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RESEARCH ARTICLE

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Examining the interpersonal process and consequence of leader–member exchange comparison: The role of procedural justice climate

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Summary

Individuals are always sensitive to their relative standing in interpersonal comparison processes of leader–member exchanges (LMXs) in teams. Little research, however, has investigated whether coworkers with a higher LMX influence the emotional and behavioral reactions of individuals with a lower LMX in different dyads. Drawing on social comparison theory and the symbolic model of procedural justice (PJ) climate, we conducted 2 independent studies—an experimental study focusing on the self-perceived upward LMX comparison (i.e., an individual perceives that a coworker's LMX is higher than the LMX that he or she has with the supervisor; N = 203; Study 1: American working adults) and a field survey study focusing on the other-perceived downward LMX comparison (i.e., a coworker perceives that his or her own LMX is higher than the LMX that the individual has with the supervisor; N = 177; Study 2: Chinese software engineers). Results from these studies consistently revealed that a coworker's higher LMX elicits an individual's hostile emotions when the PJ climate is low but that this relationship is buffered when the PJ climate is high. Results of both studies also showed that the coworker's higher LMX arouses the individual to direct harmful behavior toward that coworker (via the individual's feelings of hostility) when the PJ climate is low but not when it is high.

KEYWORDS

coworker dyads, interpersonal hostility and harming, leader–member exchange (LMX) comparison, procedural justice climate

1 | INTRODUCTION

A key premise of leader–member exchange (LMX) theory is that leaders tend to develop different relationships with individuals in a team (Dansereau, Graen, & Haga, 1975). Because the differentiation determines the amount of work-related resources, benefits, and support obtained from a supervisor, individuals are always sensitive to their relative LMX (RLMX) standing in a team (Vidyarthi, Liden, Anand, Erdogan, & Ghosh, 2010). During their daily interactions in the workplace, individuals often learn, reflect, observe, and compare their own LMX with that of their coworkers in order to understand their standing in the team (Hu & Liden, 2013). Previous research has tended to view an LMX comparison as an individual process of RLMX that occurs when an individual evaluates his or her own actual level of LMX relative to the average LMX of "all" other coworkers as a whole (e.g., Henderson, Wayne, Shore, Bormmer, & Tetrick, 2008), and it has also examined the impact of RLMX on psychological contract fulfilment (Henderson et al., 2008), in-role and extra-role behaviors (Hu & Liden, 2013), and task performance (Vidyarthi et al., 2010).

Although the findings of these studies are insightful, our understanding of the LMX comparison process remains incomplete owing to two fundamental issues. First, LMX comparison is often studied as an individual phenomenon, captured either by an objective measure of a relative difference between coworkers' LMXs (i.e., RLMX; Henderson et al., 2008; Tse, Ashkanasy, & Dasborough, 2012) or by a perceptual measure of individuals' own LMX compared with the LMXs of coworkers (i.e., LMX social comparison [LMXSC]; Vidyarthi et al., 2010). This study approach overlooks the fact that the LMX comparison process is dyadic and peer nested in nature. Second, the existing research has generally focused on understanding the positive consequences (i.e., both individual and team performance-related outcomes) when an individual interacts with lower LMX coworkers and perceives that his or her LMX is better than other coworkers' LMXs (Tse, Lam, Lawrence, & Huang, 2013; Vidyarthi et al., 2010). This line of

research has neglected the possibility that an individual may have to face a higher LMX coworker, and such an unfavorable comparison can create negative interpersonal implications (Tse et al., 2013). This is an important omission in the literature because, in reality, the individual is often required to work with another coworker who has a higher LMX, and such a situation may emanate from the facts that (a) he or she perceives a coworker's LMX to be higher than he or she has with the supervisor (i.e., an individual has a upward LMX comparison with the coworker—an individual's upward LMXSC) or (b) he or she is perceived to be an individual with a lower LMX compared with the coworker (i.e., a coworker has a downward LMX comparison with the individual—a coworker's downward LMXSC). Although these two types of comparison are independently evaluated by the individual and the coworker, both forms of LMX comparison inform an individual about another coworker's higher relative standing and also highlight his or her inferior status in a team, thereby causing the individual to react negatively toward the coworker. Such a reaction occurs because information comparing LMXs among coworkers infers hierarchical status differences, which can often be learned and observed in coworkers' daily interactions within a shared team environment (Sias, 1996; Tse et al., 2012, 2013). Therefore, with the use of a dyadic approach, the core contribution of the present research is to understand whether a coworker's higher LMX (by directly manipulating the individual's upward LMXSC in Study 1 and by indirectly inferring an unfavorable comparison outcome by assessing the coworker's downward LMXSC in Study 2) may induce the individual's negative emotion and behavior toward the coworker.[1]

Drawing upon social comparison theory (Festinger, 1954), we propose that a coworker's higher LMX, reflected by the individual's self-perceived upward LMXSC and the coworker's other-perceived downward LMXSC, will constitute an unfavorable comparison outcome for the individual because the former LMXSC captures the lower status perceived by the individual himself or herself, and the latter LMXSC assigns to the individual a lower status in a hierarchical LMX relationship. In this respect, social comparison theory (Festinger, 1954) suggests that in response to disadvantaged and unfavorable comparison outcomes, the individual may develop negative hostile emotions (Buunk, Collins, Taylor, Van Yperen, & Dakof, 1990; Heider, 1958) and may retaliate toward the coworker (e.g., a harmful act; Lam, Van der Vegt, Walter, & Huang, 2011), depending on the extent to which the individual contrasts or assimilates himself or herself with that coworker (i.e., by focusing either on relational differences or on commonalities; Mussweiler, Rüter, & Epstude, 2004).

More importantly, such contrastive or assimilative processes are greatly shaped by contextual factors (Greenberg, Ashton-James, & Ashkanasy, 2007; Lam et al., 2011). Along this line, literature on both LMX and justice climate has suggested that a particularly salient contextual factor in team settings that may determine employees' responses to an unfavorable comparison outcome is procedural justice (PJ) climate (i.e., a team-level cognition regarding how fairly the team as a whole is treated procedurally[2]; Erdogan & Bauer, 2010; Naumann & Bennett, 2000). Because supervisors are typical representatives of an organization and also are often involved in communicating the value and implementing the practice of the PJ climate to all team members, employees tend to refer to PJ climate to make sense of an authority figure's practice, such as a supervisor's exercise of LMX differentiation (Erdogan & Bauer, 2010; Hollensbe, Khazanchi, & Masterson, 2008). We therefore expect that the PJ climate operates as a sense-making mechanism, shaping the extent to which the coworker's higher LMX is legitimate, and also determining whether the individual will contrast or assimilate with the coworker.

Combining the identification-contrast model of social comparison theory (Buunk & Ybema, 1997; Mussweiler et al., 2004) and the symbolic model of justice climate (Lin & Leung, 2014), we propose that the relationship between a coworker's higher LMX and an individual's hostile responses toward that coworker hinges on the PJ climate. Specifically, unfair team procedures (i.e., in a low PJ climate) would provide the individual with the information that the coworker's higher LMX standing, greater resources, and influence obtained simply on the basis of a better relationship with the supervisor do not procedurally match, in a just way, his or her efforts spent on work. Given that the social and economic costs of undermining supervisors are too high (Mitchell & Ambrose, 2007), we argue that this coworker, who is a direct competitor to the individual in a triadic relationship, would be held responsible for creating the unfavorable LMX comparison outcome. Such external blaming will guide the individual to contrast himself or herself with the coworker and to develop a negative opinion and hostile reactions toward him or her. In contrast, when team procedures are fair (i.e., there is a high PJ climate), the individual tends to view that the coworker's higher LMX as being legitimate and justified, and thus the individual is more likely to assimilate and less likely to feel hostile toward the higher LMX coworker. That comparison outcome is proper when implemented on the basis of the principles of justice. Furthermore, a handful of research suggests that hostility (e.g., anger, disgust, and hostility) is a justice-related emotion for outcome unfavorability (Barclay, Skarlicki, & Pugh, 2005; Brockner, 2002) and can provoke interpersonal harmful acts (i.e., "behaviors that go against the legitimate interests of another individual in the organization"; cf. Venkataramani & Dalal, 2007, p. 952; Glomb, 2002). To

[1]In the context of a dyadic individual–coworker relationship, upward social comparison is made in relation to someone of a higher LMX standing and downward social comparison is made in relation to someone of a lower LMX standing in a team (Buunk et al., 1990; Festinger, 1954). We therefore use "self-perceived upward LMXSC" to refer to an individual employee's perception that a coworker's LMX is higher than the LMX that he or she has with the supervisor, and we use "other-perceived downward LMXSC" to refer to a coworker's perception that his or her own LMX is higher than that of the individual with the supervisor.

[2]In the present research, we focus only on the use of PJ climate as an important boundary condition, for four reasons. First, PJ has been proposed and specified as a primary predictor for understanding the psychological basis of whether people socially identify with a workgroup in the group engagement model (Tyler & Blader, 2000). Second, PJ has received more substantial research attention than distributive justice and interactional justice have, because of its stronger predictive ability for a wide range of employee attitudes and behaviors (cf. meta-analytical review; Cohen-Charash & Spector, 2001; Colquitt, 2001). Third, employee reactions to distributive justice can be influenced by procedural justice because the fairness of the actual resource distribution is largely determined by fair decision-making procedures and processes (Du, Choi, & Hashem, 2012). Finally, there is a high degree of conceptual overlap among interactional justice, distributive justice, and LMX because leaders rely on the quality of relationships with their subordinates when they distribute organizational resources and psychological support (Erdogan & Bauer, 2010).

extend our conceptual model, we further predict a conditional indirect relationship—when PJ climate is low, the experience of hostility resulting from a self-perceived upward LMXSC and a coworker-perceived downward LMXSC serves as a motivational basis for the lower LMX individual to inflict harm on the higher LMX coworker (see Figure 1). We examined the hypothesized relationships by conducting two independent studies across two different cultures, comprising a vignette-based experiment (Study 1: American working adults) and a field survey study (Study 2: Chinese software engineers).

The present research makes three key contributions to the emerging literature on LMX comparison and the LMX in social networks. First, by conceptualizing LMXSC as a dyadic construct, our research demonstrates the social functions of LMXSC that communicate a differentiated LMX status to the individual. Specifically, results across the two independent studies revealed that a coworker's higher LMX, either captured by a self-perceived or an other-perceived comparison, consistently informs the individual about an obvious LMX status gap that exists in a dyad, and also simultaneously highlights the individual's LMX inferiority. More importantly, this unfavorable comparison outcome fosters the individual's hostile responses as a motivational tendency to undermine the coworker's LMX success in order to close the status gap. As such, this research sheds new light on the far-reaching interpersonal consequences of LMXSC in coworker dyads (Tse et al., 2013).

Second, we significantly enhance our understanding of *when* a coworker's higher LMX will become more detrimental to the individual by considering PJ climate as a boundary condition. Previous research has examined the role of PJ climate for LMX differentiation (i.e.,within-group variation of LMX; Erdogan & Bauer, 2010; Omilion-Hodges & Baker, 2013). Our research departs from prior work by theorizing PJ climate as a team-level moderator for the dyadic consequences of LMXSC. In doing so, we advance the literature by demonstrating that PJ climate is an important contextual factor that activates the fundamental psychological mechanisms in response to comparison information and outcomes, guiding the individual to develop a contrastive or an assimilative view of the coworker's higher LMX and, in some cases, resulting in subsequent hostile reactions.

Finally, this present research is among the first to examine interpersonal hostility as a key emotional mechanism that explains *why* a coworker's higher LMX may spark overt harm among coworkers only when the PJ climate is low. In doing so, we highlight discrete emotions resulting from differential LMX relationships as a key interpersonal core that can spoil interpersonal interactions in coworker dyads (Barclay et al., 2005; Tse et al., 2013).

