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Leader Interpersonal Emotion Regulation and Innovation in Teams

Abstract

Interpersonal emotion regulation is an important psychological function in social behavior. However, this construct has still been scantly explored in work psychology and organizational settings, meaning that the effects of interpersonal emotion regulation on core aspects of work performance are as yet unknown. Thus, our article seeks to provide insight into how, in the context of teamwork in organizations, leaders can enhance team effectiveness by using interpersonal emotion regulation to capitalize on the important role that affect plays in team innovation. Using a multisource field study, we tested and supported a mediation model in which leaders' attempts to improve their team members' emotions were positively related to team innovation via team positive affective tone. Conversely, leader affect-worsening regulation was negatively related to team innovation via team negative affective tone. As such, we contribute to the work and organizational psychology literature by applying the notion of interpersonal emotion regulation in the teamwork setting, identifying specific behaviors of leaders that influence the development of novel ideas through shared affective experiences.

Keywords: interpersonal emotion regulation, innovation, teams, teamwork, leaders

Practitioners Points

- Leader interpersonal emotion regulation increases or decreases innovation by means of team affect.
- Leader affect-improving interpersonal emotion regulation is positively related to team innovation, whereas leader affect-worsening interpersonal emotion regulation has the opposite effect.
- Interventions for leader development should include training on interpersonal emotion regulation to benefit teamwork.

Leader Interpersonal Emotion Regulation and Innovation in Teams

Team innovation, the behavioral process in which team members pay attention, discuss and experiment with novel ideas (Kanter, 1988), is considered to be one of the most important indicators of team effectiveness (Hulsheger, Anderson, & Salgado, 2009; West & Anderson, 1996). Research suggests that, because people typically attend to those in positions of power (Sy, Côté, & Saavedra, 2005), team leaders may play an important role in influencing processes and outcomes relevant to innovation in teams (Mumford, Scott, Gaddis, & Strange, 2002). However, to date, researchers have focused more on global leadership styles and traits rather than the specific behaviors that leaders adopt in seeking to account for variation in team innovation (Mumford & Licuanan, 2004).

In the present article, we focus on leaders' use of interpersonal emotion regulation as a key factor expected to shape team innovation. Interpersonal emotion regulation concerns the use of a diverse array of regulatory behaviors to initiate, maintain or change emotions and moods in others (Little, Kluemper, Nelson, & Gooty, 2012; Niven, Totterdell, & Holman, 2009). Researchers consider this process highly relevant to social relationships and contexts, because how one person influences another's feelings could have implications for the latter's feelings, thoughts, and behaviors. For example, in basic and social psychology research, studies have shown that interpersonal emotion regulation enacted by a focal person provokes changes in interaction partners' affective experience, sense of well-being, and relationship quality (e.g., Niven, Totterdell, & Holman, 2007; Niven, Holman, & Totterdell, 2012). Similarly, the process has been studied within sporting contexts, demonstrating that interpersonal emotion regulation not only affects affective and relational outcomes, but also performance (e.g., Friesen, Lane, Devonport et al., 2013; Tamminen & Crocker, 2013). In work and organizational psychology

literature, recently, the possible function and consequences of interpersonal emotion regulation have also being theorized (Troth, Lawrence, Jordan, & Ashkanasy, 2018); however, empirical tests of the consequences of interpersonal emotion regulation in this literature, particularly for performance-related outcomes, are scarce.

We develop a model in which leaders' behaviors oriented to improve or worsen affective states among team members shape team affective tone and thereby team innovation. The theoretical approach underlying our proposals relies on the novel application of the interpersonal emotion regulation framework developed by Niven and colleagues (2009) and emotions-as-social-information theory (EASI, Van Kleef, 2009) to the Input-Process-State-Output model of team effectiveness (Collins, Lawrence, Troth, & Jordan, 2013). The interpersonal emotion regulation framework describes the set of regulatory behaviors that a leader could perform in order to improve or worse feelings in team members, while the model of team effectiveness provides a structure to understand how interpersonal emotion regulation may play a role in the teamwork context. In turn, emotions-as-social-information theory explains why leader regulatory behavior could exert an influence on team member affect and behavior. To test our proposals, we conducted a field study with a sample of top management teams.

This research contributes to the team innovation literature in identifying the specific behaviors through which leaders can influence their work teams, by influencing shared affective experiences among team members to facilitate better innovative performance. We further extend previous research in the area of innovation because most studies have concentrated on how team-level affect influences team creativity (the generation of novel ideas), rather than the behavioral process associated with the implementation of novel ideas. Finally, our research contributes to the emerging literature on the importance of interpersonal emotion regulation in organizations,

by establishing clear links between interpersonal emotion regulation and a core aspect of work performance, and by demonstrating that interpersonal emotion regulation can have effects at the level of the work team. Below, we present our theory and hypothesis development, followed by details of the study conducted and the discussion of its results.

