevention-focus was heightened, recall of learning from mistakes ($M = 2.61$, $SD = .78$) did not lead to more humility than recalling daily events ($M = 2.54$, $SD = .78$), $t(501) = .68$, $p = .50$. Thus, Hypothesis 3 was supported.

The findings of this study replicate the positive impact of recall of learning from mistakes on eliciting humility in Hypothesis 1 and provide support for the moderating role of promotion focus in Hypothesis 3. The positive impact of the recall of learning from own mistakes intervention on leader humility was more evident when leaders were promotion focused compared to when they are prevention focused. Despite providing initial support for our hypotheses, Studies 1 and 2 focused on leaders' responses to imagined work scenarios to measure their expressed humility. Thus, it remains unclear whether the findings will generalize to actual interactions between leaders and followers. In addition, our manipulation check of learning from mistakes intervention can be argued to be more of an attention check than an actual test of our manipulation. As such, it remains unclear whether a learning from mistakes intervention will necessarily elicit leaders' humility when they interact with followers. Furthermore, because we did not have a neutral regulatory focus control condition, we were unable to determine whether the promotion focus enhanced the effects of reflecting on mistakes or whether the prevention focus attenuated it. In the upcoming studies, we plan to address these limitations by utilizing real leader-team contexts and evaluating leaders' expressed humility through their interactions with followers.

Additionally, there are other factors we have yet to examine. For example, mistakes can occur outside of people's awareness (Bligh et al., 2018) and external sources can help people gain information about the mistakes they made (Goodman et al., 2004; Zhao, 2011). Our manipulations in Studies 1 and 2 required leaders to focus on mistakes they realized themselves, but leave open whether similar positive effects on humility would occur if the mistake was pointed out by someone else. Furthermore, mistakes that evoke learning relevant to the workplace can also take place in one's personal life (Barnes et al., 2015; Courtright et al., 2016), and our theorizing allows for this possibility. Thus, it is important to examine whether the results could be constructively replicated using a revised version of the recall task (which asks participants to recall mistakes they are reminded of by others, regardless of whether they occurred in the workplace or not) with team members rating leaders' expressed humility.

9 | STUDY 3

We next conducted a laboratory experiment with student-led teams. Leaders completed a manipulation of recall of learning from mistakes and a manipulation of regulatory focus prior to interacting with the team. Leader humility was rated by a leader's team members.

9.1 | Sample and procedures

Two hundred and eleven undergraduate students from a university in the Midwestern United States participated in the study in exchange for extra credit in April of 2020. The data collection was approved by IRB (study number: 2020E0174) at the Ohio State University. After excluding one team leader whose team members failed to show up, we had 210 student participants (M_{age} = 21.10; 56.7% female), who were randomly assigned into 63 teams ($M_{team\ size}$ = 3.33, SD = .72). Prior to joining their teams, leaders were first randomly assigned to one of four conditions in a 2 (recall of learning from own mistakes vs. control) x 2 (promotion focus vs. prevention focus) between-participants design. The study was conducted online through Zoom.

Participants assumed the role of consulting team members who were asked to work together to come up with ideas to help a small business. The students were randomly assigned to teams that ranged in size from three to six. We assigned a leader role to upper-level undergraduate students. Leaders arrived at the Zoom session 15 minutes before their team members and were informed that they would be the leader of a team in the study. While waiting for their team to arrive, participants were given two separate writing tasks to complete. The writing tasks contained our manipulations of learning from own mistakes and regulatory focus. After completing the writing tasks, team leaders were told while working with their team that they could decide how to approach the consulting project (e.g., which aspects the team wanted to discuss in more depth). As we needed only one output from the team, leaders had the

authority to pick one follower to write and submit the discussion summary. Twenty-five minutes was provided for the team discussion, but team leaders were given the flexibility to either shorten or extend the meeting depending on their progress.

9.2 | Manipulation of leaders' recall of learning from mistakes

In the recall of learning from mistake conditions, leaders were instructed to think of and write down a time when someone (e.g., a classmate, friend, or anyone else with whom they had contact) pointed out a mistake they made and what they learned from that mistake. In the control conditions, we asked team leaders to describe three to five things that they recently bought.

9.3 | Manipulation of leaders' regulatory focus

Following the approach taken in Study 2, to vary levels of promotion focus across conditions, we manipulated state regulatory focus. In the *promotion focus* condition, participants (1) read information detailing why it is important for people to act in a manner indicating high promotion focus (i.e., desire to achieve their goal and towards advancement, growth and life accomplishment) and (2) were instructed to write about a hope or an aspiration that they want to achieve in their life and the strategies they planned to use to successfully fulfill it. In the *prevention focus* conditions, participants (1) read information detailing why having high promotion focus may be harmful for individuals seeking to achieve success and (2) were instructed to write about a time when they focused less on the final gains and rewards and were thus more careful while undertaking a task (see Online Supplements S2).

After completing the two writing tasks, we randomly assigned team members into different breakout rooms (via Zoom) to work with team leaders. In all conditions, participants were asked to read a message that requested they work with other team members as a consulting team to provide suggestions to a junior student, Alex, on how he can run a coffee shop bookstore (see Online Supplements S3). At the end of their discussion, teams submitted their suggestions to help address Alex's problems. After the collective response was submitted, individual team members completed a survey that included a measure of leader expressed humility and demographic questions. Team leaders completed a survey that included the same promotion focus manipulation check measure used in Study 2 and demographic questions.

10 | MEASURES

10.1 | Leader expressed humility

Team members rated team leaders' expressed humility behaviors using the Owens et al.'s (2013) 9-item scale ($\alpha = .87$; 1 = strongly disagree to 7 = strongly agree). Team members showed a high degree of agreement in their evaluations of the leader's humility (median $r_{wg} = .99$, ICC1 = .80, ICC2 = .90), helping justify aggregation to the team level.

11 | RESULTS AND DISCUSSION

11.1 | Manipulation checks

Two independent raters read leaders' written responses from their first writing task and evaluated whether it was about learning from mistakes or about the item leaders bought. All writing contents fell correctly into their designed

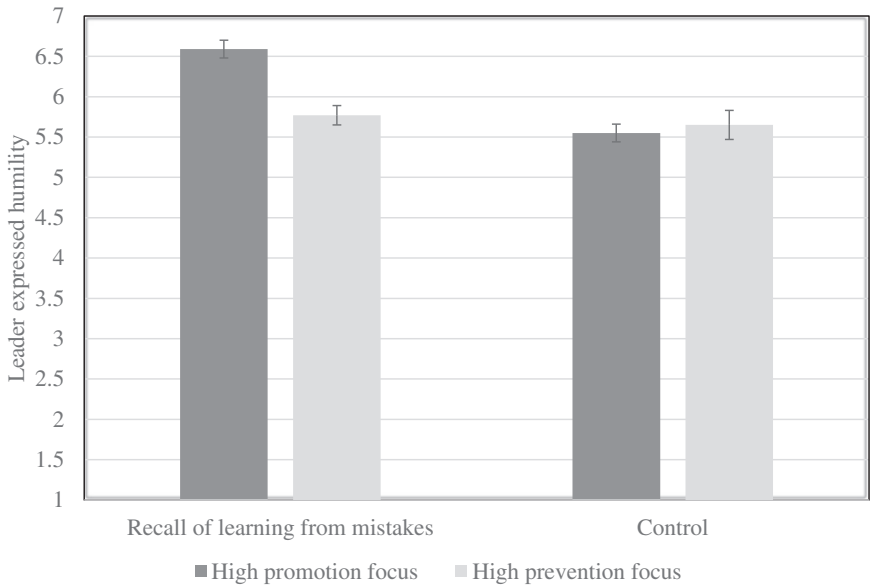

FIGURE 4 Study 3: The moderating effect of leader promotion focus on the relationship between leader learning from mistakes and leader expressed humility (error bars are standard errors)

conditions (interrater-reliability for rater pairs = 1.00). We also asked the raters to evaluate whether the leaders' responses to the second writing task was about promotion focus (a hope or a goal), or prevention focus (a rule, a responsibility, or an obligation). The responses fell correctly into their designed conditions (97% as rated by rater 1, and 100% as rated by rater 2, interrater-reliability for rater pairs = .97). As noted above, team leaders completed the same 9-item promotion focus measure ($\alpha = .82$) used in Study 2. A one-way ANOVA showed that team leaders rated their promotion focus higher in promotion focus condition ($M = 6.04$, $SD = .58$) than in the prevention focus condition ($M = 5.62$, $SD = .57$), $F(1, 61) = 8.62$, $p = .005$. Together, these findings support the effectiveness of the regulatory focus intervention to affect promotion focus.