2 | THEORETICAL BACKGROUND AND HYPOTHESIS DEVELOPMENT

2.1 | The joint effect of coworkers' higher LMX and PJ climate

Social comparison theory (Festinger, 1954) suggests that people seek to understand their relative stature by comparing themselves with others in terms of attributes, abilities, and performance. Given the fact that individuals in the same team form different LMX qualities with the same supervisor, this variation in LMX qualities motivates the individuals to understand their relative standing in a team. Such individuals therefore like to compare their own LMX status with that of other coworkers (i.e., LMXSC; Vidyarthi et al., 2010) and pay attention to subtle social cues that convey the relevant comparison information in a team environment (Tse et al., 2013). Past research has already demonstrated that an individual can be influenced by his or her own perceptual comparison of LMX or by objective LMX comparison information available in the team environment (e.g., LMX dis[similarity], RLMX, and LMX differentiation; e.g., Henderson et al., 2008; Hu & Liden, 2013; Tse et al., 2013).

In a shared team environment, an individual is often informed about the success of each of his or her comparison coworkers in the form of LMX standing (Vidyarthi et al., 2010). That is because, through conscious and unconscious processes, each individual is aware of the social relationship structure and the quality of each pair of coworker–leader relationships in a team (Sias, 1996; Sias & Jablin, 1995). For example, a coworker's higher LMX status can be learned through an internal process: I can see and experience it (i.e., I perceive that the coworker has a higher LMX than I have, through an upward comparison—a self-perceived upward LMXSC). Alternatively, a coworker's LMX status can be learned through an external stimulus, such as in a social situation in which the individual is perceived to be a lower LMX employee: the coworker looks down on me (i.e., the coworker perceives that he or she has a higher LMX than I have through a downward comparison—an other-perceived downward LMXSC). In supporting this notion, past research has suggested that exposing individuals to a negative

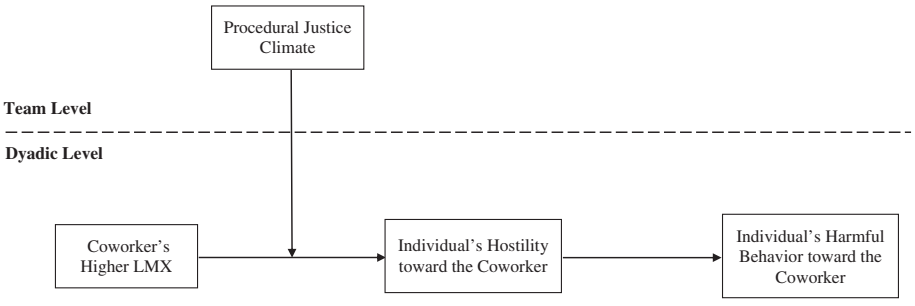

FIGURE 1 Hypothesized conditional indirect relationship between a coworker's higher LMX and an individual's harmful behavior, through the individual's hostility toward the coworker (a coworker's higher LMX was captured by self-perceived upward LMXSC in Study 1 and by other-perceived downward LMXSC in Study 2). LMX = leader–member exchange; LMXSC = LMX social comparison

situational stimulus will prime a negative self-view, and such cues and their associated priming effects are argued to be pervasive and to occur relatively unconsciously (Bargh & Williams, 2006). Therefore, we propose that information about a coworker's higher LMX, from the perspective of either the individual (self-perceived) or the coworker (other-perceived), constitutes an unfavorable comparison outcome for the individual because it demonstrates the coworker's LMX superiority and the individual's LMX inferiority. It also reflects that the coworker with a higher LMX status will possess more influence and respect, obtain more resources and benefits, and experience elevated self-esteem in a team (Anderson, Willer, Kilduff, & Brown, 2012). The coworker's higher LMX also automatically assigns and imposes an inferior LMX status to the individual, signaling to him or her that he or she has less influence and respect in the eyes of other members and receives less resources and support, with the result that he or she is also more likely to experience negative emotions (e.g., distress, resentment, or hostility) in a team (Emerson & Murphy, 2014; Scheepers & Ellemers, 2005).

The negative effect of an unfavorable comparison outcome on the individual, however, depends on whether the individual contrasts or assimilates himself or herself with the coworker (Lam et al., 2011; Mussweiler et al., 2004). Contrastive effects arise if the individual focuses on distinguishing relational features in the individual–coworker relationship, such as if the individual does not expect to obtain a favorable LMX standing that is comparable with that of the coworker and/or does not see the coworker's advantages as being deserved. On the contrary, assimilative effects arise if the individual focuses on relational commonalities—for instance, if he or she expects his or her LMX to be similar to the coworker's LMX in the future and/or sees the coworker's advantages as being deserved (Buunk & Ybema, 1997; Corcoran, Crusius, & Mussweiler, 2011).

When the individual contrasts with the LMX-better-off coworker by expecting that a similarly high LMX is unattainable and/or by viewing the coworker as undeserving of it, he or she can form a negative self-image and elicit defensive emotions (e.g., hostility) toward the coworker because the presence of the high-LMX coworker results in a status threat to that individual (Aquino & Douglas, 2003; Buunk & Gibbons, 2007). By contrast, the individual may be less likely to experience such hostile emotions when he or she assimilates with the LMX-better-off coworker because he or she views the coworker's higher LMX as being well deserved and as demonstrating a possible successful pathway to the individual, thereby affirming the individual's future positive LMX outcome.

These contrast-assimilation processes in social comparisons are largely shaped by a team's context. Drawing on the symbolic model of justice climate (Lin & Leung, 2014), we argue that PJ climate is a relevant contextual factor that activates the contrast–assimilation effect of a coworker's higher LMX on an individual's emotional reactions. Accordingly, both LMX and justice research studies have suggested that differential LMX relationships within a team should heighten the salience of justice concerns (Colquitt, Zapata-Phelan, & Roberson, 2005; Erdogan & Bauer, 2010), and justice theory has emphasized that individuals' negative responses associated with unfavorable outcomes in the workplace (e.g., a low level of status or benefit that harms their self-interest; Brockner & Wiesenfeld, 1996) can be alleviated when the decision-making process is procedurally fair (i.e., PJ; Folger, 1977). In particular, recent justice climate research has demonstrated that PJ climate, when functioning as a shared perception among members in a team, is a powerful contextual variable that shapes the value and significance of specific exchange relations (Yang, Mossholder, & Peng, 2007) and their associated emotional meaning (Lin, 2015). Previous studies, for example, noted that PJ climate can trigger identification with teams (Lin & Leung, 2014) and can shape the cooperation norms (Tyler & Blader, 2003), engendering the assimilative rather than the contrastive approach toward interpersonal social comparison processes in a team.

As was outlined before, hostility is the most relevant emotion for understanding the contrast–assimilation processes that occur in a comparison with a coworker's higher LMX. Employees often experience hostility when they perceive mistreatment or a demeaning offense from others (Lazarus, 1991). Furthermore, research has shown that hostility is provoked when something occurs that is contrary to what is expected, and it will be particularly salient when the outcome is unexpected and illegitimate (Averill, 1982). We propose that a coworker's higher LMX status may inform an individual about a potential offense from the coworker (resulting from the disclosure of LMX inferiority), thereby increasing the likelihood of the individual's hostility toward the coworker. Applying social comparison theory in an effort to understand interpersonal relations, research has suggested that a dyadic relationship requires "justice" in order to maintain it, and members in general expect the hierarchical relations between the first two members in an individual–coworker–leader triad to be equal (Greenberg et al., 2007; Heider, 1958, p, 235). Given that a coworker with a higher LMX already violates an individual's expectation of balanced hierarchical relationships, such an unexpected event further motivates the individual to seek a PJ climate that (il)legitimatizes such a differentiated relationship (Colquitt et al., 2005; Erdogan & Bauer, 2010). This (il)legitimization that is implicated by the PJ climate, driving the individual to (dis)assimilate with the coworker, (provokes) limits his or her hostile responses toward the coworker as a result. Therefore, we expect that the coworker's higher LMX will interact with the PJ climate to determine the individual's hostility toward the coworker.

On the basis of this rationale, hostility may appear to be most salient when the coworker's LMX is high and the PJ climate is weak. In such settings, the individual faces a higher LMX coworker, and the weak PJ climate informs the individual that the coworker's higher LMX standing is unfair and illegitimate. Specifically, the symbolic model of PJ climate suggests that the PJ climate signals the trustworthiness of the authority (Lin & Leung, 2014). Given that supervisors are often representatives of the authority and are the people who specify the procedures used in teams to make important decisions, they are able to emphasize the team PJ climate to a greater or lesser extent. Hence, a low PJ climate signals to the individual that his or her supervisor violates equity expectations and creates the LMX differentiation unfairly, on the basis of unjust decision-making procedures for outcome allocation. In such a situation, the individual will distrust the supervisor and thus will feel uncertain and unable to match his or her LMX standing with that of the coworker in the future (Brockner & Wiesenfeld, 1996).

Although the individual could direct his or her hostile responses toward the supervisor who is accountable for a justice violation, individuals typically will stifle this impulse and restrain themselves from being hostile and aggressive toward a supervisor. Such restraint occurs because supervisors often play a vital role in controlling and distributing resources and support and in making important decisions (e.g., performance-appraisal promotions, salary increment recommendations, and preferred job assignments) that influence the individual's work roles and career development (Hollensbe et al., 2008; Mitchell & Ambrose, 2007). Given the fact that the social and economic costs of undermining or discrediting supervisors are far too high, we anticipate that the an individual is particularly likely to target his or her hostility toward a coworker because that coworker is a direct competitor in the triadic relationship, posing a threat to the individual's influence and status in the team and also reducing his or her likelihood of receiving valuable resources and support from the supervisor. In substantiating this notion, research on displaced anger has shown that individuals often direct hostile reactions toward an easy and safe target rather than toward the original agent who creates an unfair situation (Barling, Dupré, & Kelloway, 2009; Marcus-Newhall, Pedersen, Carlson, & Miller, 2000; Mitchell & Ambrose, 2007). Under such circumstances, the coworker will be a viable victim of the hostility triggered by an LMX comparison process, given that the individual's LMX inferiority originates from a higher LMX coworker, and thus, the coworker is a provocateur who disrupts the relationship development between the individual and the supervisor.

Furthermore, an unfair PJ climate nurtures distrust and disassociation and activates independent self or differentiation mindsets among individuals (i.e., a contrastive approach to comparisons; Lam et al., 2011), thereby driving the individual to attribute the responsibility for creating his or her inferiority in a dyad to the coworker (Brockner & Wiesenfeld, 1996). This external blame highlights the impression that the coworker's higher LMX is illegitimate, thereby heightening the intensity of the individual's hostility.

By contrast, if the coworker's higher LMX is accompanied by a strong PJ climate that is implemented by the supervisor, the individual's feelings of hostility are less likely to occur. Here, the individual faces a superior coworker with a better LMX but at the same time sees it as being justified and reasonable. The trustworthiness of the supervisor implicated by a strong PJ climate reassures the individual about the favorability of his or her own future LMX outcome (Brockner & Wiesenfeld, 1996). The higher LMX coworker, in this regard, appears to be a positive role model who demonstrates possible ways to succeed, rather than being a status threat to the individual (Lockwood, Jordan, & Kunda, 2002; Lockwood & Kunda, 1997).

Furthermore, the PJ climate, when operated through members' identification with the team as a whole (Leung, Tong, & Lind, 2007), can activate an integrated mindset and cooperative norms within the overall team, thus softening the distinctiveness of personal status in LMX comparison processes and also diminishing the differences among individuals' emotional reactions toward specific coworkers (Lam, Huang, Walter, & Chan, 2016; Lawler & Yoon, 1998). Such an assimilative approach toward comparison may guide an individual to focus attention on the fairness of a team's decision outcome and to view a coworker's higher LMX as legitimate, thereby suppressing the individual's hostility toward the coworker.

We generally do not expect pronounced hostile reactions when the coworker's LMX is comparatively worse than that of the individual, regardless of the level of the PJ climate. A coworker's lower LMX status, meaning that the individual's LMX outperforms the coworker's LMX, is a favorable outcome for the individual because the individual's LMX status is superior. As a result, the individual is likely to perceive this outcome as being affirmative (Buunk & Gibbons, 2007) and to find that it boosts his or her feelings of self-worth, thus increasing a sense of influence and respect (Anderson et al., 2012; Collins, 1996) and reducing hostility toward the coworker. Along this line, justice literature has also suggested that the PJ climate is irrelevant when the outcome is particularly favorable to the individual; by contrast, outcome unfavorability (i.e., the coworker's higher LMX in our case) provokes hostile responses when the PJ climate is low (Van den Bos, 2001; Van den Bos, Wilke, & Lind, 1998).