Leader Interpersonal Emotion Regulation in Teams

Traditionally, researchers of emotion regulation have focused on understanding the behaviors that people use to manage their own feelings. Most researchers originally termed this process emotion regulation, but more recently specific terms (e.g., intrinsic or intrapersonal emotion regulation) have been applied to highlight the within-person nature of the influence, denoting the fact that this process involves the regulation of a person's own affect. However, as part of a more general movement within the field of emotion towards recognition of affect as social in nature (see, e.g., Van Kleef, 2009), scholars now increasingly recognize a second, distinctive form of emotion regulation that involves attempts to manage other people's feelings. Researchers have described this alternative form of emotion regulation as interpersonal or extrinsic emotion regulation (Gross, 2013; Niven, 2017). Importantly, interpersonal emotion regulation should not be confounded or reduced to the notion of emotional intelligence. The latter is defined as a series of *abilities* (i.e., recognition, understanding and use of emotion) among which modification of others' feelings is described (George, 2000). However, the emotional intelligence research has paid less attention to the specific interpersonal *behaviors* oriented to provoke, change or modulate affect in others (Mayer, Roberts, & Barsade, 2008; Troth et al., 2018).

Researchers have proposed diverse models of emotion regulation in the psychological literature, with Gross's process model being the most widely adopted (Gross, 2013). According

to this model, individuals enact an array of cognitive and behavioral strategies to deal with emotional experiences, particularly those negatively valenced, before, during, and after the occurrence of affective-laden events. Niven and colleagues (2009) offer a complementary model focusing specifically on interpersonal emotion regulation, introducing the idea that emotion regulation also involves taking in account the valence of feelings and the motivation underlying the regulation behavior. Accordingly, this model describes two distinctive sets of regulation strategies that people can use, which are motivated to either improve (positive valence) or worsen (negative valence) feelings in others. Thus, affect-improving interpersonal emotion regulation behavior involve initiating, maintaining or intensifying *positive feelings* in others through, for example, highlighting a person's positive features or demonstrating authentic interest when others face difficult times. In contrast, affect-worsening behaviors involve initiating, maintaining or intensifying *negative feelings* in others by, for example, giving destructive criticism and highlighting others' shortcomings. These behaviors can operate on two levels of processing - controlled and automatic (Bargh & Williams, 2007; Gross, 2013; Mauss, Bunge, & Gross, 2007; Shiffrin & Schneider, 1977; Webb, Totterdell, & Ibar, 2015). In the first case, interpersonal emotion regulation involves performing behaviors deliberately to change the affective experience in others. On the other hand, at the automatic level, regulation behavior involves actions that shape others' feelings even when the regulator is not necessarily aware of doing so. Despite this distinction, what unifies all forms of interpersonal emotion regulation is that they enact changes to others' feelings.

Interpersonal emotion regulation should have important implications in the organizational setting, which by definition is charged with interpersonal meaning, such as the case of teamwork. Accordingly, interpersonal emotion regulation of a focal team member might be directed towards

other team members (e.g., trying to make them feel excited), resulting in shared affective experiences and therefore influencing further team performance (Barsade & Knight, 2015; Marks, Mathieu, & Zaccaro, 2001). In this context, while any and all team members might engage in interpersonal emotion regulation, we argue that the interpersonal emotion regulation used by team leaders is particularly sensitive in this context, because leaders occupy a salient and powerful position within the team, meaning that team members are more likely to attend to their behavior (Sy et al., 2005). In support of this, affect is part of diverse theories on leadership (Ashkanasy & Humphrey, 2011; George, 2000; Gooty, Connelly, Griffith, & Gupta, 2010; Humphrey, 2002).

In general terms, we propose that leaders' behaviors oriented to improve or worsen emotions among team members may be related to team affective tone, namely, shared team affective experiences, which in turn may be associated with team innovation. This relies on the structure provided by the Inputs, Processes, States and Outputs (IPSO) model of team effectiveness, generally adopted to understand group-level affect (Collins et al., 2013). According to this framework, Inputs are the set of organizational, group and individual resources available to perform the tasks in the team, such as team member individual differences or strategic actions (Madrid, Totterdell, Niven, & Barros, 2016). Processes and States are the vehicles by which team members use Inputs while working, such that processes refer to behavioral dynamics like coordination and information sharing, while States are psychological functions emerging from team members interactions, such as cohesion, affective tone and shared mental models (George, 1996; Mathieu et al., 2008; Mohammed, Ferzandi, & Hamilton, 2010; West, 2002). In turn, Outputs denotes the team performance criteria, usually defined in terms of quantity and quality of work or innovation (De Dreu & West, 2001). In our application of the

IPSO framework, we define leader affect-improving and affect-worsening interpersonal emotion regulation behaviors as team Inputs, which through the States of positive and negative team affective tone are associated with the Output of innovation (Figure 1).