11.2 | Hypothesis testing

We conducted a one-way ANOVA to examine the main effect of leader recall of learning from mistakes on leader expressed humility (Hypothesis 1), and a two-way ANOVA to examine the interactive effects of leader recall of learning from mistakes and regulatory focus on expressed humility (Hypothesis 3). Supporting Hypothesis 1, leaders in the recall of learning from mistakes condition showed greater humility ($M = 6.22$, $SD = .58$) than leaders in the control condition ($M = 5.60$, $SD = .60$), $F(1, 61) = 17.11$, $p < .001$. A two-way ANOVA showed a significant interaction of leader recall of learning from mistakes and promotion focus on humility, $F(1, 59) = 12.60$, $p = .001$ (see Figure 4). Planned contrast tests were conducted to examine the interaction. For high promotion-focused leaders, recall of learning from mistakes produced higher levels of humility ($M = 6.59$, $SD = .42$) than did recalling daily events ($M = 5.55$, $SD = .47$), $t(59) = 5.78$, $p < .001$. However, for prevention-focused leaders, recall of learning from mistakes ($M = 5.77$, $SD = .40$) did not elicit higher levels of humility than did recalling daily events ($M = 5.65$, $SD = .72$), $t(59) = .62$, $p = .537$. These results show that recall of learning from mistakes increases levels of expressed humility among promotion-focused leaders and provide further support for Hypothesis 3.

The findings of Study 3 replicate and extend those of Studies 1 and 2, showing that leader recall of learning from mistakes increased leader expressed humility. Furthermore, a heightened promotion focus strengthened the

relationship between leaders' learning from mistakes and expressed humility, relative to this relationship under a prevention focus manipulation. The reliance on followers' evaluations of leaders' expressed humility combined with the controlled laboratory setting helps strengthen the validity of our findings.

However, Study 3 also suffers from some limitations. First, although leaders worked on an assigned team project, the participants lacked significant managerial experience. Thus, the generalizability of the results to the workplace can be called into question. Second, although the number of student teams is comparable with prior research (e.g., Grant et al., 2011; McClean et al., 2018), it is relatively small ($N = 63$), yielding low statistical power. Third, although we followed prior studies in manipulating promotion focus against prevention focus (de Lange & van Knippenberg, 2009; Friedman & Förster, 2001; Gino & Margolis, 2011), as in Study 2, the lack of a neutral condition limits the ability to attribute the greater impact of the recall intervention on humility to the promotion focus, or to the removal of the prevention focus. Furthermore, there are a few other factors we neglected in these studies. For instance, whereas our theorizing allows for either state or trait promotion focus to moderate the positive link between learning from mistakes and leader behavioral humility, Studies 2 and 3 show this moderation with a state manipulation of regulatory focus. It remains unclear whether individuals high in trait promotion focus will also respond more positively to the mistake intervention. In addition, in Study 3, we asked team leaders to recall learning from one past mistake and examined how this affected their subsequent leadership behaviors. However, leaders may make many mistakes, and the learning effects from these mistakes can vary on a day-to-day basis. Leader behaviors, including expressed humility, can also vary over time, meaning that leaders who display higher levels of humility on one day may not do so on another day (Johnson et al., 2012). Thus, a within-individual daily study could show how recalling learning from a different mistake each day affects daily expressed humility and team outcomes. Moreover, up to this point, we have yet to examine our full research model, including the mediation effects and the prediction of team outcomes. To address these issues, we designed a study using experience sampling methodology (ESM) to examine the day-to-day unfolding of the hypothesized relationships.

12 | STUDY 4

12.1 | Sample and procedures

We emailed invitations to 1023 non-physician managers from medical schools and hospitals in the Midwestern United States during April and May of 2018. The data collection was approved by IRB (study number: 2018E0184) at the Ohio State University. We identified potential participants based upon whether their publicly listed job titles indicated they were in leadership roles. One hundred and two managers agreed to participate. Data were collected in two phases over a 3-week period. In the first phase, participants completed a baseline survey that assessed demographics and promotion focus. In this survey we also verified that participants held a leadership role at the time of the study. One week later, in the second phase, participants completed daily surveys twice per workday (morning and afternoon) for ten consecutive workdays (Monday–Friday) and one morning survey on the two Saturdays comprising the 2-week data-collection period. Participants received the morning survey at 6 am, and it contained a writing manipulation (recall of learning from mistakes or control) and a measure of team performance for the prior day. At 4 pm, participants received the afternoon survey, which included measures of expressed humility, team learning, and team voice. On Saturday mornings, participants received a morning survey that included the measure of team performance for the previous workday (Friday). We used recall of learning from mistakes, manipulated in the morning, and leader planned learning (Time 1) to predict leader expressed humility and team improvement-oriented behavior in the afternoon (Time 2), which was used to predict team performance, rated the next morning (Time 3). Leader planned learning was measured after the recall manipulation. This allowed for temporal precedence, with the independent variable, mediators, and dependent variable measured at different time points that were consistent with our model (Schilpzand et al., 2018). Eighty-five of the 102 managers who participated in the study completed the baseline survey and at least

three matched data points (i.e., responses from a morning survey, a subsequent afternoon survey, and a subsequent next-day morning survey). There were a total of 686 effective data points (out of the 850 total possible data points from the 85 participants), resulting in a response rate of 80.71%. Comparisons between the 85 participants whose responses were included in the analyses and the 17 individuals who were excluded revealed no differences in terms of gender, age, education, ethnicity, tenure, team size, or promotion focus. Participants received up to $100 for completing the baseline survey and all daily surveys, and the amount paid was prorated based on the number of completed daily surveys. Participants held managerial positions, such as project manager, chief administrative officer, medical staff manager, or senior director. With regard to demographics, 84.7% were female, their average managerial experience was 5.79 years, average age was 43.89 years, 96.5% were white (not Hispanic), and 84.7% had received bachelor's degree or above.

12.2 | Recall of learning from mistakes manipulation

Half of the participants were randomly assigned to the recall of learning from own mistakes condition for the first week and were then assigned to the control condition for the second week. The other half were randomly assigned to the control condition during the first week and then to the experimental condition during the second week. This approach counterbalances the sequence of the experimental treatment by week (Foulk et al., 2018; Lanaj et al., 2019). In total, each participant was assigned to the experimental condition for 5 out of the 10 days and to the control condition for the other 5 days. In the experimental condition, participants were asked to recall a mistake or failure they made and their learning from the mistake and were then instructed to write three to five sentences describing the incident. In the control condition, participants were asked to write three to five sentences about things in their everyday life. In both the experimental and the control conditions, participants reflected and reported on different activities on each of the 10 workdays comprising the study. In the experimental condition, we asked participants to write about a mistake pointed out by a coworker, a supervisor, a subordinate, a customer, or a family member. In the control condition, participants were asked to describe the food they ate in the morning, objects in front of them, steps to fill up a car with gas, things bought recently, and food bought from recent grocery shopping. Writing tasks have been shown to be effective in prior ESM studies as a way to induce desired psychological states (Foulk et al., 2018; Koopman et al., 2021). To ensure participants followed instructions for manipulation writing tasks, we asked eight independent raters to check the writing responses. Raters evaluated whether responses reflected learning from a mistake or everyday things. Each rater evaluated a subset of the total responses from both the experimental and control conditions; each response was rated by two raters. The results showed that 98% of responses fell into the assigned condition, experimental or control (interrater reliability = .92).

13 | MEASURES

Unless otherwise noted, 1 = strongly disagree to 5 = strongly agree scales were used.

13.1 | Daily leader planned learning

Leader planned learning was measured using three items from Edmondson (1999). The items were selected which had the highest correlations in the original Edmonson scale, and were modified to reflect planning of learning behaviors. They include: "Today at work, I plan to seek new information that would lead me to make important changes"; "Today at work, I plan to stop to reflect on our work group's work process"; and "Today at work, I plan to speak up to test assumptions about issues under discussion" ($\alpha = .86$).

13.2 | Daily leader expressed humility

Leader humility was measured using four items with the highest factor loadings from the nine-item humility survey developed by Owens and colleagues (2013). The four items were "Today at work, I was open to the advice of others," "Today at work, I admitted it when I don't know how to do something," "Today at work, I was willing to learn from others," and "Today at work, I was open to the ideas of others" ($\alpha = .91$).