Taken together, we propose that a coworker's higher LMX is more positively related to the individual's hostility toward the coworker when the PJ climate is low and that this relationship will be attenuated when the PJ climate is high. Therefore, we hypothesize the following:

> **Hypothesis 1.** PJ climate moderates the relationship between a coworker's higher LMX and an individual's hostility toward the coworker; this relationship is more positive when PJ climate is low rather than high.

2.2 | The moderated-mediation model of LMXSC and interpersonal harming

Whereas to this point we have expected that a coworker's higher LMX interacts with a low PJ climate to elicit an individual's negative emotional reactions in a dyadic individual–coworker relationship, research has shown that negative emotions, especially hostility, can have a profound impact on interpersonal behavior. For example, hostility has been associated with aggressive impulses, harmful behavior, and direct revenge toward a perpetrator who creates harm to the individual's self-interest (Anderson & Bushman, 2002; Averill, 1982). On the basis of (a) the above theoretical development, (b) a detailed exposition for Hypothesis 1, and (c) the extensive evidence supporting the relationship between hostility and harming behavior (e.g., Hershcovis et al., 2007; Lazarus, 1991; Mitchell & Ambrose, 2007), it is logical to posit that hostility may underlie the conditional indirect effect of a coworker's higher LMX on an individual's harming behavior directed toward that coworker.

As suggested by Greenberg et al. (2007), affect plays a key intermediating role between events and behaviors in the workplace. In particular, negative affective states are engendered, at least in part, by affective events or "a change in circumstances" (Weiss & Cropanzano, 1996, p. 31). Such events, for instance, may be caused by acts of fellow employees, or by the individual experiencing a lack of influence, power, or resources, or failures in goal achievement (Basch & Fisher, 2000). Negative affect generated by such events preoccupies employees' cognitive processing, evaluation, and behavior (Heller & Watson, 2005; Weiss & Cropanzano, 1996). Given that a

coworker's higher LMX, by definition, alters an individual's perception of his or her current circumstance and informs the individual of his or her lower standing, such social comparisons are expected to function as affective events insofar as they generate negative, hostile emotions, and those negative emotions in turn influence harming behavior. The negative emotional ramifications of a coworker's higher LMX and thus the behavioral consequences, as mentioned before, are particularly salient when the PJ climate is low. In supporting this argument, previous justice theories and research suggest that situations of unfairness tend to strengthen the negative affective experiences of an outcome unfavorability and increase the tendency to retaliate (Barclay et al., 2005; Brockner, 2002).

Following this logical reasoning, we propose a conditional indirect relationship and suggest that a coworker's higher LMX increases an individual's harming behavior toward the coworker through the individual's hostility toward the coworker when the PJ climate is low but not when it is high. Specifically, the positive indirect linkage between a coworker's higher LMX and an individual's harming behaviors toward the coworker, as transmitted by a feeling of hostility, should be stronger in teams with a low PJ climate. The reason for that linkage is that a low PJ climate may guide the individual to view the difference between his or her standing and a coworker's standing, as derived from the LMX comparison, as being utterly unfair and thus to contrast himself or herself with the coworker by directing more harmful emotions and actions toward the coworker as a means of rectifying an unjust situation. On the contrary, a positive indirect linkage will be weaker in teams with a high PJ climate because the LMX difference in the coworker dyad is justified by the fair climate, which activates a more assimilative approach for the status comparison and thus alleviates detrimental emotional and behavioral consequences. More formally, we hypothesize the following:

> **Hypothesis 2.** A coworker's higher LMX and an individual's harmful behavior toward that coworker are positively and indirectly related (through the individual's hostility toward the coworker) when PJ climate is low but not when it is high.

3 | PURPOSES OF STUDIES 1 AND 2

To fully examine the above-hypothesized relationships in the model (Figure 1), it is essential to examine the potential implication of a coworker's higher LMX by using both a self-perceived upward LMXSC and an other-perceived downward LMXSC. Such examinations are necessary because the roles of the individual and coworker are equally important in a dyadic individual–coworker relationship, and the two workers often regard each other as a comparison target against which to evaluate their LMX relative standing. Although the directionality of these two types of LMXSC operationalization differs, their commonality is to convey and confirm the superior status of the coworker and the inferior status of the individual, and that underscores the importance of involving the perspective of both parties in the LMXSC research. In doing so, we undertook two studies using different research methods (i.e., experimental design and survey design) and LMXSC operationalizations (i.e., manipulating self-perceived upward LMXSC and measuring other-perceived downward LMXSC). We also used different samples (American working adults and Chinese software engineers) to provide greater confidence in the robustness and generalizability of our findings across research settings in two distinct cultures (i.e., American individualistic values and Chinese collectivistic values).

4 | STUDY 1—EXPERIMENT

4.1 | Participants and procedure

We adopted the vignette experiment method (Aguinis & Bradley, 2014) to design this study. A total of 203 American working adults (M_{age} = 34, 46% female; $M_{working\ experience}$ = 14 years) completed a vignette-based experiment on Mechanical Turk, an online marketplace that enables researchers to efficiently obtain quality data from working American adults (Buhrmester, Kwang, & Gosling, 2011). The experiment adopted a 2 × 2 (self-perceived upward vs. downward LMXSC with a coworker) × (high vs. low PJ climate) between-subject factorial design. After giving consent, each participant was randomly assigned to one of the four conditions and then read the description of a realistic workplace scenario containing LMXSC manipulation and PJ climate manipulation. He or she then reported any experienced feelings of hostility toward and behavioral intention to harm the coworker, together with their own demographics.

4.2 | Manipulations and measures

4.2.1 | Workplace scenario

All participants were asked to imagine that they work in a market research team in a large organization in the consumer goods industry. Together with a few coworkers, they work for the supervisor of the team on coordinating research projects for the organization. The participants were told that, after working in the team for some time, they have formed a general impression of what their coworkers are like and also a general idea of the procedures used to decide various outcomes in their team. The scenario then describes the specific impressions they have of a coworker (i.e., self-perceived LMXSC manipulation) and some characteristics of the procedures used in the team (i.e., PJ climate manipulation).

4.2.2 | LMXSC manipulation

We adapted the items of the LMXSC scale developed by Vidyarthi et al. (2010) to manipulate participants' self-perceptions of their RLMX standing compared with the standing of a coworker in their team. Specifically, the participants read the impressions they had about a coworker in the team named "Pat" (a gender-neutral name). In the upward/(downward) LMXSC condition, the participants read that

> *Pat often claims to have a better/(worse) relationship with the supervisor than many others in the team. In fact, you feel that Pat's working relationship with the supervisor is more/(less) effective than the relationships*

other team members have with the supervisor. Relative to you and other team members, Pat seems to receive more/(less) support, benefits, and resources from the supervisor, and you feel that the supervisor is more/(less) loyal to Pat and enjoys Pat's company more/(less) than yours and that of other team members. Finally, when the supervisor cannot make it to an important meeting, Pat would usually be the first/(last) person to be asked by the supervisor to fill in the meeting.

4.2.3 | PJ climate manipulation

The seven items from Colquitt's (2001) PJ scale were used to directly manipulate participants' perceptions of the PJ climate of the whole team. The description of a high/(low) PJ climate was as follows.

The supervisor of this team promotes a group climate of using fair/(unfair) procedures to make decisions on various outcomes. In this team, procedures have been applied consistently/(inconsistently), free of biases/(full of biases), based on accurate/(inaccurate) information, and are up to/(not up to) ethical and moral standards. In addition, team members are able/(not able) to express their views and feelings during these procedures and have influence/(little influence) over the outcomes decided by these team procedures. Finally, after a decision has been made, team members always/(never) have an opportunity to appeal the decision. Overall, both team members and outsiders categorize this team as having a procedurally fair/(unfair) climate.

4.2.4 | Hostility toward the coworker

The participants reported, on a 7-point Likert scale (1 = *not at all*, 7 = *strongly*), the extent to which they experience each of the following six feelings toward Pat: "angry," "hostile," "irritable," "scornful," "disgusted," and "loathing." These items were adapted from the hostility subscale of the Positive and Negative Affect Schedule-Expanded Form (PANAS-X; Watson & Clark, 1994). The items showed high reliability (α = .95) and were thus averaged to create a hostility score with higher values representing a greater hostility experienced toward the target coworker (Pat).

4.2.5 | Intention to behaviorally harm the coworker

We used six items (α = .93) adapted from Cohen-Charash and Mueller (2007) and subsequently used by Lam et al. (2011) to capture participants' behavioral tendencies to harm the coworker (Pat). Sample items included "I will create coalitions against Pat" and "I will interfere with Pat's performance." The participants responded to the items by using a 7-point Likert scale (1 = *very unlikely*, 7 = *very likely*), and the responses were averaged to create a harming score in which higher values represent stronger intentions to behaviorally harm Pat.

4.3 | Results of Study 1

4.3.1 | LMXSC manipulation check

After reporting whether they had experienced hostility toward and/or intentions to behaviorally harm Pat, the participants responded to the question "In the workplace scenario that you have just read, how is Pat's relationship with the supervisor compared with your relationship with the supervisor?" Participants again used a 7-point Likert scale (1 = *much worse than mine*, 7 = *much better than mine*). The participants in the self-perceived upward LMXSC condition reported that Pat had a better relationship with the supervisor than did others (M = 6.2, SD = 0.99), in contrast to the responses of those in the self-perceived downward LMXSC condition (M = 1.93, SD = 1.01), $t(198) = 30.16$, $p < .001$, thereby supporting the effectiveness of our manipulation.

4.3.2 | PJ climate manipulation check

After the LMXSC manipulation check question, the participants were asked to evaluate, on a 7-point scale (1 = *not at all*, 7 = *very much so*), the team procedures described in the scenario using the following items: "fair," "biased" (reverse coded), "objective," and "just." The items were reliable (α = .94). The participants in the high PJ climate condition perceived greater justice (M = 4.97, SD = 1.49) than did those in the low PJ climate condition (M = 2.22, SD = 1.20), $t(199) = 14.49$, $p < .001$, suggesting the effectiveness of our manipulation.

4.3.3 | Hypothesis 1: Hostility toward Pat

Table 1 summarizes the results of a 2 × 2 analysis of variance (ANOVA) conducted in order to examine whether or not self-perceived LMXSC with Pat (0 = downward, 1 = upward) and the PJ climate (0 = low, 1 = high) interact to predict hostility toward Pat. Both main effects are significant; the participants in the upward LMXSC condition reported more hostility toward Pat (M = 2.74, SD = 1.45) than did those in the downward LMXSC condition (M = 2.08, SD = 1. 41), $t(202) = 3.33$, $p < .001$; the participants in the high PJ climate condition reported less hostility (M = 2.15, SD = 1.24) than did those in the low PJ climate condition (M = 2.65, SD = 1.62), $t(195) = 2.49$, $p < .05$. More importantly, the results revealed a significant interaction between LMXSC and PJ climate (B = 1.18, SE = 0.39, t = 3.03, $p < .01$). Specifically, when the PJ climate was low, the participants in the upward LMXSC condition expressed more hostility (M = 3.26, SD = 1.52) than did those in the downward LMXSC condition

TABLE 1 Study 1: Analysis of variance results for an individual's hostility toward the coworker (Pat)

Variable	F	η^2
Coworker's higher LMX: Self-perceived upward LMXSC	10.81***	.051
Procedural justice climate	6.61*	.032
Coworker's higher LMX: Self-perceived upward LMXSC × Procedural justice climate	9.17**	.044

Note. A coworker's higher LMX was captured by the self-reported upward LMXSC; N = 203 individuals. LMXSC = leader–member exchange social comparison.

*$p < .05$. **$p < .01$. ***$p < .001$.