[INSERT FIGURE 1 AROUND HERE]

Adoption of IPSO model only enables us to describe *how* leader interpersonal emotion regulation may be related to team affective tone and thereby team innovation, but not to define *why* these variables are linked each other. Thus, in the following section, we argue for the psychological processes that may be explicative of the model examined.

Leader Interpersonal Emotion Regulation and Team Affective Tone

At the first stage of our proposed model, leader interpersonal emotion regulation is a source of team affective tone. The latter refers to a consistent affective experience among the members of a team, which arises due to interpersonal interaction within the team (Barsade & Knight, 2015; George, 1996; Klep, Wisse, & Van der Flier, 2011). Thus, team affective tone is an emergent property at the group-level that describe the feelings experienced in a team as a whole, rather than the individual affect of team members. Team positive affective tone entails, for example, shared enthusiasm, joy and inspiration, while team negative affective tone is characterized by shared feelings like tension, anxiety and worry.

The role of leader interpersonal emotion regulation in shaping team affective tone is likely to stem from the informational function of emotions in the social realm. According to emotions-as-social information theory (EASI, Van Kleef, 2009), affective behavior (e.g., expression of emotions) serves a communicative function, transmitting information to observers about a person's goals, attitudes, and intentions toward the social exchange. Recipients of such behavior interpret the meaning of the information communicated through these affective

behaviors, via inferential processing, considering the implications of the behavior with respect to their relationship and performance, and ultimately influencing their affect (Van Kleef, 2009). Recipients of the expression of positive emotions usually signify that the sender of this expression is authentically interested in the quality of social interchange, which elicit, therefore, positive feelings among the recipients. In contrast, receivers of the expression of negative affect often interpret a sender's lack of interest in the relationship among them and even as a negative disposition towards the social interchange.

The same explanatory mechanisms may apply to explain a relationship between leader interpersonal emotion regulation and team affective tone. Regulation behavior emanating from leaders is likely to have important meaning for team members, due to the powerful position occupied by the leader within the team (Sy et al., 2005). Thus, when a leader enacts interpersonal emotion regulation behaviors aimed to improve positive feelings directed to the team as a whole (e.g., praising the positive characteristics of team members), team members may collectively engage in inferential processing, interpreting that the leader is concerned with the quality of the social exchange in the team, which thereby leads to the experience a cohesive team positive affective tone. In contrast, when a leader behave to worsen the emotions of team members (e.g., trying to make the team feel guilty about their below-par performance), team members might signify that the leader is less concerned with the quality of the interpersonal climate within the team, which would lead to the experience of team negative affective tone. As such, leaders who use affect-improving emotion regulation in the context of teams are expected to elicit shared positive feelings among team members, whereas those who use affect-worsening emotion regulation are expected to produce shared negative affect.

Team Affective Tone and Team Innovation

The second stage of the model explains that team affective tone will in turn lead to innovation. We approached the latter from a behavioral perspective, such that team innovation refers to the series of actions that team members enact to pay attention, discuss and experiment with novel ideas (Kanter, 1988). The value of this behavioral process is due to team members are those who primarily think, share, react and implement novel ideas that are conductive to innovative outcomes, such as novel processes, products or services (De Dreu & West, 2001; Janssen, 2000; West, 2002). Thus, team innovation involves an interpersonal process in which team members generate, promote and spend time to make novel ideas happen in practice (Madrid, Patterson, Birdi, Leiva, & Kausel, 2014). Here, we argue that team affective tone is likely to have congruent effects on these behavioral components of innovation.

Previous research on the related construct of team creativity, namely, the generation of novel ideas, has suggested that affect leads to this outcome due to information processing mechanisms (Grawitch, Munz, Elliott, & Mathis, 2003; Klep, Wisse, & Van der Flier, 2011). As such, mirroring knowledge on intrapersonal psychological processes linked to individual-level affect and creativity (Amabile, Barsade, Mueller, & Staw, 2005; George & Zhou, 2007), positive feelings at the team-level would be associated with heuristic, broaden and diverse thinking, which could facilitate the unconventional organization of knowledge and information about the tasks in hand. In contrast, negative feelings at the team-level would involve systematic, narrow and convergent information processing and so ought to stifle creative thinking (Fredrickson, 1998). We should note, however, that while experimental studies have supported the theorized role of positive affect, for example, showing that groups induced with positive affect produce more original ideas compared with a neutral affect condition (Grawitch et al., 2003), empirical

research on group negative affect reports somewhat more ambiguous effects on team creativity (Jones & Kelly, 2009; Klep et al., 2011; Tsai, Chi, Grandey, & Fung, 2012).