13.3 | Daily team improvement-oriented behavior

Team improvement-oriented behavior was measured with two indicators: team learning and team voice. Team learning was measured using three items with highest inter-item correlations taken from Edmondson's (1999) seven-item scale. Managers indicated the frequency their team members engaged in the behaviors in the statements starting with "today at work, some of my team members" and then "sought new information that led us to make important changes", "made sure that we stopped to reflect on our work group's work process" and "spoke up to test assumptions about issues under discussion." ($\alpha = .90$). Team voice was measured by adapting four items with the highest factor loading from Van Dyne and LePine's (1998) six-item scale. An example item is "Today at work, some of my team members spoke up and encouraged others in this group to get involved in issues that affect the group" ($\alpha = .94$). Team voice and learning were both rated on a 5-point Likert sale (1 = never to 5 = always). Team voice and learning were correlated highly ($r = .81$, $p < .001$), suggesting a significant overlap in content between the two. Conceptually, we expect leader humility would lead to team voice and learning behaviors in similar ways. Thus, we combined the two constructs to reflect a higher-order construct of team improvement (e.g., Grant et al., 2011).

13.4 | Daily team performance

Team performance was measured using three items adapted from Liden et al. (1993)'s performance scale.[1] A sample item is "Yesterday at work, the overall level of performance that I have observed for this work team was outstanding" ($\alpha = .93$).

13.5 | Promotion focus

We used the nine-item promotion focus scale developed by Neubert et al. (2008) ($\alpha = .87$), which was also used in Study 2 and 3.[2]

14 | RESULTS AND DISCUSSION

To verify the structural validity of the measures, we first conducted a multilevel confirmatory factor analysis. At the within-person level, we modeled leader humility, team improvement-oriented behavior, and daily team performance. At the between-person level, we modeled promotion focus. Results showed that the hypothesized model with five factors (leader expressed humility, planned learning, team improvement-oriented behaviors, team performance) showed a satisfactory fit to the data (χ^2 (140) = 527.55, $p < .001$, CFI = .95, RMSEA = .06). As shown in Table 1, we compared our full five-factor model to other alternative four-factor, three-factor, and two-factor models.[3] Table 2 shows within- and between-person correlations as well as descriptive statistics for all study variables. To ensure that multilevel modeling was appropriate for our analyses, we examined the within-person variance in our endogenous variables.

TABLE 1 Study 4: Results of confirmatory factor analysis

Model	χ^2	*df*	CFI	RMSEA	$\Delta\chi^2$
Six-factor model: promotion focus, leader expressed humility, planned learning, team learning and team voice, team performance	303.43	136	.98	.04	
Five-factor model: promotion focus, leader expressed humility, planned learning, team improvement-oriented behavior, team performance	527.55	140	.95	.06	$\Delta\chi^2(4) = 224.12^{***}$
Four-factor model a: leader expressed humility and planned learning on same factor	1246.80	143	.87	.11	$\Delta\chi^2(3) = 719.25^{***}$
Four-factor model b: leader expressed humility and team improvement-oriented behavior on same factor	1922.54	143	.78	.14	$\Delta\chi^2(3) = 1394.99^{***}$
Four-factor model c: leader expressed humility and team performance on same factor	2365.58	143	.73	.15	$\Delta\chi^2(3) = 1838.03^{***}$
Four-factor model d: planned learning and team improvement-oriented behavior on same factor	1266.93	143	.86	.11	$\Delta\chi^2(3) = 739.38^{***}$
Four-factor model e: planned learning and team performance on same factor	1313.55	143	.86	.11	$\Delta\chi^2(3) = 786^{***}$
Four-factor model f: team improvement-oriented behavior and team performance on same factor	1608.54	143	.82	.12	$\Delta\chi^2(1) = 1080.99^{***}$
Three-factor model a: leader expressed humility, planned learning, team improvement-oriented behavior on same factor	2656.22	145	.70	.16	$\Delta\chi^2(5) = 2128.67^{***}$
Three-factor model b: planned learning, team improvement-oriented behavior, team performance on same factor	2303.86	145	.74	.15	$\Delta\chi^2(5) = 1776.31^{***}$
Two-factor model: leader expressed humility, planned learning, team improvement-oriented behavior, team performance on same factor	3712.10	146	.57	.19	$\Delta\chi^2(6) = 3184.55^{***}$

Note. *N* (within-person) = 686; *N* (between-person) = 85.
$^{***}p < .001$.

We estimated a null model for each variable using Mplus 8.7 (Muthén & Muthén, 2018) to partition each variable's variance into within-person and between-person components. Analyses indicated that all four of our focal variables had substantial within-person variance, supporting the use of multilevel modeling (leader planned learning = 72%, leader humility = 64%, team improvement-oriented behaviors = 44%, team performance = 34%).

We conducted multilevel path analysis via Mplus to test our hypotheses. Consistent with previous studies (e.g., Debus et al., 2012; Peng et al., 2019; Spence et al., 2014; Wellman et al., 2019), we grand-mean centered all of the predictors and modeled hypothesized associations with random slopes, and control variables with fixed effects. As Table 3 shows, recall of learning from mistakes was positively related to leader expressed humility ($B = .29$, $p = .001$). The results suggest that when leaders recalled learning from mistakes, they subsequently had higher levels of expressed humility than when they did not. Thus, Hypothesis 1 was supported. Furthermore, leader recall learning from mistakes was positively related to leader planned learning ($B = .27$, $p = .005$), which was positively related to leader expressed humility ($B = .13$, $p = .005$). Following recommendations by Preacher et al. (2010) for testing mediation in multilevel models, we used a Monte Carlo simulation to create 20,000 resamples to construct 95% confidence intervals (CIs) for the indirect effects (Selig & Preacher, 2008). The indirect effect of leader recall of learning from mistakes on leader expressed humility via leader planned learning was positive and significant ($B = .03$, 95% CI = [.006, .074]). Thus, Hypothesis 2 was supported. Table 4 summarizes the hypothesized indirect and conditional indirect effects.

TABLE 2 Study 4: Within- and between-person descriptive statistics and correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender	—	.17	.08	−.18	−.03	.00	−.10	−.06	.02	.17	−.00	−.05	.07	.11
2. Age	.15***	—	.03	−.24*	.20	.10	−.19	−.22*	.06	.07	.21	.15	.12	.10
3. Ethnicity	.09*	.04	—	.08	−.04	−.11	−.14	−.03	−.15	.09	−.12	−.11	.02	.01
4. Education	−.18***	−.24***	.08*	—	−.00	.09	.23*	−.01	−.07	−.06	−.08	.02	−.07	−.08
5. Tenure	−.05	.23***	−.03	−.05	—	−.01	−.12	.02	−.03	.01	−.15	.07	.01	.02
6. Team size	.03	.10**	−.11**	.11**	−.04	—	−.27*	−.28**	.06	.23*	.01	.10	.05	.05
7. Promotion	−.04	−.23***	−.15***	.20***	−.14***	−.29***	—	.16	.01	−.04	.09	.15	−.04	−.06
8. Prevention	−.05	−.22***	−.03	.00	.04	−.34***	.18***	—	.03	.06	−.07	−.05	−.05	.00
9. Mistakes	.01	.03	−.05	−.03	−.00	.01	−.00	−.01	—	.17	.05	−.05	−.04	−.04
10. Planned learning	.08*	.03	.06	−.01	−.01	.12**	−.01	.00	.15***	—	.35**	.29**	.07	.13
11. Humility	.04	.14***	−.09*	−.05	−.13**	−.01	.07	−.08*	.11**	.22***	—	.63***	.29**	.33**
12. Timprovement	−.01	.09*	−.09*	.02	.03	.06	.12**	−.07	−.03	.15***	.50***	—	.44***	.46***
13. Prior Tperformance	.08*	.08*	.02	−.02	.02	.01	−.02	−.03	.06	.06	.17***	.27***	—	.98***
14. Tperformance	.11**	.07	.01	−.03	.02	.01	−.04	.00	.02	.06	.28***	.45***	.45***	—
M	1.85	43.89	1.04	1.85	5.79	10.60	3.66	4.05	.51	3.64	3.10	2.47	3.98	4.02
SD	.36	10.49	.19	.36	5.13	13.89	.67	.56	.18	.52	.98	.88	.56	.55

Note. Variables 1 through 8 are between-individual (level 2) variables. Listwise deletion was used.
Variables 9 through 13 are within-individual (level 1) variables. Within-individual correlations are shown below the diagonal, and are based on within-individual scores ($N = 686$). Between-individual correlations are shown above the diagonal and are based on between-individual scores ($N = 85$). Means and standard deviations are based on between-individual scores. Gender (1 = male, 2 = female). Ethnicity (1 = white, 2 = Non-white). Education (1 = high school, associates diploma, or technical qualification, 2 = bachelor's degree or above). Promotion = Promotion focus, Prevention = Prevention focus, Mistakes = (0 = Control Condition, 1 = Learning from mistakes condition), Timprovement = Team improvement-oriented behaviors, Prior Tperformance = Prior day's team performance, Tperformance = Team performance.
$^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