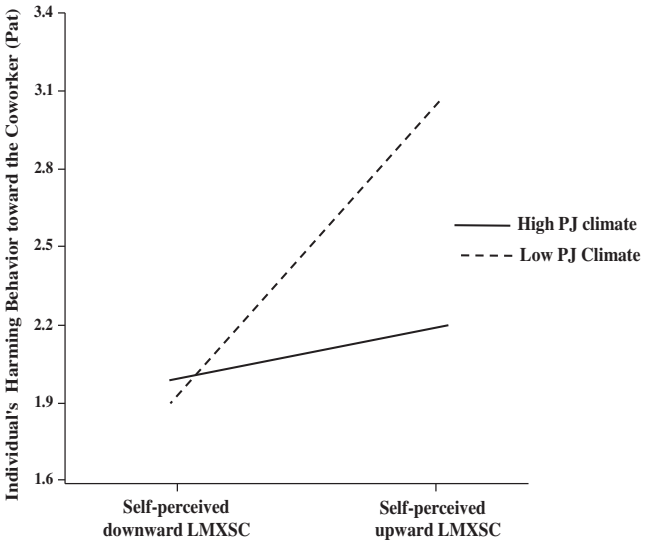

FIGURE 2 Interaction between a coworker's higher LMX (captured by self-perceived upward LMXSC) and the PJ climate on an individual's hostility toward the coworker (Pat; Study 1). LMX = leader–member exchange; LMXSC = LMX social comparison; PJ = procedural justice

(M = 2.03, SD = 1.49), $t(104)$ = 4.20, p < .001. However, when the PJ climate was high, the participants in the upward LMXSC condition expressed the same level of hostility (M = 2.17, SD = 1.15) as did those in the downward LMXSC condition (M = 2.12, SD = 1.33), $t(96)$ = 0.20, ns. This interaction pattern is depicted in Figure 2 to provide support for Hypothesis 1.

4.3.4 | Hypothesis 2: The LMX comparison's conditional indirect effect on harm through hostility

ANOVA results in Table 2 show that hostility toward Pat was significantly related to the intention to behaviorally harm Pat (B = 0.70, SE = 0.05, t = 15.19, p < .001), even after incorporating the terms for LMXSC, PJ climate, and their interaction. Together, results in Tables 1 and 2 suggest the possibility that hostility may channel the effect of LMXSC (conditional on the PJ climate) to influence intention to harm. To formally test Hypothesis 2, we used PROCESS macro for SPSS (Hayes, 2012) to examine the conditional indirect effects of LMXSC on intention to harm, through hostility toward Pat, at different levels of PJ climate. Following the recommended practice (Hayes & Preacher, 2010), we used 5000 resampling iterations (with replacement) to produce 95% bias-corrected intervals. The results fully support Hypothesis 2. Specifically, LMXSC had a significant positive and conditional indirect effect on intention to harm, through hostility toward Pat, when the PJ climate was low (B = 0.86, SE = 0.21, 95% CI [0.46, 1.28]), but not when the PJ climate was high (B = 0.07, SE = 0.17, 95% CI [−0.26, 0.41]).

TABLE 2 Study 1: Analysis of variance results for an individual's harmful behavior toward a coworker (Pat), through the individual's hostility toward the coworker (Pat)

Variable	F	η^2
Coworker's higher LMX: Self-perceived upward LMXSC	2.13	.011
Procedural justice climate	0.27	.001
Coworker's higher LMX: Self-perceived upward LMXSC × Procedural justice climate	0.001	.00
Individual's hostility toward the coworker (Pat)	230.83***	.54

Note. A coworker's higher LMX was captured by the self-perceived upward LMXSC; N = 203 individuals. LMXSC = leader–member exchange social comparison.

*p < .05. **p < .01. ***p < .001.

4.4 | Discussion of Study 1

Study 1 tested our hypotheses by using a vignette-based experimental design. The findings provide full support for our theoretical predictions, showing that when the PJ climate was low, a self-perceived upward (vs. downward) LMXSC with a coworker would lead participants to be more likely to experience hostility toward the coworker, but this effect did not occur when the PJ climate was high. In addition, hostility toward the coworker could transmit the effect of self-perceived LMXSC on interpersonal harming only when the PJ climate was low.

Although Study 1 provided initial evidence for Hypotheses 1 and 2, it had several limitations that needed to be addressed in Study 2. First, questions about external validity may arise because we utilized an experimental vignette design (Aguinis & Bradley, 2014) and we captured participants' self-reported data regarding their intention to engage in harmful behavior toward a coworker (rather than the actual behavior reported by the coworker). The sample of American working adults was recruited on Mechanical Turk; participants had various industrial backgrounds and might not have had the most direct experience of interacting with a coworker as described in the scenario. Although this sample provided a diverse industrial context in which to test the idea, and scholars have emphasized the utility of the experimental vignette methodology as an essential step in establishing causal relations (Aguinis & Bradley, 2014), further evidence from more naturalistic settings is needed to provide greater confidence in our findings' robustness and validity.

Also, as in previous studies (Vidyarthi et al., 2010), Study 1 operationalized the LMXSC as individuals' self-perception (the participant perceives that Pat's LMX is better than his or her LMX), and our findings suggested that this self-perceived LMXSC affects hostility and coworker harming. Research has shown, however, that a coworker's perception of LMX may interact with the individual's LMX (i.e., an actual dissimilarity of LMX perceptions between two leader–member dyads) to affect the individual in a way that is similar to the effect of self-perceived LMXSC (Tse et al., 2013). Extrapolating from these findings, it seems plausible that a coworker's perception of LMXSC (e.g., a coworker compares his or her LMX with that of the focal individual) provides critical information that may also shape the individual's feelings and reactions toward the coworker. Study 1 obviously cannot speak to this possibility.

Thus, we conducted Study 2 to address these concerns in three ways. First, we aimed at replicating Study 1's findings in a naturalistic field setting with a different cultural background—Chinese employees. Second, we examined the impact of other-perceived downward LMXSC (i.e., a coworker perceives that his or her LMX is better than that of the individual). Finally, we incorporated a set of control variables, including demographic factors, the focal individual's upward

LMXSC (i.e., reverse-scored downward LMXSC), RLMX, LMX, and LMX differentiation, in order to eliminate potentially confounding effects and enable us to ascertain our unique explanations of the findings.

5 | STUDY 2—FIELD SURVEY

5.1 | Participants and procedures

Data were collected from engineers working in R&D project teams in a high-technology company in China. The core business of the company is the development of new software and network designs for telecommunication service providers, local government, and other businesses. Team members' responsibilities included both working as a team to design products (approximately 90% of their work time) and working as an individual to accomplish administrative tasks (approximately 10% of their work time). We collected data using a round-robin peer-rating design in which each respondent (i.e., individual) provided self-descriptive information and rated each of the other coworkers (i.e., coworker) in their team (Warner, Kenny, & Stoto, 1979). Specifically, in each dyad, a coworker provided ratings on a downward LMXSC and the harming behavior of the focal individual, and the focal individual provided self-ratings on hostility toward the coworker. These round-robin data were then matched to the aggregated member ratings of PJ climate and a set of control variables. These multiple data sources can reduce concerns about common-method variance. Out of 200 questionnaires distributed, our final data set contained 177 individuals (640 dyadic relations) across 42 teams (89% effective response rate). The average team size of this study was five, with the team size ranging from three to seven, and the average response rate per team was 90%. The mean age of the respondents was 26, and the mean organizational tenure was 1.5 years; 55.6% of the respondents were female, and 98.6% had a high school education or above. The average length of the dyadic relationships was 11 months (i.e., the time two members forming a dyad had worked together).

5.2 | Measures

All of the measures used in this study were developed originally in English and subsequently back-translated into Chinese by bilingual experts, to obtain semantic equivalence and agreement (Brislin, Lonner, & Thorndike, 1973).

5.2.1 | Dyadic measure: LMXSC

We used the six items from Vidyarthi et al.'s (2010) scale to measure a coworker's perception of LMX compared with that of the individual. This comparison scale focused on how a coworker's RLMX standing is higher than that of an individual's (i.e., downward comparison). Each respondent was asked to assess the quality of his or her LMX with his or her immediate supervisor, compared with that of each of the respondent's teammates in each team, using a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). A sample item was "I have a better relationship with my supervisor than [X]." The term [X] was replaced by the name of a team member, and the respective items were subsequently repeated for all members in each team.

5.2.2 | Dyadic measure: Hostility toward coworker

We adapted three key hostile-emotion items (i.e., angry, hostile, and disgusted) from the hostility subscale of the PANAS-X (Watson & Clark, 1994) that we used to measure an individual's hostility toward a coworker using a 5-point Likert scale (1 = *never*, 5 = *always*). Each respondent was asked to indicate how often he or she had experienced the respective emotions toward each of his or her coworkers over the last 2 weeks. The items used to measure interpersonal hostility were selected and validated on the basis of Study 1's results.[3]

5.2.3 | Dyadic measure: Harmful behavior toward coworker

An individual's harmful behavior toward a coworker was assessed with the same measure as in Study 1. To circumvent common-source bias between an individual's hostility and harming behavior toward a coworker, we measured this variable by using other ratings. In each team, each respondent was asked to indicate to what extent six types of harmful behavior were representative of each of his or her teammates' behavior toward him or her, using a 5-point Likert scale (1 = *not representative at all*, 5 = *very representative*). A sample item was "[X] is nasty to me."

5.2.4 | Team-level measure: PJ climate

We used the seven-item scale from Colquitt's (2001) justice measure to capture employees' perceptions of the PJ climate, using a 5-point Likert scale (1 = *not at all*, 5 = *to a great extent*). A sample item was "Have those procedures been applied consistently in your team?" In line with previous research, we constructed the PJ climate to be an emergent, team-level construct, reflecting members' shared cognition and beliefs that PJ is applied consistently across members in a team (Erdogan & Bauer, 2010; Naumann & Bennett, 2000; Yang et al., 2007). Because members of a team are subject to the same set of structural influences (e.g., organizational policies and practices; Yang et al., 2007) through mutual interactions, common experiences, and mechanisms of socialization (Klein, Dansereau, & Hall, 1994; Morgeson & Hofmann, 1999), the social-information-processing effect will heighten the agreement about the PJ of the members' collective experience (Chan, 1998; Kozlowski & Klein, 2000). We calculated a single PJ climate score for each team by aggregating individual members' ratings to the team level. There was significant between-group variance in members' ratings of the PJ climate, $F(41, 176) = 6.31$, $p < .001$; additionally, intraclass correlation coefficients (ICCs) and within-group agreement surpassed common standards

[3]The sample of 203 American working adults (M_{age} = 34, 46% female; $M_{working\ experience}$ = 14 years) participated in Study 1 on the Mechanical Turk, an online marketplace that enabled us to validate the factor structure and reliability of three key hostility items (i.e., angry, disgusted, and hostile), using the maximum likelihood extraction and varimax rotation methods in an exploratory factor analysis. The items were selected for Study 2 on the basis of the results of Study 1 showing that the factor loading of the items ranged from .84 to .91, and because they also strongly loaded on a single factor. Details of the factor analysis reported in Study 1 can be made available.

(ICC_1 = .34, ICC_2 = .89, median $r_{wg(j)}$ = .86), indicating that aggregation to the team level was justified (Hofmann, 2008; James, 1982).

5.2.5 | Individual-level measures: Control variables

Because demographic variables may influence hostile emotions and behaviors (Barling et al., 2009), we controlled for the respondents' gender and age (in years). We also controlled for dyadic tenure (in months) and team size, because these variables have previously been shown to influence group processes (Richter, West, van Dick, & Dawson, 2006). In addition, we controlled for negative affectivity; this trait has been associated with the tendency to engage in harmful behavior (e.g., Hershcovis et al., 2007). Negative affectivity was measured using four items ("stressed," "scared," "upset," and "nervous") from the PANAS scale (Watson, Clark, & Tellegen, 1988). To account for alternative explanations for the development of interpersonal hostility and harming, we also controlled for LMX (Dansereau et al., 1975), the individual's upward LMXSC (reverse scored from a downward LMXSC scale), RLMX (Henderson et al., 2008), and LMX differentiation (within-group variance in LMX; Erdogan & Bauer, 2010), because prior research has linked these variables with coworkers' relationship qualities (Erdogan & Bauer, 2010; Sherony & Green, 2002; Tse et al., 2013).