In an alternative way, we propose that the mechanisms that explain the relationship between team-level affect and team innovation are those involving interpersonal meaning, because innovation is, as highlighted above, an interpersonal process. In support of this, there is strong evidence that social integration aids implementation of novel ideas, i.e., constructive relationships between members of a group, expressed in, for instance, cohesion, collaboration, and interpersonal facilitation (Hulsheger, Anderson, & Salgado, 2009; Siegel & Kaemmerer, 1978; West, 2002), and that shared feelings within teams influence social integration (Keltner & Haidt, 1999; O'Reilly, Caldwell, & Barnett, 1989; Smith et al., 1994). When team affective tone is positively valenced, it serves an affiliation function, which facilitates bonding and cooperation (Knight & Eisenkraft, 2015), and therefore ought to facilitate implementation of novel ideas. A seminal study in this domain, for example, indicates that positive feelings ripple among team members helping collaboration and social facilitation (Barsade, 2002). In contrast, team negative affective tone has the potential to impair social integration, especially when shared feelings stem from an endogenous source (Barsade & Knight, 2015; Knight & Eisenkraft, 2015), such as the case of interpersonal emotion regulation of a leader. In this case, the sense of affiliation becomes weak and thus negative appraisals about the group itself or relational conflict emerge (Choi & Cho, 2011; Gamero, Gonzalez-Roma, & Peiro, 2008), with the potential to inhibit implementation of ideas.

We therefore expect that positive team affective tone will enhance innovation in teams, whereas negative team affective tone will stifle team innovation. Thus, integrating both stages of our model, we propose two mediation hypotheses:

Hypothesis 1: There is a mediation process between leader affect-improving interpersonal emotion regulation, team positive affective tone and team innovation, such that affect-improving regulation relates positively to positive affective tone, which, in turn, relates positively to innovation.

Hypothesis 2: There is a mediation process between leader affect-worsening interpersonal emotion regulation, team negative affective tone and team innovation, such that affect-worsening regulation relates positively to negative affective tone, which, in turn, relates negatively to innovation.

An important consideration is whether leaders' interpersonal emotion regulation behavior has incremental validity over and above leaders' individual differences. Extraversion and neuroticism are relevant personality factors to consider, because they entail temperamental tendencies to experience positive and negative affect over time (Watson & Clark, 1992), which might propagate within teams by means of emotional contagion (Sy & Choi, 2013), influencing team affective tone and thereby team innovation. Furthermore, from an empirical stance, extraversion and neuroticism might act as confounding variables, such that they are predictors of interpersonal emotion regulation and team affective tone (c.f., Spector, 1994). Thus, we tested the mediation hypotheses proposed controlling by leaders' extraversion and neuroticism to determine whether the model adds explanatory effects over leaders' personality and also to account for possible statistical artifacts.

Method

To test our hypotheses, we conducted a multisource field study. Two independent surveys were administrated, to control for possible common-method variance bias relative to the main dependent variable of the study (Podsakoff, MacKenzie, & Podsakoff, 2012). The first was

applied to team members (excluding leaders) who report ratings about their leader's interpersonal emotion regulation and their affect within the team, together with interaction frequency with the leader (control variable). Leaders responded to a second survey, in which they rated team innovation, and their extraversion and neuroticism (control variables).

Participants

We conducted our study within a multinational energy organization. In this organization, members of top management teams, comprised by executive managers, were invited to participate in a study about teamwork. These teams performed strategic management tasks; thus, they were part of a population particularly suitable for the study's purposes, taking in account that leadership, teamwork and innovation are integral part of the top management teams' work.