TABLE 3 Study 4: Multilevel path model results

	Model 1		Model 2							
	Leader expressed humility		Leader planned learning		Leader expressed humility		Team improvement-oriented behaviors		Team performance	
	B	*SE*	B	*SE*	B	*SE*	B	*SE*	B	*SE*
Level 2 variables										
Promotion focus	.12	.17	−.03	.09	.12	.17	.19	.15	−.05	.08
Level 1 variables										
Recall of learning from mistakes	.29**	.09	.27**	.10	.26**	.09	−.11	.06	.07	.05
Leader humility							.25***	.04	.02	.03
Leader planned learning					.13**	.05	.02	.03	−.04	.03
Team improvement-oriented behaviors									.48***	.06
Cross-Level moderation										
Recall of learning from mistakes X Promotion focus	.28*	.13	.44*	.20						

Note. *N* (level 1) = 686; *N* (level 2) = 85. Listwise deletion was used. Unstandardized coefficients are reported. Predictors were grand-mean centered. Model 1 tests Hypotheses 1 and 3 and Model 2 tests Hypotheses 2, 4, 5, and 6.
*$p < .05$; **$p < .01$; ***$p < .001$.

TABLE 4 Study 4: Summary of indirect effects and conditional indirect effects

Effect		Indirect	95% CI for indirect effect
Mediation effects with leader expressed humility as the outcome			
Planned learning as a mediator		.034	[.006, .074]
Moderated mediation effects with leader expressed humility as the outcome			
Planned learning as the mediator	High promotion focus	.072	[.018, .142]
	Low promotion focus	−.004	[−.056, .045]
Mediation effects with team performance as the outcome			
Planned learning, expressed humility, and team improvement-oriented behavior as mediators		.004	[−.0003, .008]
Moderated mediation effects with team performance as the outcome			
Planned learning, expressed humility, and team improvement-oriented behavior as mediators	High promotion focus	.008	[.001, .018]
	Low promotion focus	.000	[−.007, .006]

Note. Analyses were based on 20,000 resamples via R program (Selig & Preacher, 2008).

The moderating effect of promotion focus on the relationship between leader recall of learning from mistakes and leader expressed humility was positive and significant ($B = .28$, $p = .032$). We plotted the interaction at conditional values of promotion focus (1SD above and below the mean) to better understand the nature of this interaction (see Figure 5). Following procedures recommended by Preacher et al. (2006) to estimate simple slopes in a multi-level model, we found that the relationship between leader recall of learning from mistakes and leader expressed humility was more positive for individuals high in promotion focus ($B = .48$, $p < .001$) than for individuals low in promotion focus ($B = .10$, $p = .471$). Thus, Hypothesis 3 was supported.

To test for moderated mediation in Hypothesis 4, we followed procedures by Preacher et al. (2010) and calculated the magnitude of the indirect effects at conditional levels of promotion focus. As shown in Table 3, the interaction term of leader recall of learning from mistakes and promotion focus was significantly and positively related to leader planned learning ($B = .44$, $p = .026$). Simple slope analyses showed that leader recall learning from mistakes was more positively related to planned learning when leader promotion focus was higher ($B = .56$, $p < .001$) than when it was lower ($B = -.03$, $p = .878$). As further shown in Table 4, the indirect effects of leader recall of learning from mistakes on leader expressed humility through planned learning was more positive at high levels of promotion focus ($B = .07$, 95% CI [.018, .142]) than at low levels of promotion focus ($B = -.004$, 95% CI [−.056, .045]), supporting Hypothesis 4.

We next examined the downstream implications for humility on team performance. As Table 4 shows, the overall indirect effect of leader recall of learning from mistakes on team performance via leader planned learning, leader expressed humility, and team improvement-oriented behaviors was positive but not significant ($B = .004$, 95% CI = [−.0003, .0085]). Thus, Hypothesis 5 was not supported. We next conducted additional moderated mediation analyses to test if the serial mediation would be affected by leader promotion focus. Consistent with the expectation, the overall indirect effect was positive and significant at high levels of promotion focus ($B = .008$, 95% CI [.001, .018]), but not significant at low levels of promotion focus ($B = .000$, 95% CI [−.007, .006]). Thus, Hypothesis 6 was supported.

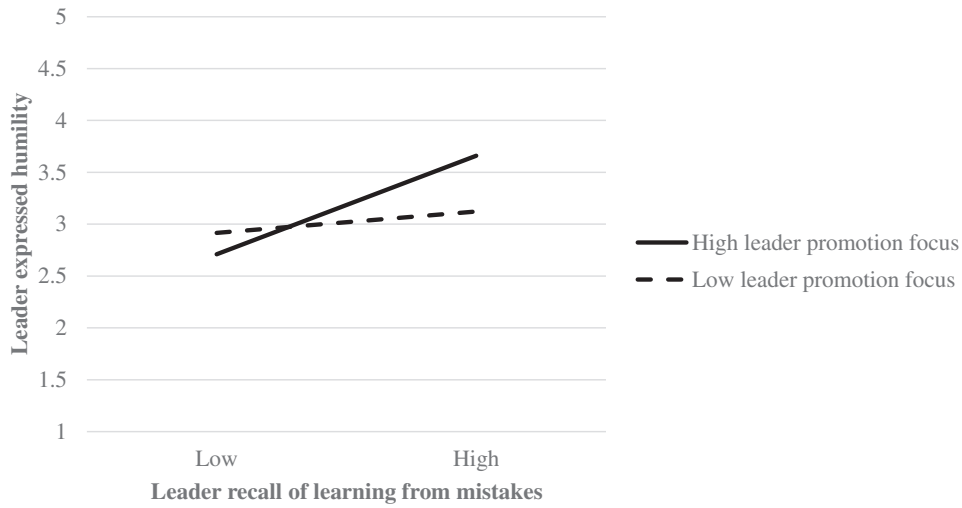

FIGURE 5 Study 4: The moderating effect of leader promotion focus on the relationship between leader recall of learning from mistakes and leader expressed humility. Learning from mistakes and leader expressed humility was positively related when leader promotion focus was high ($B = .48$, $p < .001$) but not when it was low ($B = .10$, $p = .471$)

Although results of Study 4 are promising, it is important to also highlight the limitations of this study. For instance, although common in ESM studies, the measures were all self-reported, which introduce common source bias concerns. Additionally, concerns exist surrounding the validity of the leader expressed humility and team performance measures, which would have benefited from third party evaluations given leaders may be positively biased in their self-assessments humility and team performance.

14.1 | General discussion

We propose a framework that explains how and when leaders' recall of learning from past mistakes leads to displays of humility, which in turn promotes team improvement-oriented behaviors and team performance. Across scenario-based experiments using managers from diverse industries, a laboratory experiment of student leaders and their teams, and a daily intervention study with managers, we found support for the influence of leaders' recall of learning from mistakes on their humility and the moderating role of leader promotion focus. We also found an indirect relationship between leader recall of learning from mistakes and expressed humility through planned learning. However, the hypothesized serial mediation of leader recall of learning from mistakes leading to team performance was not supported. This may be because leaders' own learning is relatively distal from their teams' improvement and performance outcomes; it alone may not have a significant main effect on team performance. Indeed, our moderated mediation results further showed that when in combination of higher levels of leader promotion focus, leaders' recall of learning from mistakes had a significant and positive downstream influence on team improvement-oriented behavior and team performance.

14.2 | Theoretical implications

Our primary contribution centers on identifying leaders' recall of learning from mistakes as an important intervention for triggering expressed humility. Whereas prior conceptual and empirical studies have largely focused on uncovering

the individual differences that affect humility (e.g., Nielsen & Marrone, 2018, Wang et al., 2018), there has been less insight into the situational factors that can prompt leader humility. Considering the malleable nature of expressed humility and the theoretical relevance of learning to elicit humility (Owens et al., 2013), we extend prior research to provide a theoretically grounded explanation for how and when leaders' recall of learning from a past mistake can translate into expressed humility. Our findings suggest that when leaders go through the process of reflecting on a past mistake they learned from, they are more likely to plan for learning and then engage in humble behaviors while leading their teams. Leader humility, in turn, translates into teams' improvement-oriented behaviors and benefits team performance.