5.3 | Analytical strategy

The round-robin data in this study have a complex nested structure because members are nested within relationships (i.e., dyads) and also teams. To deal with the statistical dependence resulting from this nested structure, we employed Kenny and colleagues' social relations modeling (SRM) technique (Kenny, 1994; Kenny, Kashy, & Cook, 2006; Kenny & La Voie, 1984) to test our hypothesized relationships in the model. It is a specific method for analyzing relational data in which the substantial portion of the variance in the dependent variables is located at the dyadic level (i.e., it depends on the characteristics of the dyadic relations between the individual and the coworker; Kenny & La Voie, 1984). The unique feature of this analytical approach is to isolate variance in a social network and test hypotheses at multiple levels of analysis: actor (here, the individual member), target (here, the coworker), dyad (the relationship between the individual member and the target), and group. Actor variance is the proportion arising from the tendency of an individual member to rate all other coworkers in a particular way. Target variance refers to the proportion arising from the tendency of a coworker to receive similar ratings from other members. Dyadic variance arises from the particular relationship between the actor and the target. Group variance arises from group membership, which is influenced by group norms (see Kenny, 1994; Kenny & La Voie, 1984). Such an application of SRM has been used in prior research examining dyadic relationships within work teams (e.g., Lam et al., 2011; Van der Vegt, Bunderson, & Oosterhof, 2006), and it produces estimates of both random and fixed effects.

In the present research, random estimates indicate how much of the variance in an individual's hostility and harmful behavior toward the coworker is explained by characteristics of the individual member, the coworker, the individual–coworker dyad, and the team (Kenny et al., 2006). Furthermore, the fixed estimates indicate the strength of the relationships between the independent variables (i.e., a coworker's downward LMXSC) and the mediating and dependent variables (i.e., an individual's hostility and harmful behavior). These estimates of SRM are comparable with the regression coefficients in an ordinary least squares regression analysis (Kenny et al., 2006).

We used the MLwiN computer package (Goldstein et al., 1998) to conduct an SRM analysis (cf. Kenny, 1994; Snijders & Kenny, 1999). We first calculated a "null model," which we used to partition the variance of an individual's hostility and harmful behavior into individual, coworker, dyadic, and team variances. Next, we added seven control variables, two main effects, and one 2-way interaction term to examine our hypotheses. We tested for a decrease in log likelihood between each of the models by means of a chi-square difference test, thereby evaluating the significance of improvements in our model fit. To test Hypothesis 2, we utilized the procedure outlined by Krull and MacKinnon (2001) in order to test the conditional indirect relationship between a coworker's downward LMXSC and an individual's harmful behavior. First, we derived the simple slopes of the relation between the independent variable (a coworker's downward LMXSC) and the mediator (an individual's hostility) at high (+1 *SD*) and low values (−1 *SD*) of the moderator (the PJ climate). We also drew on the relationship between the individual's hostility and his or her harmful behavior. On the basis of Selig and Preacher's (2008) Monte Carlo method, we then employed these estimates in order to derive percentile confidence intervals for the population values of the conditional indirect relationship between the independent variable (a coworker's downward LMXSC) and the dependent variable (an individual's harmful behavior directed toward the coworker), through the effect of the mediator (an individual's hostility toward the coworker), at high and low levels of PJ climate. The use of such confidence intervals is considered to be superior to traditional methods (e.g., the Sobel [1982] test) when one is examining (conditional) indirect relationships, because it ameliorates the power problems introduced by nonnormal sampling distributions of an indirect relation (MacKinnon, Lockwood, & Williams, 2004).

5.4 | Results of Study 2

Before testing our hypotheses, we first conducted a set of confirmatory factor analyses (CFAs) in order to assess the discriminant validity of the three dyadic variables (LMXSC, hostility, and harmful behavior). The results showed that the hypothesized three-factor measurement model (χ^2 = 481.23, *df* = 87, CFI = 0.96, GFI = 0.91, RMSEA = 0.08) yielded a better fit than did the one-factor measurement model (χ^2 = 4,746.19, *df* = 90, CFI = 0.57, GFI = 0.44, RMSEA = 0.29) with a change in chi-square ($\Delta\chi^2$ = 4,264.96, Δdf = 3, $p < .001$). Finally, we confirmed the overall hypothesized measurement model by loading each item onto its respective factor (i.e., PJ, LMXSC, hostility, and harmful behavior). Again, the CFA results indicated that the hypothesized four-factor measurement model (χ^2 = 889.00, *df* = 203, CFI = 0.94, GFI = 0.88, RMSEA = 0.07) yielded a good fit to the data and thus was substantially better than an alternative one-factor measurement model (χ^2 = 6,369.49, *df* = 209, $p < .001$, CFI = 0.48, GFI = 0.44, RMSEA = 0.22) with a change in chi-square ($\Delta\chi^2$ = 5,480.49, Δdf = 6, $p < .001$). These CFA results provided support for the distinctiveness of the four variables in our subsequent analyses.

TABLE 3 Study 2: Means, standard deviations, intercorrelations, and reliabilities of study variables

Variables	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender	1.56	0.50	—												
2. Age	25.61	4.03	−.24***	—											
3. Negative affectivity	2.78	0.57	−.07	−.13**	(.65)										
4. Dyadic tenure	8.58	9.23	−.10*	.35***	−.07	—									
5. Team size	5.28	1.16	.03	−.25***	.05	−.16***	—								
6. LMX	3.52	0.65	−.05	.02	−.13**	−.04	−.01	(.87)							
7. RLMX	0.00	0.58	.05	.09*	−.15*	.02	.00	.89***	—						
8. Individual's self-perceived upward LMXSC	3.18	0.96	.09*	−.04	−.02	−.04	−.07	−.20*	−.21*	(.94)					
9. LMX differentiation	0.64	0.04	−.03	−.23***	.16***	−.15***	−.09*	.04	.00	−.02	—				
10. Coworker's higher LMX: Other-perceived downward LMXSC	2.82	0.97	−.06	−.09*	.02	.04	.07	−.14***	−.17*	.17***	.02	(.94)			
11. PJ climate	3.40	0.28	.11**	−.30***	.03	−.23***	.27***	.13**	.00	−.03	−.22***	.03	(.82)		
12. Individual's hostility toward the coworker	1.26	0.63	−.17***	−.05	.35***	.09*	.06	.04	.02	.20***	.04	−.01	−.00	(.86)	
13. Individual's harmful behavior toward the coworker	1.33	0.65	−.05	.05	−.00	.02	.07	−.01	.02	−.08	.05	.20***	−.05	.17***	(.97)

Note. A coworker's higher LMX was captured by the other-perceived downward LMXSC; *N* = 177 individuals in 640 dyads within 42 workgroups. LMXSC = leader–member exchange social comparison; PJ = procedural justice; RLMX = relative LMX.

*p < .05. **p < .01. ***p < .001.

Table 3 presents the descriptive statistics, correlations, and reliabilities of the study variables in Study 2. Given the fact that age and team size were not correlated with the mediator and outcome (i.e., with an individual's hostility and harmful behavior), we decided not to incorporate these demographic variables as controls when testing our hypotheses, in order to avoid biased parameter estimates (cf. Becker, 2005). Moreover, LMX, RLMX, and LMX differentiation were also uncorrelated with hostility and harmful behavior. However, given the theoretical importance of these constructs (Erdogan & Bauer, 2010; Sherony & Green, 2002; Tse et al., 2013), we nevertheless retained them as controls. Notably, the pattern of results remained virtually unchanged whether we included or excluded all control variables.

5.4.1 | Variance partitioning

Table 4 presents the partitioning of the variance into both hostility and harmful behavior, at the individual, coworker, dyadic, and team levels of analysis. As is shown in the table, 29.46% of the total variance in hostility and 54.64% of the variance in harmful behavior resided at the dyadic level. These findings indicate that a large portion of the variances in hostility and in harmful behavior depended on the vcharacteristics of the dyadic relationship between any individual and coworker, as well as on team-level factors. These results support the appropriateness of performing our subsequent analyses at the dyadic level (cf. Snijders & Kenny, 1999).

5.4.2 | Hypotheses tests

Hypothesis 1 predicted that the PJ climate would interact with a coworker's higher LMX (operationalized using the other-perceived downward LMXSC) to influence an individual's hostility toward the coworker. As is shown in Table 5, the two-way interaction term of a coworker's downward LMXSC and the PJ climate was significantly associated with the individual's hostility toward the coworker (see Model 3; B = −0.04, SE = 0.02, p < .05) after taking the control variables and two main effects into account. Figure 3 illustrates this interaction pattern (Aiken & West, 1991). As shown, the relationship

TABLE 4 Study 2: Variance partitioning for the individual's hostility and harmful behavior toward the coworker

	Hostility		Harmful behavior	
Source of variance	*B*	*SE*	*B*	*SE*
Group variance	0.00 (0.00%)	0.00	0.03 (8.27%)	0.02
The individual member's variance	0.24 (63.05%)	0.03	0.00 (0.00%)	0.00
Coworker's variance	0.03 (7.49%)	0.01	0.15 (37.09%)	0.03
Dyadic variance	0.11 (29.46%)	0.01	0.22 (54.64%)	0.01
Deviance	881.36		1076.63	

Note. *N* = 177 individuals in 640 dyads within 42 workgroups. Coworker = (target) in the social relations modeling analysis; individual = (actor).

TABLE 5 Study 2: Social relation model analyses for an individual's hostility toward the coworker

	Individual's hostility toward the coworker					
	Model 1		Model 2		Model 3	
Steps and variables	*B*	*SE*	*B*	*SE*	*B*	*SE*
Step 1: Control variables						
Gender	−0.13	0.08	−0.12	0.08	−0.13	0.08
Negative affectivity	0.36***	0.07	0.37***	0.07	0.36***	0.07
Dyadic tenure	0.01*	0.00	0.01*	0.00	0.01*	0.00
LMX	0.06	0.14	0.08	0.15	0.07	0.15
RLMX	0.01	0.15	−0.02	0.16	−0.01	0.16
Individual's self-perceived upward LMXSC	0.08*	0.03	0.08*	0.03	0.08*	0.03
LMX differentiation	−0.16	0.78	−0.10	0.78	−0.07	0.78
$\Delta\chi^2(7)$	46.52***					
ΔR^2	.05					
Step 2: Main effects						
Coworker's higher LMX: Other-perceived downward LMXSC			0.01	0.02	0.01	0.02
PJ climate			−0.02	0.04	−0.03	0.04
$\Delta\chi^2(2)$			0.60			
ΔR^2			.00			
Step 3: Two-way interaction						
Coworker's higher LMX: Other-perceived downward LMXSC × PJ climate					−0.04*	0.02
$\Delta\chi^2(1)$					4.97*	
ΔR^2					.02	

Note. *N* = 177 individuals in 640 dyads within 42 workgroups. LMXSC = leader–member exchange social comparison; PJ = procedural justice; RLMX = relative LMX.

*p < .05. **p < .01. ***p < .001.

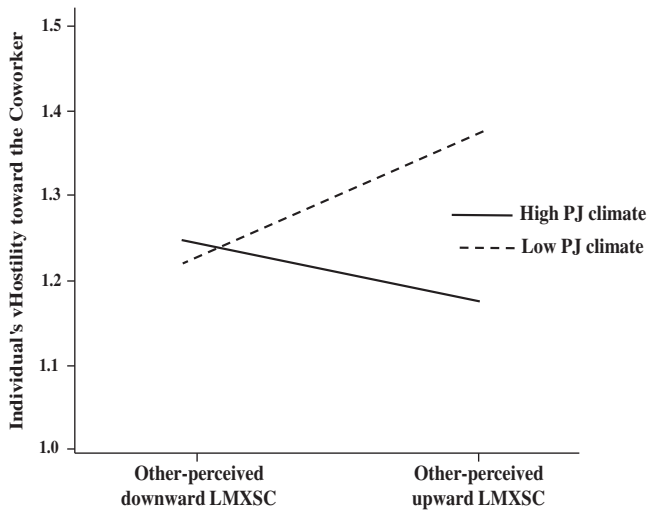

FIGURE 3 Interaction between a coworker's higher LMX (captured by the other-perceived downward LMXSC) and the PJ climate on an individual's hostility toward the coworker (Study 2). LMX = leader–member exchange; LMXSC = LMX social comparison; PJ = procedural justice

between other-perceived downward LMXSC and an individual's hostility toward the coworker was more positively related when the PJ climate was low (simple slopes test: B = 0.06, SE = 0.03, p < .05), whereas this positive relationship was weakened when the PJ climate was high (simple slopes test: B = −0.03, SE = 0.03, ns). Thus, Hypothesis 1 received support.