The original sample invited to participate in the study comprised 351 executive managers who were part of 78 teams, from which 264 team members and 61 leaders actually responded the surveys. After following the guidelines of Timmerman (2005) indicating the exclusion of cases with intra-team response rates less than 60%, the final sample comprised 182 executive managers nested in 45 teams. This case selection strategy was appropriate, because reliable statistical estimations of relationships between team-level constructs require a high number of relevant team members. As a result, the final sample entailed response rates of 51.85% for team members and 57.69% for team leaders. The intra-team average participation rate was 87.79% (*SD* = 12.27%) and the average size of participating teams was 4.55 members (minimum = 2, maximum = 6; *SD* = 1.33). Of the team members, 75.8% were male, their average age was 43.82 years (*SD* = 8.29), their educational level was 100% university studies, and their average organizational tenure was 6.98 years (*SD* = 8.07). Of the team leaders, 89% were male, their average age was 46.85 years (*SD* = 7.96), their educational level was 100% university studies,

and their average organizational tenure was 6.34 years (*SD* = 7.57). One-way analysis of variance, based on the comparison between the original sample invited to participate in the study and the actual participants, showed no significant differences regarding gender, age and organizational tenure ($0.92 < F < 2.12$).

Measures

Team Member Survey

Leader interpersonal emotion regulation was rated by team members, using a 13-item scale adapted from Niven et al. (2011) to capture regulation behavior of leaders. We chose to assess leaders' emotion regulation from the perspective of team members (rather than from leaders' direct ratings), in line with the strategy applied by others (e.g., Little et al., 2016; Madrid, Totterdell, Niven & Vasquez, 2018), because our model concerned the extent to which a focal leader regulates emotions of the team as whole. Thus, information about this regulation behavior steaming from all team members should be more reliable compared with the single leader's self-report of interpersonal emotion regulation. A further reason for the use of team members' ratings of emotion regulation of leaders is that we theorized that it is recipients' inferences about the regulation they receive that is crucial for influencing team affective tone. Thus, interpersonal emotion regulation that team members are aware of is likely the primarily source to register those effects. A further advantage of this measurement strategy is that in many cases leaders might engage in interpersonal emotion regulation relatively automatically, without full conscious awareness (e.g., they may perform certain behaviors habitually; Gyurak, Gross, & Etkin, 2011). Assessing team members' perceptions of leaders' interpersonal emotion regulation therefore enables us to capture regulation attempts that leaders are both aware and unaware of. Thus, team members were asked to rate the extent to which their leader uses behaviors to

influence the way they feel on a response scale of 1: *not at all* – 5: *a great extent*. Example items are "discusses team member's positive characteristics" (6 items for improving, α = .94) and "acts annoyed towards team members" (7 items for worsening, α = .85). The full list of these measures is available in the Appendix.

Team affective tone was measured with 6 items from the scale of Warr, Bindl, Parker, and Inceoglu (2014), adapted to measure shared affect within teams. Thus, team members were asked to rate the extent to which they feel an array of feelings *within their teams*, on a response scale of 1: *never* – 5: *always/almost always*. Items were "enthusiastic", "joyful" and "inspired" for positive tone (α = .83); and "worry", "anxious" and "tense" for negative tone (α = .86).

Finally, team members reported interaction frequency with their leaders with the single item "how frequently do you interact with your team leader?" in which the response choices were 1: *almost never* – 5: *everyday*. We controlled for interaction frequency in the assumption that more interaction would afford greater opportunity for leader interpersonal emotion regulation to transmit its effects.

Team Leader Survey

In the leader survey, we measure team innovation with 3 items from the scale of De Dreu and West (2001). This scale asked leaders to indicate the extent to which their teams performs actions such as "often implement new ideas to improve the quality of our products and services" 1: *strongly disagree* – 5: *strongly agree* (α = .87).

Leaders' extraversion and neuroticism were also measured using 8 items from the Big5 scale developed by Benet-Martínez and John (1998), in which items were framed as "I see myself as a person who…", and response choices were 1: *strongly disagree* – 5: *strongly agree*.

Example items are “generates a lot of enthusiasm” (4 items for extraversion, α = .72) and “gets nervous easily” (4 items for neuroticism, α = .66).

Overview of Analyses

We used a two-step strategy for data analysis. First, we used Intra-Class Correlation (ICC1) to estimate the degree of non-independence of interpersonal emotion regulation and team affective tone, relative to team membership (Bliese, 2000). Furthermore, inter-rater agreement was estimated using the rwg and Average Deviation (AD) indices (LeBreton & Senter, 2008), to determine if we could define individual-level measures of interpersonal emotion regulation and team affective tone as team-level constructs. ICC1 values over .12 indicate substantive non-independence, while rwg values above .70 and AD values below .80 indicate substantive agreement. Thus, meeting both criteria provides support for aggregating these measures at the team level.