Our research shows how theory and practice can benefit from examining the role of recall of learning from mistakes as it relates to leadership effectiveness. For many, the implicit theory of leadership reflects strength, confidence, effectiveness, and fixing mistakes rather than making them (Lord et al., 1984). However, these implicit assumptions lead to research questions and practical guidance that are incompatible with what we know to be true about leaders—even the best ones inevitably make mistakes (Putz et al., 2012; van Dyck et al., 2005). Working from a different set of assumptions that acknowledges that leaders are imperfect, we are inspired by new and important questions: How do leaders respond to their own mistakes? Why do some leaders respond to mistake experiences more effectively than others? How does the way in which leaders respond to their mistakes affect the people they work with? The current research sheds light on these questions and illustrates the benefits of recall of learning from mistakes for developing leaders' own humble behaviors and promoting their teams' improvement.

Our research also introduces leaders' promotion focus as an important contingency that affects when recall of learning from mistakes is likely to translate into expressed humility. Although we find that recall of learning from mistakes triggers expressions of humility, we also document that the benefits of recall of learning from mistakes are more likely to be observed in leaders with a promotion focus. We demonstrated this interaction using two operationalizations of leader promotion focus: a self-reported disposition (Higgins, 1997) and a psychological state temporarily activated by a writing prime (Liberman et al., 1999). Owens and Hekman (2016) have shown that leader humility facilitates team promotion focus, a shared state that emerges from team interactions. Extending their research by incorporating both trait- and state-like regulatory foci, we show that leaders' promotion focus amplifies the benefits of a recall of learning from mistakes intervention on their planned learning and later expressed humility, which in turn has downstream benefits for their teams' improvement-oriented behaviors. Furthermore, our ESM study captures that the dynamic, within-individual (versus between-individual) perspective contrasts with most prior research on leader humility, which implicitly assumes that leaders are either more or less humble. Thus, the within-individuals study accurately tests how daily interventions of leader recall of learning from mistakes affects their daily displays of humility through planned learning behavior.

In addition, our research extends knowledge about leadership training and development. Prior research has focused on formal learning programs, which assume that individuals are passive recipients of training. Scholars have called for more attention to understand the influence of active learning interventions, especially those focusing on mistakes (Bell et al., 2017). Our findings suggest that (1) learning can begin with leaders and shape leaders' humble behaviors, and (2) leaders' recall of learning provides followers with a path to improve team outcomes. We found that leaders' recall of learning from mistakes had a positive influence on their teams' improvement-oriented behavior and performance when leaders were more promotion-focused. Thus, leaders' self-reflection through thinking about a past mistake most effectively harvests these benefits when it is accompanied by a promotion focus.

14.3 | Practical implications

Our findings provide valuable implications for practice in leadership and teams. First, mistakes lay down a potentially rich foundation that leaders can use to learn and improve. Rather than seeing mistakes only in a negative light, leaders can benefit from recognizing that the learning opportunities from these mistakes may be a potential source of value to

them, their team members, and the broader organization. Leaders may wish to devote time to analyzing their mistakes and learning from those experiences. The findings from Study 1 suggest that training programs that aim to promote humble leadership will be more effective when such interventions ask leaders to reflect on both their mistakes and learning from their mistakes rather than just asking them to focus on a prior mistake. Relatedly, our findings in Study 4 show that leader planning for learning is a mediator that links recall of learning from mistakes to expressed humility. Thus, designing training programs that allow managers to reflect on past mistakes and make plans for future behaviors may be especially beneficial in eliciting humility. Moreover, our ESM study showed that leader humility can vary on a day-to-day basis depending on the interactions they had in the morning. Managers can consider incorporating a diary reflection into their routine so they can accumulate and translate daily learned lessons into humble behaviors.

Second, our findings underscore the value of humility in leadership positions. Organizations and leaders should be aware that teams with humble leaders are more inclined to learn, speak up, and perform better. Organizational decision-makers should encourage their leaders to demonstrate humble behaviors in the form of acknowledging limitations, appreciating those who are skilled in different areas, and being open-minded about various perspectives. By showing the value of leaders' recall of learning from their own mistakes, our research lends further theoretical and empirical rigor to assertions that effective leaders should not fake confidence or be blind to their limitations but instead allow themselves to express humility (Grant, 2021; Pfeffer, 2015).

Third, our finding that leaders who are more concerned with growth, advancement, and ideal goals (i.e., a heightened promotion focus) are more likely to reap the benefits of recall of learning from mistakes may help organizations plan developmental activities. That is, when planning interventions aimed at maximizing the potential benefits of reflecting on learning from one's mistakes, it may be advisable to include language or framing that induces a promotion focus. Additionally, organizations may select individuals with a desire to promote and grow into leadership positions or provide interventions that inspire team leaders to think about aspirations, gains, and hopes.

The above implications notwithstanding, prior research has revealed that excessive reflection activities can lead to ego depletion (Baumeister & Vohs, 2007; Kim & Kim, 2020), which interferes with subsequent learning potential. We thus remind readers to apply our findings with caveats, as do so in combination with effective ways to remove emotional burdens may allow for more beneficial learning outcomes (Eskreis-Winkler & Fishbach, 2022).

14.4 | Limitations and directions for future research

Despite having used varied methods across our studies, there are still methodological limitations to our studies. First, we only establish causality in the first stage of the model (i.e., learning from one's own mistakes and leader humility) and do not present causal evidence of the role of humility in eliciting improved team outcomes. Future research may employ an experimental-causal-chain design (Spencer et al., 2005) whereby leader humility is experimentally manipulated and the causal role of leader humility on team effectiveness can be examined. Relatedly, in our ESM study, we measured leader-expressed humility and improvement-oriented team behavior simultaneously, and team performance on the next morning. The lack of a time lag between the variables undermined our ability to draw causal inferences regarding the relationships between leader humility and team processes. Furthermore, as is common in ESM studies, all measures in Study 4 were self-reported, which evokes concerns about common method bias. In addition, although leaders may be able to reflect on their own mistakes and observe their teams' behavior and performance, humility is a quality expressed in social interactions, and there are advantages when it is evaluated by others (Owens et al., 2013). Thus, we encourage future research to replicate these findings using field experiments with time lags between the studied variables and with multiple rating sources.

We were also unable to address several other important research questions that may provide fertile ground for future work. First, our conceptualization of mistakes is relatively broad, encompassing various kinds of mistakes (Cannon & Edmondson, 2001). Our work did not examine whether certain types of mistakes are more or less likely to be promising sources of humility. In future research, scholars should delve more deeply into the types of experiences that

produce humility. Are certain kinds of mistakes easier to recognize and learn from than others? As noted by an anonymous reviewer, managers' mistakes may have different degrees of effects on their employees. For example, compared to mistakes with no direct impact on employees, mistakes with disastrous consequences that might lead to losses in revenue and layoffs would have different learning outcomes.

Second, whereas we have focused on humility as a malleable behavioral quality (Owens et al., 2013), it is also a trait (Ashton & Lee, 2007). It remains to be seen whether the positive effect of the recall of learning from mistakes intervention would be affected by a leader's level of trait humility. Through a trait activation process (Tett & Burnett, 2003), it is possible that individuals with higher levels of trait humility are more likely to conscientiously analyze their own errors, more systematically plan for future actions, and harvest the benefits of recall of learning from mistakes.

Third, our studies did not explore the potential negative implications of excessively reflecting on one's mistakes. Might excessive reflection activities be ego-depleting (Baumeister & Vohs, 2007) or divert leaders from matters that require their attention (Ocasio, 2011)? Do unexpected mistakes injure leaders' self-esteem in ways that disrupt the learning process? We recommend that future research address questions like these to provide a more balanced understanding of the costs and benefits of leaders' recall of learning from mistakes. Finally, we acknowledge that in Studies 2 and 3, we cannot determine whether it is promotion focus that strengthens or prevention focus that weakens the effects of recall of learning from mistakes on expressed humility. Even in Study 4, one could argue that low ratings on promotion focus can be a proxy for high levels of prevention focus because of the typical negative correlations between promotion and prevention scales. We encourage future research to replicate our findings by including manipulations of low and high promotion focus and neutral conditions.

15 | CONCLUSION

Our findings reveal that leaders' recall of learning from mistakes encourages them to plan for learning and behave in humble ways, a relationship that is stronger for leaders with a higher promotion focus. Leaders' humble behaviors, in turn, translate into to team improvement-oriented behaviors, ultimately promoting team performance. Overall, we hope our findings will inspire further research to better understand how and when recall of learning from mistakes benefits leaders and their teams.