Although we did not hypothesize the relationship between interpersonal hostility and harming behavior, the results in Table 6 (Step 3) show that an individual's hostility was positively associated with harmful behavior toward the coworker (B = 0.17, SE = 0.04, p < .001), even after accounting for the effects of the control variables, two main effects, and the two-way interaction term. These results together illustrate the links between the independent variables (downward LMXSC, PJ climate, and their interaction) with hostility and also between hostility and an individual's harmful behavior. These satisfy the conditions for examining the conditional indirect analyses for Hypothesis 2, which states that a coworker's higher LMX will be positively and indirectly related to an individual's harmful behavior, as transmitted by the individual's hostility toward the coworker when the PJ climate is low but not when it is high. On the basis of the analytical strategy outlined above, we inspected the conditional indirect relationship between other-perceived downward LMXSC and an individual's harmful behavior at low and high levels of PJ climate—namely, one standard deviation (−1 *SD*) below and (+1 *SD*) above the mean of the PJ climate. The results are reported in the lower section of Table 6. The indirect relationship between other-perceived downward LMXSC and an individual's harmful behavior (via the individual's hostility toward the coworker) was positively significant (B = 0.01) when the PJ climate was low. These results were indicated by both a significant percentile confidence interval that excluded zero (95% CI

TABLE 6 Study 2: Social relation model analyses for an individual's harmful behavior toward a coworker

Steps and variables	Individual's harmful behavior toward the coworker	
	B	*SE*
Step 1: Control variables and main effects		
Gender	−0.04	0.05
Negative affectivity	0.02	0.04
Dyadic tenure	0.00	0.00
LMX	−0.18	0.15
RLMX	0.21	0.16
Individual's self-perceived upward LMXSC	0.07*	0.02
LMX differentiation	0.21	0.83
Coworker's higher LMX: Other-perceived downward LMXSC	0.13***	0.03
PJ climate	−0.03	0.04
$\Delta\chi^2(9)$	34.95***	
ΔR^2	.03	
Step 2: Two-way interaction		
Coworker's higher LMX: Other-perceived downward LMXSC × PJ climate	−0.03	0.03
$\Delta\chi^2(1)$	1.80	
ΔR^2	.00	
Step 3: Mediator		
Individual's hostility toward the coworker	0.17***	0.04
$\Delta\chi^2(1)$	17.90***	
ΔR^2	.02	
Conditional indirect relationship between a coworker's higher LMX (other-perceived downward LMXSC) and the individual's harmful behavior toward the coworker, through the individual's hostility toward the coworker[a]		
Moderator	Individual's harmful behavior toward the coworker	
Procedural justice climate	Indirect effect	95% confidence interval[a]
Low (−1 *SD*)	0.01	[0.001, 0.023]
High (+1 *SD*)	−0.01	[−0.015, 0.003]

Note. *N* = 177 individuals in 640 dyads within 42 teams. +1 *SD* = one standard deviation above the mean; −1 *SD* = one standard deviation below the mean; LMXSC = leader–member exchange social comparison; PJ = procedural justice; RLMX = relative LMX.

[a]Based on 20,000 Monte Carlo samples (Selig & Preacher, 2008).

*p < .05. **p < .01. ***p < .001.

[0.001, 0.023]). By contrast, this indirect relationship was insignificant (95% CI [−0.015, 0.003]) when the PJ climate was higher. Hypothesis 2 also received support.

5.5 | Discussion of Study 2 results

In general, the results shown in Tables 5 and 6 provided support for two hypotheses in this study. These results constructively replicated Study 1's findings. Specifically, Study 2 moved from a hypothetical vignette design toward an organizational setting, captured the LMX comparison process as a dyadic phenomenon, examined the cross-level influence of the PJ climate on dyadic LMX comparison outcomes, and generalized our key findings in a different cultural context (i.e., United States and China). The Chinese culture is characterized by considerably higher collectivism and power distance than is the American culture (Hofstede, 2001). It might therefore be expected that individuals from these countries would exhibit distinct perceptions and attitudes toward social comparison processes. These differences notwithstanding, Studies 1 and 2, regardless of the use of self-perceived upward LMXSC or other-perceived downward LMXSC, yielded very consistent results and thus provided greater confidence in the robustness and generalizability of the respective findings.

6 | GENERAL DISCUSSION

Building on the symbolic model of justice climate and social comparison theory, we explored how LMXSCs and PJ climate shape the emotional and behavioral consequences of members' interactions with each other in different coworker dyads, using a vignette-based experiment and a field survey study. Results of both studies generated by data from American and Chinese samples provided consistent support for our conceptual model (Figure 1). We highlight two key findings for further discussion: (a) When the PJ climate was low, an individual felt more hostility toward a coworker if the coworker's LMX standing was subjectively perceived by the individual as being higher (Study 1) or when it was evaluated by the coworker himself or herself as being higher (Study 2), and (b) the individual's hostility was

found to be a key emotional mechanism underlying the role of the coworker's higher LMX on the individual's harmful behavior directed toward the coworker in different dyads.

6.1 | Theoretical implications

We believe that our research has important theoretical contributions. Previous research on LMXSC has typically focused on individual processes (Vidyarthi et al., 2010), team processes (Henderson et al., 2008; Hu & Liden, 2013), or intrapersonal processes (Tse et al., 2013), neglecting the fact that each leader–member dyad is nested within a team and may have an impact on other social-exchange relations (Tse et al., 2013; Venkataramani, Green, & Schleicher, 2010). Our research extends this line of research by highlighting the value of studying LMXSC in social relationships instead of investigating it in isolation. In line with the dyadic nature of LMX theory and measurement, this research considers LMXSC as a dyadic process and reveals that the comparison with a higher LMX person is important to an understanding of how hostility is elicited and modulated in others. Specifically, in both studies, we captured such comparison processes on the basis of the individual's self-perception (Study 1) and the coworker's perception (Study 2), and we consistently found that the detrimental impacts of a comparison with a higher LMX coworker on an individual's emotional and behavioral reactions were more salient in teams with a low PJ climate. More precisely, our results in Study 2 suggest that the LMX comparison process can be an invisible hand under which an individual may not consciously involve himself or herself, but an unfavorable comparison outcome made by the coworker (i.e., other's perspective) can effectively impose an inferior LMX status on the individual, thereby making him or her feel (in) justice-induced negative emotions and causing him or her to act out against the coworker. These findings underline the importance of taking the interpersonal nature of LMXSC into account. The results expose a new avenue for research on the social functions of interpersonal comparison in coworker dyads within teams.

Integrating social comparison theory and the symbolic model of justice climate, this research extends and enriches LMXSC literature by highlighting the PJ climate as a key driving force that determines contrastive or assimilative processing of social information conveyed by self-perceived upward or other-perceived downward LMX comparison processes (Erdogan & Bauer, 2010). Results of Studies 1 and 2 show that a low PJ climate, which typically is characterized by distrust among team members, signals information to the individual about uncertainties regarding his or her own future LMX standing and the illegitimacy of the coworker's superior LMX, thereby activating the contrastive process that guides the individual to feel more hostility toward the coworker. On the contrary, a high PJ climate may give the individual consistent cues about trustworthiness and group identification, thereby alleviating the individual's hostility toward the coworker. This pattern fits the notions that comparison information is emotion laden and that observers' reactions are guided by particular situational affordances or external stimuli (Buunk et al., 1990; Van de Ven, Zeelenberg, & Pieters, 2012). The present research contributes in this regard, showing that the PJ climate is an important social–contextual element that may cause inferences regarding the (il)legitimacy of a coworker's higher LMX and in so doing may guide the individual to view this as a threat or an opportunity in a leader–member–coworker triadic relationship.

Finally, this research demonstrates the conditional indirect relationship between a coworker's higher LMX and an individual's harming of the coworker and uncovers the way in which the individual's hostility toward the coworker is an important self-defending emotional mechanism. Consistent with victimization research, the coworker's higher LMX (in the forms of self-perceived upward LMXSC or other-perceived downward LMXSC) is a provocation to the individual's hostility, and the individual's harming of the coworker is the retaliation against such provocation (Kim & Glomb, 2014; Mitchell & Ambrose, 2007). Although prior studies have proposed that a resentful feeling toward all team members or organizations is common when LMXs are frequently differentiated (Erdogan & Bauer, 2010) or when a comparison outcome is unfavorable (Brockner, 2002; Brockner & Wiesenfeld, 1996), there is little theoretical guidance to explain why and when the provocation of a specific coworker with a higher LMX would lead to that coworker being mistreated. In modeling hostility toward the coworker as the strength of the individual's desire to engage in harmful behavior, as well as the boundary conditions (i.e., the PJ climate) that affect the extent to which hostility is experienced, our research extends the current understanding of how LMXSC operates within the context of workplace aggression and also suggests potential factors that may intensify or mitigate the experienced hostile impulses and the translation of such hostility into consequent harmful acts in teams.

6.2 | Strengths, limitations, and future research directions

A key strength of this research is the way in which it provides converging results of our hypotheses across two independent studies (Studies 1 and 2) that use different research designs (a vignette-based experiment and a field survey), samples (American working adults and engineers in China), study contexts (a hypothetical team of market research and a software design team), and analytical techniques (ANOVA and moderated-mediation, and SRM and multilevel analysis). As a result, we were able counterbalance the potential limitations of each study. The present research's key strength can be illustrated by three aspects. First, we were able to extend the generalizability of Study 1's findings to a naturalistic organizational context by replicating them in Study 2 to include data collected using two sources—self-ratings of hostility and other ratings of harming behavior—and to measure our key variable of a coworker's higher LMX captured by the coworker's perceived downward comparison. This was effective in curtailing potential common-source biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Also, essentially, upward LMXSC perceived by the self in Study 1 and downward LMXSC perceived by the coworker in Study 2 exert similar impacts on the individual's hostility, which in turn lead to harming behavior toward the coworker. These consistent results increase the credibility of and confidence in our findings. Second, by the way in which our findings show a consistent pattern of results in both individualistic (Study 1) and collectivistic (Study 2) cultures, we confirmed that the LMX comparison

phenomenon studied in this research might not be culturally specific. This finding also strengthens the generalizability of the overall findings across different cultural contexts in LMX research (e.g., Rockstuhl, Dulebohn, Ang, & Shore, 2012). Finally, previous research has suggested that LMX is dyadic in nature and its associated processes should be tested using different data-analysis techniques, but LMX studies have seldom employed more than one research design and data-analysis technique in examining LMX dynamics (e.g., Gooty & Yammarino, 2011; Tse & Ashkanasy, 2015). In this regard, we tested our model with ANOVA in order to analyze experiment-based data (Study 1), and with SRM and multilevel analyses in order to analyze dyadic and nested data for complex modeling (Study 2).

Despite the three aspects of this study's methodological strength, it has several limitations that should be addressed in future research. First, in Study 2, we only used three key items of hostility (i.e., hostility, disgust, and anger) to measure the individual's hostility toward the target coworker, because it involved a labor-intensive peer-rating data collection process in all dyads. Although it is a common practice for dyadic and social-network research to use shortened or single-item scales to measure key variables (cf. Lam et al., 2011; Tse et al., 2013; Venkataramani et al., 2010) and our CFAs in two studies provided support for its construct reliability and validity (see footnote 3), future researchers may find it fruitful to employ multiple items for measuring hostility, in an effort to replicate our Study 2's findings. Second, we cannot draw a causal conclusion for the relationship between the individual's hostility and harmful behavior due to a cross-sectional design in both studies (Podsakoff et al., 2003). Future studies could employ a cross-lagged panel to replicate this relationship or the whole model examined in this research.

The above limitations, coupled with the overall findings of our research, suggest important avenues for future inquiry. First, although the notion of status loss is somewhat implicated in the process of upward LMXSC, the present research has not examined the role of perceived status threat in such a comparison process. Thus, it would be a logical step to examine this key mechanism explaining the relationship between LMXSC and coworker interactions, which would contribute to a more nuanced understanding of this linkage. Furthermore, the theoretical arguments employed here may enable scholars to expand the range of mediating mechanisms of LMXSC. Besides perceived status threat, for example, coworkers' utility (as a demonstration of possible ways to succeed; Lockwood et al., 2002) could be another pathway to explain the potential positive role (rather than the negative role as hypothesized here) of upward LMXSC processes. Such utility may hinge on the coworkers' expertise, knowledge, skills, and resources obtained from their supervisors (cf. Van der Vegt et al., 2006). Investigating perceived status threat and coworkers' utility as mediating mechanisms can provide a more comprehensive depiction of the dual-pathway model of LMXSC processes.