Second, hypothesis testing was conducted with PROCESS (Hayes, 2013), which is a path analysis framework to estimate multivariate models such as mediation, as the tested here, based on team-level data aggregated from team members ratings for leader interpersonal emotion regulation and team affective tone, together with team-level ratings of innovation provided by team leaders. Hypotheses for improving and worsening interpersonal emotion regulation were tested with two independent models, because, after attrition of the original sample of teams invited to participate in the study ($N = 78$), the sample size available at the team level to conduct the analyses ($N = 45$) was insufficient to test all the variables in a single model in a reliable way.

Results

Inter-rater reliability and agreement analyses showed substantive non-independence from team membership and agreement among team members about leader affect-improving

interpersonal emotion regulation (ICC1 = .44, rwg = .82, AD = .61), affect-worsening interpersonal emotion regulation (ICC1 = .26, rwg = .90, AD = .49), positive team affective tone (ICC1 = .15, rwg = .86, AD = .50), and negative team affective tone (ICC1 = .13, rwg = .76, AD = .61). This supported the operationalization of these variables as team-level constructs.

The means, standard deviations, correlations and reliabilities of the variables are summarized in Table 1. Hypothesis 1 proposed that leader affect-improving interpersonal emotion regulation would be positively related to positive affective tone, which in turn would be positively related to team innovation. Results of path analysis (Table 2, Model 1) showed that improving regulation was positively related to positive affective tone (b = .43, SE = .07, p < .01), which in turn was positively related to innovation (b = .58, SE = .28, p < .05), and improving regulation showed an indirect positive effect on innovation (b = .25, p < .05) (Figure 2, Model 1). Thus, Hypothesis 1 was supported. Hypothesis 2 proposed that leader affect-worsening interpersonal emotion regulation would be positively related to team negative affective tone, which in turn would be negatively related to team innovation. Results here (Table 2, Model 2) showed that worsening regulation was positively related to negative affective tone (b = .51, SE = .17, p < .01), which in turn was negatively related to innovation (b = -.60, SE = .26, p < .05), and worsening regulation showed an indirect negative effect on innovation (b = -.31, p < .05) (Figure 2, Model 2). Hypothesis 2, therefore, was supported.

[INSERT TABLE 1 AND 2 AROUND HERE]

[INSERT FIGURE 2 AROUND HERE]

Discussion

Our study highlights that leader affect-improving interpersonal emotion regulation is positively related to team innovation via team positive affective tone, such that regulation

behaviors oriented to elicit positive feelings among team members were positively related to shared positive feelings, such as enthusiasm, joy and inspiration, which in turn were positively related to the implementation of novel ideas. Leader affect-worsening interpersonal emotion regulation had the opposite effect, since this type of regulation was negatively associated with team innovation via team negative affective tone. Regulation behavior oriented to make feel others negative was positively related to shared unpleasant feelings among team members, such as worry, anxiety and tension, which were in turn negatively related to team innovation. Importantly, the effects we observed had incremental validity over and above the leader extraversion and neuroticism. This suggests that, after accounting for the possible mechanisms associated with, for example, emotional contagion linked to the intrapersonal affective experience embedded in these traits, leader interpersonal emotion regulation plays an important role in the team context.

Our model and findings contribute to interpersonal emotion regulation theory and research, by expanding this construct, widely applied in basic psychology (Gross, 2013; Niven, 2017), to the workplace and organizational domains. Related constructs, such as emotional intelligence and self-regulation of emotions, have been examined in work and organizational psychology, particularly in relation to leadership (George, 2000; Gooty et al., 2010). However, relevant theory and studies have paid less attention to the specific interpersonal behaviors oriented to provoke, change or modulate affect in others, such as team members. Our study is one of the first to connect leaders' behaviors to improve and worsen feelings among team members to team-level processes and outcomes, based on a novel conceptual integration among interpersonal emotion regulation, team effectiveness, and emotions-as-social-information theory. Specifically, our argumentation is that leader interpersonal emotion regulation may communicate

team members about leaders' goals, attitudes, and intentions about the relationship and the social exchange among them, which when inferred by team members elicit shared affective states (Van Kleef, 2009), which in turn increases or decreases the output of team innovation by means of social integration (Knight & Eisenkraft, 2015).

In terms of teamwork, our research contributes by enhancing our understanding of how interpersonal emotion regulation could be a vehicle for leaders' influence in teams. By integrating the emotion regulation literature with the teamwork literature to define a process of team effectiveness (Collins et al., 2013; Ilgen et al., 2005; Marks et al., 2001; McGrath, 1964), we developed a model in which leader interpersonal emotion regulation was described and supported as a relevant team Input, which through the team State of affective tone explain differences in the team Output of innovation. This is a step further in the research of emotion regulation, which in general has been conducted at the individual level of analysis, in relation to, for example, individual emotions, moods and behaviors (Niven, Totterdell & Holman, 2007; Niven, Holman, & Totterdell, 2012). Here, we expand this approach by paying attention to how emotion regulation can adopt an interpersonal meaning, relative to group-level processes, such as collective affective experiences (i.e., team affective tone) and team-level performance.