ACKNOWLEDGMENTS

This research was supported in part by Fisher Leadership Initiative at the Ohio State University. We appreciate feedback from seminar participants at University of Akron, University of Buffalo, University of Cambridge, and Tsinghua University. Correspondence concerning this article should be addressed to Jia (Jasmine) Hu, Department of Management and Human Resources, Fisher College of Business, the Ohio State University, 2100 Neil Avenue, Columbus, OHIO, 43210.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ORCID

Jia (Jasmine) Hu https://orcid.org/0000-0002-5182-9260

NOTES

[1] The 4th-item from the Liden et al. (1993) scale "This subordinate is superior [so far] to other new subordinates that I've supervised before" was excluded due to its misfit with the daily measure.

[2] Although we report our study results without controls, in supplementary analyses we control for several relevant between-person variables including leader gender (1 = male, 2 = female), leader education, age, and team tenure, ethnicity, team size,

leader prevention focus (9-item measure, Neubert et al., 2008), as well as a within-person variable (prior day's performance). The results remain virtually the same with all control variables, only with between-person control variables, or only with within-person control variable.

[3] Although the model that treated team voice and learning behaviors as independent factors (six-factor model) showed a better fit than did the model that combined team voice and learning, we still combined team voice and learning for two reasons. First, team voice and learning were conceptually overlapping and we expect leader humility influence the two in similar ways. Second, the hypothesized model also showed acceptable goodness-of-fit indices as recommended by Hu and Bentler (1999), which supports the combination of the two factors to indicate a higher-order construct of improvement-oriented behavior. Results indicated that the hypothesized model provided a better fit to the data compared to other alternatives.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Antonacopoulou, E. P., & Sheaffer, Z. (2014). Learning in crisis: Rethinking the relationship between organizational learning and crisis management. *Journal of Management Inquiry*, *23*(1), 5–21. https://doi.org/10.1177/1056492612472730

Argote, L. (1999). *Organizational learning: Creating, retaining, and transferring knowledge*. Kluwer.

Argyris, C. (1976). Single-loop and double-loop models in research on decision making. *Administrative Science Quarterly*, *21*(3) 363–375. https://doi.org/10.2307/2391848

Ashton, M. C., & Lee, K. (2007). Empirical, theoretical, and practical advantages of the HEXACO model of personality structure. *Personality and Social Psychology Review*, *11*(2), 150–166. https://doi.org/10.1177/1088868306294907

Barnes, C. M., Lucianetti, L., Bhave, D. P., & Christian, M. S. (2015). "You wouldn't like me when I'm sleepy": Leaders' sleep, daily abusive supervision, and work unit engagement. *Academy of Management Journal*, *58*(5), 1419–1437. https://doi.org/10.5465/amj.2013.1063

Bashshur, M. R., & Oc, B. (2015). When voice matters: A multilevel review of the impact of voice in organizations. *Journal of Management*, *41*(5), 1530–1554. https://doi.org/10.1177/0149206314558302

Baum, J. A., & Ingram, P. (1998). Survival-enhancing learning in the Manhattan hotel industry, 1898–1980. *Management Science*, *44*(7), 996–1016. https://doi.org/10.1287/mnsc.44.7.996

Baumeister, R. F., & Vohs, K. D. (2007). Self-Regulation, ego depletion, and motivation. *Social and Personality Psychology Compass*, *1*(1), 115–128. https://doi.org/10.1111/j.1751-9004.2007.00001.x

Bell, B. S., Tannenbaum, S. I., Ford, J. K., Noe, R. A., & Kraiger, K. (2017). 100 years of training and development research: What we know and where we should go. *Journal of Applied Psychology*, *102*(3), 305–323. https://doi.org/10.1037/apl0000142

Bligh, M. C., Kohles, J. C., & Yan, Q. (2018). Leading and learning to change: the role of leadership style and mindset in error learning and organizational change. *Journal of Change Management*, *18*(2), 116–141. https://doi.org/10.1080/14697017.2018.1446693

Bresman, H. (2010). External learning activities and team performance: A multimethod field study. *Organization Science*, *21*(1), 81–96. https://doi.org/10.1287/orsc.1080.0413

Cannon, M. D., & Edmondson, A. C. (2001). Confronting failure: Antecedents and consequences of shared beliefs about failure in organizational work groups. *Journal of Organizational Behavior*, *22*(2), 161–177. https://doi.org/10.1002/job.85

Cannon, M. D., & Edmondson, A. C. (2005). Failing to learn and learning to fail (intelligently): How great organizations put failure to work to innovate and improve. *Long Range Planning*, *38*(3), 299–319. https://doi.org/10.1016/j.lrp.2005.04.005

Carmeli, A., & Schaubroeck, J. (2008). Organizational crisis-preparedness: The importance of learning from failures. *Long Range Planning*, *41*(2), 177–196. https://doi.org/10.1016/j.lrp.2008.01.001

Carmeli, A., Tishler, A., & Edmondson, A. C. (2012). CEO relational leadership and strategic decision quality in top management teams: The role of team trust and learning from failure. *Strategic Organization*, *10*(1), 31–54. https://doi.org/10.1177/1476127011434797

Chatterjee, A., & Hambrick, D. C. (2007). It's all about me: Narcissistic chief executive officers and their effects on company strategy and performance. *Administrative Science Quarterly*, *52*(3), 351–386. https://doi.org/10.2189/asqu.52.3.351

Courtright, S. H., Gardner, R. G., Smith, T. A., McCormick, B. W., & Colbert, A. E. (2016). My family made me do it: A cross-domain, self-regulatory perspective on antecedents to abusive supervision. *Academy of Management Journal*, *59*(5), 1630–1652. https://doi.org/10.5465/amj.2013.1009

Crossan, M. M., Lane, H. W., White, R. E., & Djurfeldt, L. (1995). Organizational learning: Dimensions for a theory. *The International Journal of Organizational Analysis*, *3*(4), 337–360. https://doi.org/10.1108/eb028835

Crowe, E., & Higgins, E. T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. *Organizational Behavior and Human Decision Processes*, *69*(2), 117–132. https://doi.org/10.1006/obhd.1996.2675

Day, D. V., & Dragoni, L. (2015). Leadership development: An outcome-oriented review based on time and levels of analyses. *Annual Review of Organizational Psychology and Organizational Behavior*, *2*(1), 133–156. https://doi.org/10.1146/annurev-orgpsych-032414-111328

Davis, D. E., Worthington jr, E. L., Hook, J. N., Emmons, R. A., Hill, P. C., Bollinger, R. A., & Van Tongeren, D. R. (2013). Humility and the development and repair of social bonds: Two longitudinal studies. *Self and Identity*, *12*(1), 58–77. https://doi.org/10.1080/15298868.2011.636509

Debus, M. E., Probst, T. M., König, C. J., & Kleinmann, M. (2012). Catch me if I fall! Enacted uncertainty avoidance and the social safety net as country-level moderators in the job insecurity–job attitudes link. *Journal of Applied Psychology*, *97*(3), 690–698. https://doi.org/10.1037/a0027832

de Lange, M. A., & van Knippenberg, A. (2009). To err is human: How regulatory focus and action orientation predict performance following errors. *Journal of Experimental Social Psychology*, *45*(6), 1192–1199. https://doi.org/10.1016/j.jesp.2009.07.009

Detert, J. R., & Edmondson, A. C. (2011). Implicit voice theories: Taken-for-granted rules of self-censorship at work. *Academy of Management Journal*, *54*(3), 461–488. https://doi.org/10.5465/amj.2011.61967925

Detert, J. R., & Treviño, L. K. (2010). Speaking up to higher-ups: How supervisors and skip-level leaders influence employee voice. *Organization Science*, *21*(1), 249–270. https://doi.org/10.1287/orsc.1080.0405

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, *95*(2), 256–273. https://doi.org/10.1037/0033-295X.95.2.256

Dwiwardani, C., Hill, P. C., Bollinger, R. A., Marks, L. E., Steele, J. R., Doolin, H. N., & Davis, D. E. (2014). Virtues develop from a secure base: Attachment and resilience as predictors of humility, gratitude, and forgiveness. *Journal of Psychology and Theology*, *42*(1), 83–90. https://doi.org/10.1177/009164711404200109

Edmondson, A. C. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, *44*(2), 350–383. https://doi.org/10.2307/2666999

Edmondson, A. C. (2003). Speaking up in the operating room: How team leaders promote learning in interdisciplinary action teams. *Journal of Management Studies*, *40*(6), 1419–1452. https://doi.org/10.1111/1467-6486.00386

Edmondson, A. C. (2004). Learning from mistakes is easier said than done: Group and organizational influences on the detection and correction of human error. *Journal of Applied Behavioral Science*, *40*(1), 66–90. https://doi.org/10.1177/0021886304263849

Eskreis-Winkler, L., & Fishbach, A. (2022). You think failure is hard? So is learning from it. *Perspectives on Psychological Science*, *17*(6), 1511–1524. https://doi.org/10.1177/1745691621105981