Second, future research can extend our findings by specifying the role of discrete emotions in the relationship between LMXSC and harmful behavior. Specifically, when a coworker has a higher LMX, the coworker may be likely to show both positive self-focused (e.g.,pride) and other-focused emotions (e.g., compassion) toward the lower LMX individual. Such emotional displays may be interpreted by the individual as hurtful or helpful, thereby strengthening or attenuating the positive linkage between the coworker's higher LMX and the individual's hostility in the dyads. Interestingly, these interpretations may be subject to the individual's attribution and information-processing styles (e.g., hostile attribution bias and need for cognition; Tedeschi & Felson, 1994; Van Kleef, 2009). People with biased attribution may view the coworker's positive emotions as being inauthentic (as in the case of compassion) and an attempt to demean and insult them further (as in the case of pride). By examining alternative, discrete emotions and associated attributions, future work may further advance our understanding of the role of the individual's and coworker's emotions in LMXSC for interpersonal harming.

Third, a social approach to LMXSC may serve as a basis for research on interpersonal emotion regulation. Given the fact that hostility is elicited in a social context that is fueled by the unfavorable comparison with a higher LMX coworker, a primary way of altering such hostile responses should be to engage in interpersonal emotion regulation (Parker & Axtell, 2001; Zaki & Williams, 2013). For example, the inferior individual can modify his or her hostile feelings by engaging in reappraisal (Gross, 1998), and the higher LMX coworker can adapt to the individual by inhibiting any behavioral or emotional displays upon achieving LMX success (Lange & Crusius, 2015). The balanced emotional regulation from both parties would hamper the hostile effects of LMXSC.

Fourth, future research could also extend the present research by identifying other theoretically relevant variables that may moderate the hypothesized relationships. Apart from the PJ climate, other individual factors such as self-monitoring tendency (Ajzen, Timko, & White, 1982), attribution styles (Martinko & Zellars, 1998), and goal orientation (Vande Walle, 1997), along with situational conditions such as team cooperative goals (Lam et al., 2011), affective climate (Tse et al., 2012), and team-level individualism or collectivism (Ilies, Wagner, & Morgeson, 2007), may predict how an individual responds to a higher LMX coworker differently. The anticipated findings relating to these potential moderating variables could offer new insights into the role that a coworker's higher LMX plays in an individual's attitudes and behaviors in dyads.

Finally, the use of an experience sample methodology, together with a round-robin research design, may be a fruitful avenue for advancing our research further (Fisher & To, 2012; Tse & Ashkanasy, 2015). In doing so, future research may benefit from a more dynamic approach by uncovering how differing levels of a coworker's LMX and the associated social comparisons might trigger oscillations in the individual's emotions toward the coworker over time. The dynamic momentary changes of interpersonal emotions can further reflect the salience of the effect of both self-perceived and other-perceived levels of LMXSC (e.g., whether a specific threshold of upward or downward comparison is required to trigger aggressive reactions), and that can enrich the intricacies of interpersonal relationship development within a team.

6.3 | Practical implications

The nature of teamwork has become increasingly complex and dynamic, which requires greater levels of collaboration and sharing among coworkers and their supervisors. As such, the shared social context provides ample opportunities for social comparison in relation

to LMX. The saliency of such comparison highlights the status differences among coworkers, making coworker interactions in teams sometime emotional and destructive. As demonstrated in our research, the negative emotions including hostility and anger could provoke coworkers' retaliation, and, thus, such emotions should be minimized in any team situations. To begin with, it is better for supervisors to promote similar levels of LMX in team settings. However, LMX comparisons may be unavoidable in most team situations, and, therefore, organizations and supervisors could curtail the negative implications associated with the comparisons. Given that PJ climate was found to be a key contextual factor in determining the implications of LMX comparison, it will be effective for organizations to promote fair decision-making processes and procedures for resource and outcome allocations in teams (Erdogan & Bauer, 2010; Omilion-Hodges & Baker, 2013). Specifically, supervisors should realize that subordinates' negative emotional and behavioral reactions to LMX comparisons can be attenuated by helping the subordinates understand that their organization equally value and appreciate all employees, via the establishment of a strong PJ climate to communicate to them a feeling of respect, status recognition, and favorable future outcomes (Tyler & Blader, 2003). In such a situation, subordinates may look upon other coworkers who have a higher LMX standing as being role models and may assimilate to these coworkers in order to enhance their own LMX standing (Hu & Liden, 2013). Once the subordinates have developed a shared perception of the PJ climate, organizations may reduce detrimental impacts, simultaneously promoting the potential positive effect of LMX comparison on interpersonal interactions in teams (Tse et al., 2013).

Alternatively, organizations can develop specific programs for training managers to exhibit specific leadership behaviors (e.g., to articulate a shared vision and emphasize a collective identity). Such leadership conduct can provide team members with a common purpose and enhance members' identification with their team (e.g., Shamir, Zakay, Breinin, & Popper, 1998). These leadership behaviors can be effective in fostering assimilation mechanisms that are similar to those of a strong PJ climate, thus preventing both upward and downward comparisons of LMX from diverting to interpersonal dysfunctional behavior and, thereby, maintaining a team's effective functioning. In addition to fostering leadership effectiveness, organizations can also engage in human resource practices to reduce the occurrence of LMX differentiations. For example, a collective reward practice can promote cooperation among group members (Johnson & Johnson, 1989). Similarly, organizations can increase members' identification by encouraging positive team–member exchanges (Seers, 1989) and team-building exercises (Liebowitz & De Meuse, 1982). When teams cultivate a positive, cooperative context, subordinates will be less reliant on the quality of their LMX to obtain resources and support, and that in turn will reduce the negative impact of LMX differentiation in coworker dyads.

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REFERENCES

Aguinis, H., & Bradley, K. J. (2014). Best-practice recommendations for designing and implementing experimental vignette methodology studies. *Organizational Research Methods*, *17*, 351–371.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage Publications.

Ajzen, I., Timko, C., & White, J. B. (1982). Self-monitoring and the attitude–behavior relation. *Journal of Personality and Social Psychology*, *42*, 426–435.

Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, *53*, 27–51.

Anderson, C., Willer, R., Kilduff, G. J., & Brown, C. E. (2012). The origins of deference: When do people prefer lower status? *Journal of Personality and Social Psychology*, *102*, 1077–1088.

Aquino, K., & Douglas, S. (2003). Identity threat and antisocial behavior in organizations: The moderating effects of individual differences, aggressive modeling, and hierarchical status. *Organizational Behavior and Human Decision Processes*, *90*, 195–208.

Averill, J. (1982). *Anger and aggression: An essay on emotion*. New York, NY: Springer-Verlag.

Barclay, L. J., Skarlicki, D. P., & Pugh, S. D. (2005). Exploring the role of emotions in injustice perceptions and retaliation. *Journal of Applied Psychology*, *90*, 629–643.

Bargh, J. A., & Williams, E. (2006). The automaticity of social life. *Current Directions in Psychological Science*, *15*, 1–4.

Barling, J., Dupré, K. E., & Kelloway, E. K. (2009). Predicting workplace aggression and violence. *Annual Review of Psychology*, *60*, 671–692.

Basch, J., & Fisher, C. D. (2000). Affective events—Emotion matrix: A classification of work events and associated emotions. In N. M. Ashkanasy, C. E. J. Hartel, & W. J. Zerbe (Eds.), *Emotions in the workplace: Research, theory and practice* (pp. 36–48). Westport, CT: Quorum Books.

Becker, T. E. (2005). Potential problems in the statistical control of variables in organizational research: A qualitative analysis with recommendations. *Organizational Research Methods*, *8*, 274–289.

Brislin, R., Lonner, W. J., & Thorndike, R. (1973). *Cross-cultural research methods*. New York, NY: Wiley.

Brockner, J. (2002). Making sense of procedural fairness: How high procedural fairness can reduce or heighten the influence of outcome favorability. *Academy of Management Review*, *27*, 58–76.

Brockner, J., & Wiesenfeld, B. M. (1996). An integrative framework for explaining reactions to decisions: The interactive effects of outcomes and procedures. *Psychological Bulletin*, *120*, 189–208.

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk, a new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, *6*, 3–5.

Buunk, A. P., & Gibbons, F. X. (2007). Social comparison: The end of a theory and the emergence of a field. *Organizational Behavior and Human Decision Processes*, *102*, 3–21.

Buunk, A. P., & Ybema, J. F. (1997). Social comparisons and occupational stress: The identification–contrast model. In B. Buunk, & F. X. Gibbons (Eds.), *Health, coping, and well-being: Perspectives from social comparison theory* (pp. 359–388). Mahwah, NJ: Erlbaum.

Buunk, B. P., Collins, R. L., Taylor, S. E., Van Yperen, N. W., & Dakof, G. A. (1990). The affective consequences of social comparison: Either direction has its ups and downs. *Journal of Personality and Social Psychology*, *59*, 1238–1249.

Chan, D. (1998). Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. *Journal of Applied Psychology*, *83*, 234–246.

Cohen-Charash, Y., & Mueller, J. S. (2007). Does perceived unfairness exacerbate or mitigate interpersonal counterproductive work behaviors related to envy? *Journal of Applied Psychology*, *92*, 666–680.

Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes*, *86*, 278–321.

Collins, R. L. (1996). For better or worse: The impact of upward social comparison on self-evaluations. *Psychological Bulletin*, *119*, 51–69.

Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, *86*, 386–400.

Colquitt, J. A., Zapata-Phelan, C. P., & Roberson, Q. M. (2005). Justice in teams: A review of fairness effects in collective contexts. In J. J. Martocchio (Ed.), *Research in personnel and human resources management* (Vol. 24) (pp. 53–94). Oxford, England: Elsevier Science.

Corcoran, K., Crusius, J., & Mussweiler, T. (2011). Social comparison: Motives, standards, and mechanisms. In D. Chadee (Ed.), *Theories in social psychology* (pp. 119–139). Oxford, England: Wiley-Blackwell.

Dansereau, F., Graen, G. B., & Haga, W. J. (1975). A vertical dyad linkage approach to leadership within formal organizations. *Organizational Behavior and Human Performance*, *13*, 46–78.

Du, J., Choi, J. N., & Hashem, F. (2012). Interaction between one's own and others' procedural justice perceptions and citizenship behaviors in organizational teams: The moderating role of group identification. *Group Dynamics: Theory, Research, and Practice*, *16*, 289–302.

Emerson, K. T. U., & Murphy, M. C. (2014). Identity threat at work: How social identity threat and situational cues contribute to racial and ethnic disparities in the workplace. *Cultural Diversity and Ethnic Minority Psychology*, *20*, 508–520.

Erdogan, B., & Bauer, T. N. (2010). Differentiated leader–member exchanges: The buffering role of justice climate. *Journal of Applied Psychology*, *95*, 1104–1120.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*, 117–140.

Fisher, C. D., & To, M. L. (2012). Using experience sampling methodology in organizational behavior. *Journal of Organizational Behavior*, *33*, 865–877.

Folger, R. (1977). Distributive and procedural justice: Combined impact of voice and improvement on experienced inequity. *Journal of Personality and Social Psychology*, *35*, 108–119.

Glomb, T. M. (2002). Workplace anger and aggression: Informing conceptual models with data from specific encounters. *Journal of Occupational Health Psychology*, *7*, 20–36.

Goldstein, H., Rasbash, J., Plewis, I., Draper, D., Browne, W., Yang, M., … Healy, M. (1998). *A user's guide to MLwiN*. London, England: Institute of Education.

Gooty, J., & Yammarino, F. J. (2011). Dyads in organizational research: Conceptual issues and multi-level analyses. *Organizational Research Methods*, *14*, 456–483.

Greenberg, J., Ashton-James, C. E., & Ashkanasy, N. M. (2007). Social comparison processes in organizations. *Organizational Behavior and Human Decision Processes*, *102*, 22–41.

Gross, J. J. (1998). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology*, *74*, 224–237.

Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling [white paper]. Retrieved from http://www.afhayes.com/ public/process2012.Pdf.