Finally, we also increase knowledge of team innovation from this study. Most studies on affect at the group-level have focused on the mere generation of novel ideas and solutions to tasks involving creative thinking in laboratory settings (i.e., creativity; Grawitch et al., 2003; Klep et al., 2011), whereas there has been much less focus on how affect influences the implementation of novel ideas in the organizational setting (i.e., innovation). Here, we argue that team innovation involves a clear social component and is therefore highly sensitive to interpersonal psychological processes. While this is an implicit factor in the team innovation

literature (West, 2002), to the best of our knowledge this has been scantly studied in depth in relation to the affective-laden processes. Here we addressed this omission and expand the set of possible variables that have the potential of explaining how team innovation can be fostered or inhibited in organizations.

In practical terms, professionals dedicated to interventions in team effectiveness should bear in mind that managing emotion in this domain matters, particularly when they take the leader behaviors into account. Because interpersonal emotion regulation of leaders has the potential to shape the affective environment and effectiveness within teams, development programs for leaders should incorporate assessment and training of interpersonal emotion regulation and emotional intelligence skills, e.g., via role plays and simulations. Alternatively, personnel selection systems could adopt interpersonal emotion regulation as an assessment variable when recruiting candidates for team leadership positions, especially when innovation is a relevant criterion of performance.

Limitations and Future Research

The use of a survey design means that it is only possible to theoretically infer causality between the variables examined. An alternative explanation for the mediation processes supported involves a reciprocity effect between followers and their leaders. For example, team members may affectively react (team affective tone) and appraise their leaders' emotion regulation behavior more positively when they have leaders who evaluate their innovative behavior more positively (and the opposite when evaluations are more negative). These issues are particularly sensitive to the use of behavioral, but subjective, ratings of innovation, and the use of a cross-sectional design. These issues were not possible to be addressed, because, with the data available, mediation models at any causal direction are statistically equivalent and

identified. Thus, additional research using objective measures of innovation and longitudinal designs would be valuable to control these limitations.

Furthermore, the use of cross-sectional data could also lead to issues of common-method variance (Podsakoff et al., 2012), by means of implicit theories of participants about the relationships of the variables examined, or effects of semantics among the measures modelled (Arnulf, Larsen, Martinsen, & Bong, 2014). This was mitigated for in the relationship between team affective tones and innovation, due to the use of independent surveys; however, common-method variance might be an issue in the association of interpersonal emotion regulation and affective tones, because both variables were measured using the same instrument.

Another possible limitation is the use of team members' reports of leader interpersonal emotion regulation. While we have discussed our reasoning for adopting this strategy and the strengths of this approach earlier (Little et al., 2016; Madrid, Totterdell, Niven & Vasquez, 2018), we do recognize that there may be some downsides of this strategy. With team members as source of information, we could only capture those attempts at interpersonal emotion regulation that team members were aware of. Furthermore, the intentional motivation of leaders to actively improve or worsen team members' feelings is not necessarily captured as well. The statement of the leader interpersonal emotion regulation measure utilized here, which asked team members to rate "the extent to which their leader uses strategies to *influence* the way they feel," relieves these concerns, as well as previous studies showing that measures with the same content involves emotion regulation (e.g., Niven et al., 2012).

Moreover, the use of team members as a source of information about leaders' interpersonal emotion regulation might bias the ratings of this construct and their relationship with team affective tone, due to contagion processes and attitudes of team members toward their

leaders (Martinko, Mackey, Moss, Harvey, & Brees, 2018; Tee, Ashkanasy, & Paulsen, 2013). In a recent investigation, Martinko and colleagues have argued and supported that a construct involving "affect towards leaders," namely, the tendency of followers to like their leaders, influences appraisals about leader characteristics, such that greater liking leads to more positive evaluations (Martinko, et al., 2018). Furthermore, Martinko and colleagues suggested that this variable might confound the relationship between leadership characteristics and other variables with affective meaning, for instance followers' moods, such that liking might be the cause of both. Hence, our team members' "affect towards leaders" could have influenced their ratings of leader interpersonal emotion regulation and also caused a spurious relationship between leader emotion regulation and team affective tone. However, in the case of our study, we believe that liking may not be necessarily a confounding variable, but a mediation variable instead, such that leader affect-improving and worsening emotion regulation cause (dis)like the leader, which in turn shapes affective tone. Thus, future research should account for these processes by including in their empirical and statistical models the tendency of followers' to (dis)like their leaders.