Foulk, T. A., Lanaj, K., Tu, M. H., Erez, A., & Archambeau, L. (2018). Heavy is the head that wears the crown: An actor-centric approach to daily psychological power, abusive leader behavior, and perceived incivility. *Academy of Management Journal*, *61*(2), 661–684. https://doi.org/10.5465/amj.2015.1061

Freitas, A. L., & Higgins, E. T. (2002). Enjoying goal-directed action: The role of regulatory fit. *Psychological Science*, *13*(1), 1–6. https://doi.org/10.1111/1467-9280.00401

Friedman, R. S., & Förster, J. (2001). The effects of promotion and prevention cues on creativity. *Journal of Personality and Social Psychology*, *81*(6), 1001–1013. https://doi.org/10.1037/0022-3514.81.6.1001

Gibson, C., & Vermeulen, F. (2003). A healthy divide: Subgroups as a stimulus for team learning behavior. *Administrative Science Quarterly*, *48*(2), 202–239. https://doi.org/10.2307/3556657

Gino, F., Kouchaki, M., & Casciaro, T. (2020). Why connect? Moral consequences of networking with a promotion or prevention focus. *Journal of Personality and Social Psychology*, *119*(6), 1221–1238. https://doi.org/10.1037/pspa0000226

Gino, F., & Margolis, J. D. (2011). Bringing ethics into focus: How regulatory focus and risk preferences influence (un) ethical behavior. *Organizational Behavior and Human Decision Processes*, *115*(2), 145–156. https://doi.org/10.1016/j.obhdp.2011.01.006

Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, *54*(7), 493–503. https://doi.org/10.1037/0003-066X.54.7.493

Goodman, J. S., Wood, R. E., & Hendrickx, M. (2004). Feedback specificity, exploration, and learning. *Journal of Applied Psychology*, *89*(2), 248–262. https://doi.org/10.1037/0021-9010.89.2.248

Grant, A. M. (2021). *Think again: The power of knowing what you don't know*. Penguin Books.

Grant, A. M., Gino, F., & Hofmann, D. A. (2011). Reversing the extraverted leadership advantage: The role of employee proactivity. *Academy of Management Journal*, *54*, 528–550. https://doi.org/10.5465/amj.2011.61968043

Grijalva, E., Harms, P. D., Newman, D. A., Gaddis, B. H., & Fraley, R. C. (2015). Narcissism and leadership: A meta-analytic review of linear and nonlinear relationships. *Personnel Psychology*, *68*(1), 1–47. https://doi.org/10.1111/peps.12072

Hammedi, W., van Riel, A. C., & Sasovova, Z. (2011). Antecedents and consequences of reflexivity in new product idea screening. *Journal of Product Innovation Management*, *28*(5), 662–679. https://doi.org/10.1111/j.1540-5885.2011.00831.x

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, *52*(12), 1280–1300. https://doi.org/10.1037/0003-066X.52.12.1280

Higgins, E. T., & Pinelli, F. (2020). Regulatory focus and fit effects in organizations. *Annual Review of Organizational Psychology and Organizational Behavior*, *7*, 25–48. https://doi.org/10.1146/annurev-orgpsych-012119-045404

Higgins, E. T., Roney, C. J. R., Crowe, E., & Hymes, C. (1994). Ideal versus ought predilections for approach and avoidance distinct self-regulatory systems. *Journal of Personality and Social Psychology*, *66*(2), 276–286. https://doi.org/10.1037/0022-3514.66.2.276

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Johnson, R. E., Chang, C. H., & Yang, L. Q. (2010). Commitment and motivation at work: The relevance of employee identity and regulatory focus. *Academy of Management Review*, *35*(2), 226–245. https://doi.org/10.5465/amr.35.2.zok226

Johnson, R. E., Venus, M., Lanaj, K., Mao, C., & Chang, C.-H. (2012). Leader identity as an antecedent of the frequency and consistency of transformational, consideration, and abusive leadership behaviors. *Journal of Applied Psychology*, *97*(6), 1262–1272. https://doi.org/10.1037/a0029043

Kark, R., Katz-Navon, T., & Delegach, M. (2015). The dual effects of leading for safety: The mediating role of employee regulatory focus. *Journal of Applied Psychology*, *100*(5), 1332–1348. https://doi.org/10.1037/a0038818

Kim, Y. J., & Kim, J. (2020). Does negative feedback benefit (or harm) recipient creativity? The role of the direction of feedback flow. *Academy of Management Journal*, *63*(2), 584–612. https://doi.org/10.5465/amj.2016.1196

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall.

Koopman, J., Conway, J. M., Dimotakis, N., Tepper, B. J., Lee, Y. E., Rogelberg, S. G., & Lount Jr., R. B. (2021). Does CWB repair negative affective states, or generate them? Examining the moderating role of train empathy. *Journal of Applied Psychology*, *106*(10), 1493–1516. https://doi.org/10.1037/apl0000837

Kostopoulos, K. C., & Bozionelos, N. (2011). Team exploratory and exploitative learning: Psychological safety, task conflict, and team performance. *Group & Organization Management*, *36*(3), 385–415. https://doi.org/10.1177/1059601111405985

Krause, N., & Hayward, R. D. (2014). Religious involvement and humility. *The Journal of Positive Psychology*, *9*(3), 254–265. https://doi.org/10.1080/17439760.2014.891153

Lanaj, K., Chang, C. -H. D., & Johnson, R. E. (2012). Regulatory focus and work-related outcomes: A review and meta-analysis. *Psychological Bulletin*, *138*(5), 998–1034. https://doi.org/10.1037/a0027723

Lanaj, K., Foulk, T. A., & Erez, A. (2019). Energizing leaders via self-reflection: A within-person field experiment. *Journal of Applied Psychology*, *104*(1), 1–18. https://doi.org/10.1037/apl0000350

Li, A. N., Liao, H., Tangirala, S., & Firth, B. M. (2017). The content of the message matters: The differential effects of promotive and prohibitive team voice on team productivity and safety performance gains. *Journal of Applied Psychology*, *102*(8), 1259–1270. https://doi.org/10.1037/apl0000215

Liberman, N., Idson, L. C., Camacho, C. J., & Higgins, E. T. (1999). Promotion and prevention choices between stability and change. *Journal of Personality and Social Psychology*, *77*(6), 1135–1145. https://doi.org/10.1037/0022-3514.77.6.1135

Liden, R. C., Wayne, S. J., & Stilwell, D. (1993). A longitudinal study on the early development of leader-member exchanges. *Journal of Applied Psychology*, *78*(4), 662–674. https://doi.org/10.1037/0021-9010.78.4.662

Lin, S. -H. J., & Johnson, R. E. (2015). A suggestion to improve a day keeps your depletion away: Examining promotive and prohibitive voice behaviors within a regulatory focus and ego depletion framework. *Journal of Applied Psychology*, *100*(5), 1381–1397. https://doi.org/10.1037/apl0000018

Liu, W., Mao, J., & Chen, X. (2017). Leader humility and team innovation: investigating the substituting role of task interdependence and the mediating role of team voice climate. *Frontiers in Psychology*, *8*, 1115–1127. https://doi.org/10.3389/fpsyg.2017.01115

Liu, Z., Venkatesh, S., Murphy, S. E., & Riggio, R. E. (2021). Leader development across the lifespan: A dynamic experiences-grounded approach. *The Leadership Quarterly*, *32*(5), 101382. https://doi.org/10.1016/j.leaqua.2020.101382

Lord, R. G., Foti, R. J., & De Vader, C. L. (1984). A test of leadership categorization theory: Internal structure, information processing, and leadership perceptions. *Organizational Behavior and Human Performance*, *34*(3), 343–378. https://doi.org/10.1016/0030-5073(84)90043-6

Louis, M. R., & Sutton, R. I. (1991). Switching cognitive gears: From habits of mind to active thinking. *Human Relations*, *44*(1), 55–76. https://doi.org/10.1177/001872679104400104

MacKenzie, S. B., Podsakoff, P. M., & Podsakoff, N. P. (2011). Challenge-oriented organizational citizenship behaviors and organizational effectiveness: Do challenge-oriented behaviors really have an impact on the organization's bottom line? *Personnel Psychology*, *64*(3), 559–592. https://doi.org/10.1111/j.1744-6570.2011.01219.x

McClean, E. J., Martin, S. R., Emich, K. J., & Woodruff, C. T. (2018). The social consequences of voice: An examination of voice type and gender on status and subsequent leader emergence. *Academy of Management Journal*, *61*(5), 1869–1891. https://doi.org/10.5465/amj.2016.0148

Mintzberg, H. (1973). *The nature of managerial work*. HarperCollins.