Hayes, A. F., & Preacher, K. J. (2010). Estimating and testing indirect effects in simple mediation models when the constituent paths are nonlinear. *Multivariate Behavioral Research*, *45*, 627–660.

Heider, F. (1958). *The psychology of interpersonal relations*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Heller, D., & Watson, D. (2005). The dynamic spillover of satisfaction between work and marriage: The role of time, mood and personality. *Journal of Applied Psychology*, *90*, 1273–1279.

Henderson, D. J., Wayne, S. J., Shore, L. A., Bormmer, W. H., & Tetrick, L. E. (2008). Leader–member exchange, differentiation, and psychological contract fulfillment: A multilevel examination. *Journal of Applied Psychology*, *93*, 1208–1219.

Hershcovis, M. S., Turner, N., Barling, J., Arnold, K. A., Dupre, K. E., & Inness, M. (2007). Predicting workplace aggression: A meta-analysis. *Journal of Applied Psychology*, *92*, 228–238.

Hofmann, D. A. (2008). Issues in multilevel research: Theory development, measurement, and analysis. In S. G. Rogelberg (Ed.), *Handbook of research methods in industrial and organizational psychology* (pp. 246–260). Oxford, England: Blackwell Publishing.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Thousand Oaks, CA: Sage.

Hollensbe, E. C., Khazanchi, S., & Masterson, S. S. (2008). How do I assess if my supervisor and organization are fair? Identifying the rules underlying entity-based justice perceptions. *Academy of Management Journal*, *51*, 1099–1116.

Hu, J., & Liden, R. C. (2013). Relative leader–member exchange within team contexts: How and when social comparison impacts individual effectiveness. *Personnel Psychology*, *66*, 127–172.

Ilies, R., Wagner, D. T., & Morgeson, F. P. (2007). Explaining affective linkages in teams: Individual differences in susceptibility to contagion and individualism–collectivism. *Journal of Applied Psychology*, *92*, 1140–1148.

James, L. R. (1982). Aggregation bias in estimates of perceptual agreement. *Journal of Applied Psychology*, *67*, 219–229.

Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and competition: Theory and research*. Edina, MN: Interaction.

Kenny, D. A. (1994). *Interpersonal perception: A social relations analysis*. New York, NY: Guilford Press.

Kenny, D. A., & La Voie, L. (1984). The social relations model. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 142–182). Orlando, FL: Academic Press.

Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. New York: NY, Guilford Press.

Kim, E., & Glomb, T. M. (2014). Victimization of high performers: The roles of envy and work group identification. *Journal of Applied Psychology*, *99*, 619–634.

Klein, K. J., Dansereau, F., & Hall, R. J. (1994). Levels issues in theory development, data-collection, and analysis. *Academy of Management Review*, *19*, 195–229.

Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K. J. Klein, & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 3–90). San Francisco, CA: Jossey-Bass.

Krull, J. L., & MacKinnon, D. P. (2001). Multilevel modeling of individual and group level mediated effects. *Multivariate Behavioral Research*, *36*, 249–277.

Lam, C. K., Van der Vegt, G. S., Walter, F., & Huang, X. (2011). Harming high performers: A social comparison perspective on interpersonal harming in work teams. *Journal of Applied Psychology*, *96*, 588–601.

Lam, C. K., Huang, X., Walter, F., & Chan, S. (2016). Interpersonal relationships and emotions in team–member dyads: The moderating role of cooperative team goals. *Management and Organization Review*, *12*, 687–716.

Lange, J., & Crusius, J. (2015). The tango of two deadly sins: The social–functional relation of envy and pride. *Journal of Personality and Social Psychology*, *109*, 453–472.

Lawler, E. J., & Yoon, J. (1998). Network structure and emotion in exchange relations. *American Sociological Review*, *63*, 871–894.

Lazarus, R. S. (1991). Progress on a cognitive–motivational–relational theory of emotion. *American Psychologist*, *46*, 819–834.

Leung, K., Tong, K. K., & Lind, E. A. (2007). Realpolitik versus fair process: Moderating effect of group identification on acceptance of political decisions. *Journal of Personality and Social Psychology*, *92*, 476–489.

Liebowitz, S. J., & De Meuse, K. P. (1982). The application of team building. *Human Relations*, *35*, 1–18.

Lin, X. (2015). How does procedural justice climate influence individual outcomes? An affective perspective. *Asia Pacific Journal of Management*, *32*, 771–800.

Lin, X., & Leung, K. (2014). What signals does procedural justice climate convey? The roles of group status, and organizational benevolence and integrity. *Journal of Organizational Behavior*, *35*, 464–488.

Lockwood, P., & Kunda, Z. (1997). Superstars and me: Predicting the impact of role models on the self. *Journal of Personality and Social Psychology*, *73*, 91–103.

Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, *83*, 854–864.

MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research*, *39*, 99–128.

Marcus-Newhall, A., Pedersen, W. C., Carlson, M., & Miller, N. (2000). Displaced aggression is alive and well: A meta-analytic review. *Journal of Personality and Social Psychology*, *78*, 670–689.

Martinko, M. J., & Zellars, K. L. (1998). Toward a theory of workplace violence: A cognitive appraisal perspective. In R. W. Griffin, A. O'Leary-Kelly, & J. M. Collins (Eds.), *Dysfunctional behavior in organizations: Violent and deviant behavior* (pp. 1–42). Stamford, CT: JAI Press.

Mitchell, M. S., & Ambrose, M. L. (2007). Abusive supervision and workplace deviance and the moderating effects of negative reciprocity beliefs. *Journal of Applied Psychology*, *92*, 1159–1168.

Morgeson, F. P., & Hofmann, D. A. (1999). The structure and function of collective constructs: Implications for multilevel research and theory development. *Academy of Management Review*, *24*, 249–265.

Mussweiler, T., Rüter, K., & Epstude, K. (2004). The ups and downs of social comparison: Mechanisms of assimilation and contrast. *Journal of Personality and Social Psychology*, *87*, 832–844.

Naumann, S. E., & Bennett, N. (2000). A case for procedural justice climate: Development and test of a multilevel model. *Academy of Management Journal*, *43*, 881–889.

Omilion-Hodges, L. M., & Baker, C. R. (2013). Contextualizing LMX within the workgroup: The effects of LMX and justice on relationship quality and resource sharing among peers. *Leadership Quarterly*, *24*, 935–951.

Parker, S. K., & Axtell, C. M. (2001). Seeing another viewpoint: Antecedents and outcomes of employee perspective taking. *Academy of Management Journal*, *44*, 1085–1100.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*, 879–903.

Richter, A. W., West, M. A., van Dick, R., & Dawson, J. F. (2006). Boundary spanners' identification, intergroup contact, and effective intergroup relations. *Academy of Management Journal*, *49*, 1252–1269.

Rockstuhl, T., Dulebohn, J. H., Ang, S., & Shore, L. M. (2012). Leader–member exchange (LMX) and culture: A meta-analysis of correlates of LMX across 23 countries. *Journal of Applied Psychology*, *97*, 1097–1130.

Scheepers, D., & Ellemers, N. (2005). When the pressure is up: The assessment of social identity threat in low and high status groups. *Journal of Experimental Social Psychology*, *41*, 192–200.

Seers, A. (1989). Team–member exchange quality: A new construct for role-making research. *Organizational Behavior and Human Decision Processes*, *43*, 118–135.

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]. Retrieved from http://www.quantpsy.org

Shamir, B., Zakay, E., Breinin, E., & Popper, M. (1998). Correlates of charismatic leader behavior in military units: Subordinates' attitudes, unit characteristics, and superiors' appraisals of leader performance. *Academy of Management Journal*, *41*, 387–409.

Sherony, K. M., & Green, S. G. (2002). Co-worker exchange: Relationships between co-workers, leader–member exchange, and work attitudes. *Journal of Applied Psychology*, *87*, 542–548.

Sias, P. M. (1996). Constructing perceptions of differential treatment: An analysis of coworkers discourse. *Communication Monographs*, *63*, 171–187.

Sias, P. M., & Jablin, F. M. (1995). Differential superior–subordinate relations, perceptions of fairness, and coworker communication. *Human Communication Research*, *22*, 5–38.

Snijders, T. A. B., & Kenny, D. A. (1999). The social relations model for family data: A multilevel approach. *Personal Relationships*, *64*, 471–486.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological methodology* (pp. 290–312). Washington, DC: American Sociological Association.

Tedeschi, J. T., & Felson, R. B. (1994). *Violence, aggression, and coercive actions*. Washington, DC: American Psychological Association.

Tse, H. H. M., & Ashkanasy, N. M. (2015). The dyadic level of conceptualization and analysis: A missing link in multilevel OB research? *Journal of Organizational Behavior*, *36*, 1176–1180.

Tse, H. H. M., Ashkanasy, N. M., & Dasborough, M. (2012). Relative leader–member exchange, negativity and social identification: A moderated-mediation examination. *Leadership Quarterly*, *23*, 354–366.

Tse, H. H. M., Lam, C. K., Lawrence, S. A., & Huang, X. (2013). When my supervisor dislikes you more than me: Dissimilarity of leader–member exchange, interpersonal emotion, and perceived help. *Journal of Applied Psychology*, *98*, 974–988.

Tyler, T. R., & Blader, S. L. (2000). *Cooperation in groups: Procedural justice, social identity and behavioral engagement*. Philadelphia, PA: Psychology Press.

Tyler, T. R., & Blader, S. L. (2003). The group engagement model: Procedural justice, social identity, and cooperative behavior. *Personality and Social Psychology Review*, *7*, 349–361.

Van de Ven, N., Zeelenberg, M., & Pieters, R. (2012). Appraisal patterns of envy and related emotions. *Motivation and Emotion*, *36*, 195–204.

Van den Bos, K. (2001). Uncertainty management: The influence of uncertainty salience on reactions to perceived unfairness. *Journal of Personality and Social Psychology*, *48*, 72–81.

Van den Bos, K., Wilke, H. A. M., & Lind, E. A. (1998). When do we need procedural fairness? The role of trust in authority. *Journal of Personality and Social Psychology*, *75*, 1449–1458.

Van der Vegt, G. S., Bunderson, J. S., & Oosterhof, A. (2006). Expertness diversity and interpersonal helping in teams: Why those who need the most help end up getting the least. *Academy of Management Journal*, *49*, 877–893.

Van Kleef, G. A. (2009). How emotions regulate social life: The emotions as social information (EASI) model. *Current Directions in Psychological Science*, *18*, 184–188.

Vande Walle, D. (1997). Development and validation of a work domain goal orientation instrument. *Educational and Psychological Measurement*, *8*, 995–1015.

Venkataramani, V., & Dalal, R. S. (2007). Who helps and harms whom? Relational antecedents of interpersonal helping and harming in organizations. *Journal of Applied Psychology*, *92*, 952–966.

Venkataramani, V., Green, S. D., & Schleicher, D. J. (2010). Well-connected leaders: The impact of leaders' social network ties on LMX and members' work attitudes. *Journal of Applied Psychology*, *95*, 1071–1084.

Vidyarthi, P. R., Liden, R. C., Anand, S., Erdogan, B., & Ghosh, S. (2010). Where do I stand? Examining the effects of leader–member exchange

social comparison on employee work behaviors. *Journal of Applied Psychology*, *98*, 849–861.

Warner, R. M., Kenny, D. A., & Stoto, M. (1979). A new round robin analysis of variance for social interaction data. *Journal of Personality and Social Psychology*, *37*, 1742–1757.

Watson, D., & Clark, L. A. (1994). *The PANAS-X: Manual for the Positive and Negative Affect Schedule: Expanded form*. Iowa City, IA: University of Iowa Press.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scale. *Journal of Personality and Social Psychology*, *54*, 1063–1070.

Weiss, H. M., & Cropanzano, R. (1996). An affective events approach to job satisfaction. In B. M. Staw, & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 18) (pp. 1–74). Greenwich, CT: JAI Press.

Yang, J., Mossholder, K. W., & Peng, T. K. (2007). Procedural justice climate and group power distance: An examination of cross-level interaction effects. *Journal of Applied Psychology*, *92*, 681–692.

Zaki, J., & Williams, W. C. (2013). Interpersonal emotion regulation. *Emotion*, *13*, 803–810.

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