Morgeson, F. P. (2005). The external leadership of self-managing teams: Intervening in the context of novel and disruptive events. *Journal of Applied Psychology*, *90*(3), 497–508. https://doi.org/10.1037/0021-9010.90.3.497

Morgeson, F. P., & DeRue, D. S. (2006). Event criticality, urgency, and duration: Understanding how events disrupt teams and influence team leader intervention. *The Leadership Quarterly*, *17*(3), 271–287. https://doi.org/10.1016/j.leaqua.2006.02.006

Morris, J. A., Brotheridge, C. M., & Urbanski, J. C. (2005). Bringing humility to leadership: Antecedents and consequences of leader humility. *Human Relations*, *58*(10), 1323–1350. https://doi.org/10.1177/0018726705059929

Muthén, L. K., & Muthén, B. O. (2018). *Mplus user's guide*. Muthén & Muthén.

Neubert, M. J., Kacmar, K. M., Carlson, D. S., Chonko, L. B., & Roberts, J. A. (2008). Regulatory focus as a mediator of the influence of initiating structure and servant leadership on employee behavior. *Journal of Applied Psychology*, *93*(6), 1220–1233. https://doi.org/10.1037/a0012695

Nielsen, R., & Marrone, J. A. (2018). Humility: Our current understanding of the construct and its role in organizations. *International Journal of Management Reviews*, *20*(4), 805–824. https://doi.org/10.1111/ijmr.12160

Ocasio, W. (2011). Attention to attention. *Organization Science*, *22*(5), 1286–1296. https://doi.org/10.1287/orsc.1100.0602

Ou, A. Y., Tsui, A. S., Kinicki, A. J., Waldman, D. A., Xiao, Z., & Song, L. J. (2014). Humble chief executive officers' connections to top management team integration and middle managers' responses. *Administrative Science Quarterly*, *59*(1), 34–72. https://doi.org/10.1177/0001839213520131

Ou, A. Y., Waldman, D. A., & Peterson, S. J. (2018). Do humble CEOs matter? An examination of CEO humility and firm outcomes. *Journal of Management*, *44*(3), 1147–1173. https://doi.org/10.1177/0149206315604187

Owens, B. P., & Hekman, D. R. (2012). Modeling how to grow: An inductive examination of humble leader behaviors, contingencies, and outcomes. *Academy of Management Journal*, *55*(4), 787–818. https://doi.org/10.5465/amj.2010.0441

Owens, B. P., & Hekman, D. R. (2016). How does leader humility influence team performance? Exploring the mechanisms of contagion and collective promotion focus. *Academy of Management Journal*, *59*(3), 1088–1111. https://doi.org/10.5465/amj.2013.0660

Owens, B. P., Johnson, M. D., & Mitchell, T. R. (2013). Expressed humility in organizations: Implications for performance, teams, and leadership. *Organization Science*, *24*(5), 1517–1538. https://doi.org/10.1287/orsc.1120.0795

Owens, B. P., Wallace, A. S., & Waldman, D. A. (2015). Leader narcissism and follower outcomes: The counterbalancing effect of leader humility. *Journal of Applied Psychology*, *100*(4), 1203–1213. https://doi.org/10.1037/a0038698

Peng, A. C. M., Schaubroeck, J., Chong, S., & Li, Y. (2019). Discrete emotions linking abusive supervision to employee intention and behavior. *Personnel Psychology*, *72*(3), 393–419. https://doi.org/10.1111/peps.12310

Pfeffer, J. (2015). *Leadership BS: Fixing workplaces and careers one truth at a time*. Harper Business.

Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interactions in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of Educational and Behavioral Statistics*, *31*(4), 437–448. https://doi.org/10.3102/10769986031004437

Preacher, K. J., Zyphur, M. J., & Zhang, Z. (2010). A general multilevel SEM framework for assessing multilevel mediation. *Psychological Methods*, *15*(3), 209–233. https://doi.org/10.1037/a0020141

Putz, D., Schilling, J., & Kluge, A. (2012). Measuring organizational climate for learning from errors at work. In: J. Bauer, C. Harteis (Eds) *Human fallibility. Professional and practice-based learning* (pp. 107–123). Springer.

Rowatt, W. C., Powers, C., Targhetta, V., Comer, J., Kennedy, S., & Labouff, J. (2006). Development and initial validation of an implicit measure of humility relative to arrogance. *The Journal of Positive Psychology*, *1*(4), 198–211. https://doi.org/10.1080/17439760600885671

Schilpzand, P., Houston, L., & Cho, J. (2018). Not too tired to be proactive: Daily empowering leadership spurs next-morning employee proactivity as moderated by nightly sleep quality. *Academy of Management Journal*, *61*(6), 2367–2387. https://doi.org/10.5465/amj.2016.0936

Selig, J. P., & Preacher, K. J. (2008). *Monte Carlo method for assessing mediation: An interactive tool for creating confidence intervals for indirect effects*. [Computer software]. http://www.quantpsy.org

Simon, D. H., & Lieberman, M. B. (2010). Internal and external influences on adoption decisions in multi-unit firms: The moderating effect of experience. *Strategic Organization*, *8*(2), 132–154. https://doi.org/10.1177/1476127010366583

Spence, J. R., Brown, D. J., Keeping, L. M., & Lian, H. (2014). Helpful today, but not tomorrow? Feeling grateful as a predictor of daily organizational citizenship behaviors. *Personnel Psychology*, *67*(3), 705–738. https://doi.org/10.1111/peps.12051

Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology*, *89*(6), 845–851. https://doi.org/10.1037/0022-3514.89.6.845

Tett, R. P., & Burnett, D. D. (2003). A personality trait-based interactionist model of job performance. *Journal of Applied Psychology*, *88*(3), 500–517. https://doi.org/10.1037/0021-9010.88.3.500

Tjosvold, D., Yu, Z. Y., & Hui, C. (2004). Team learning from mistakes: The contribution of cooperative goals and problem-solving. *Journal of Management Studies*, *41*(7), 1223–1245. https://doi.org/10.1111/j.1467-6486.2004.00473.x

Van Der Vegt, G. S., & Bunderson, J. S. (2005). Learning and performance in multidisciplinary teams: The importance of collective team identification. *Academy of Management Journal*, *48*(3), 532–547. https://doi.org/10.5465/amj.2005.17407918

van Dyck, C., Frese, M., Baer, M., & Sonnentag, S. (2005). Organizational error management culture and its impact on performance: A two-study replication. *Journal of Applied Psychology*, *90*(6), 1228–1240. https://doi.org/10.1037/0021-9010.90.6.1228

Van Dyne, L., & LePine, J. A. (1998). Helping and voice extra-role behaviors: Evidence of construct and predictive validity. *Academy of Management Journal*, *41*(1), 108–119. https://doi.org/10.5465/256902

Vera, D., & Rodriguez-Lopez, A. (2004). Strategic virtues: humility as a source of competitive advantage. *Organizational Dynamics*, *33*(4), 393–408. https://doi.org/10.1016/j.orgdyn.2004.09.006

Vogel, B., Reichard, R. J., Batistič, S., & Černe, M. (2021). A bibliometric review of the leadership development field: How we got here, where we are, and where we are headed. *The Leadership Quarterly*, *32*(5), 101381. https://doi.org/10.1016/j.leaqua.2020.101381

Wang, L., Owens, B. P., Li, J. J., & Shi, L. (2018). Exploring the affective impact, boundary conditions, and antecedents of leader humility. *Journal of Applied Psychology*, *103*(9), 1019–1038. https://doi.org/10.1037/apl0000314

Wellman, N., Newton, D. W., Wang, D., Wei, W., Waldman, D. A., & LePine, J. A. (2019). Meeting the need or falling in line? The effect of laissez-faire formal leaders on informal leadership. *Personnel Psychology*, *72*(3), 337–359. https://doi.org/10.1111/peps.12308

Zhang, S., Higgins, E. T., & Chen, G. (2011). Managing others like you were managed: How prevention focus motivates copying interpersonal norms. *Journal of Personality and Social Psychology*, *100*(4), 647–663. https://doi.org/10.1037/a0021750

Zhao, B. (2011). Learning from errors: The role of context, emotion, and personality. *Journal of Organizational Behavior*, *32*(3), 435–463. https://doi.org/10.1002/job.696

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Hu, J., Zhang, S., Lount, Jr., R. B., & Tepper, B. J. (2024). When leaders heed the lessons of mistakes: Linking leaders' recall of learning from mistakes to expressed humility. *Personnel Psychology*, *77*, 683–712. https://doi.org/10.1111/peps.12570