Finally, on a more technical note, the processes for affect-improving and affect-worsening interpersonal emotion regulation relative to positive and negative affect tones were tested in independent models. This was because we reduced the original pool of participating teams to only 45 teams, after applying criteria of excluding teams with small response rates of members, which decreased the statistical power to estimate in a single model the both mediation processes involved in hypotheses testing.

Thus, taking the above limitations together, further research using experimental, longitudinal and multisource data with larger samples is needed to determine if the results observed here are robust and replicable. Important additional hypotheses may be explored in

future as well. We argue that the communicational function of affect and social integration linked to shared affective experiences explain the relationships between leader interpersonal emotion regulation, team affective tone and team innovation. However, these processes were not measured and empirically tested, so their examination in future studies would be valuable for obtaining support to the theory development offered here. Furthermore, here we focused on leaders because they have a salient and influential role within teams, but it may be that the other team members' interpersonal emotion regulation behavior adds explanation for team effectiveness. Finally, here we adopted a static understanding of the relationships between interpersonal emotion regulation, affective tone, and performance in teams. However, emergent findings suggest that the relationships observed might potentially vary dynamically over time (Barsade & Knight, 2015; Knight & Eisenkraft, 2015). We believe these are interesting opportunities for future research deserving attention.

To conclude, in this article we described and tested a model of leader interpersonal emotion regulation in teams, supporting the proposal that leaders' affect-improving and affect-worsening of team members' emotions matters for team innovation. We trust this knowledge will nurture future theoretical and empirical research, in order to inform scholars and practitioners about an avenue to improve affect and effectiveness within teams.

References

Amabile, T. M., Barsade, S. G., Mueller, J. S., & Staw, B. M. (2005). Affect and creativity at work. *Administrative Science Quartely*, *50*(3), 367–403. http://dx.doi.org/10.2189/asqu.2005.50.3.367

Arnulf, J. K., Larsen, K. R., Martinsen, Ø. L., & Bong, C. H. (2014). Predicting survey responses: How and why semantics shape Survey statistics on organizational behaviour. *PLoS ONE, 9*(9). doi:10.1371/journal.pone.0106361

Ashkanasy, N., & Humphrey. (2011). Current emotion research in organizational behavior. *Emotion Review*, *3*(2), 214–224. http://dx.doi.org/10.1177/1754073910391684

Bargh, J. A., & Williams, L. E. (2007). On the Nonconscious of Emotion Regulation. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (pp. 429-445). New York: Guilford Press.

Barsade, S. G. (2002). The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly*, *47*(4), 644–675. http://dx.doi.org/10.2307/3094912

Barsade, S. G., & Gibson, D. E. (1998). Group emotion: A view from top and bottom. *Research on Managing Groups and Teams, Vol 1 - 1998: Composition*, *1*, 81–102.

Barsade, S. G., & Knight, A. P. (2015). Group affect. *Annual Review of Organizational Psychology and Organizational Behavior.*, *2*(1), 21–46. http://dx.doi.org/10.1146/annurev-orgpsych-032414-111316

Benet-Martínez, V., & John, O. P. (1998). Los Cinco Grandes across cultures and ethnic groups: Multitrait method analyses of the Big Five in Spanish and English. *Journal of Personality and Social Psychology*, *75*, 729–750. http://dx.doi.org/10.1037/0022-3514.75.3.729

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications

for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (Vol. xxix, p. 605). San Francisco, CA: Jossey-Bass.

Bruder, M., Fischer, A., & Manstead, A. S. R. (2014). Social appraisal as a cause of collective emotions. In C. von Scheve & M. Salmela (Eds.), *Collective emotions* (pp. 141–155). Oxford, UK: Oxford University Press.

Choi, K., & Cho, B. (2011). Competing hypotheses analyses of the associations between group task conflict and group relationship conflict. *Journal of Organizational Behavior*, *32*(8), 1106–1126. http://doi.org/10.1002/job.733

Collins, A. L., Lawrence, S. A., Troth, A. C., & Jordan, P. J. (2013). Group affective tone: A review and future research directions. *Journal of Organizational Behavior*, *34*, S43–S62. http://doi.org/10.1002/job.1887

De Dreu, C. K. W., & West, M. A. (2001). Minority dissent and team innovation: The importance of participation in decision making. *Journal of Applied Psychology*, *86*(6), 1191–1201. http://dx.doi.org/10.1037/0021-9010.86.6.1191

Elfenbein, H. A. (2014). The many faces of emotional contagion: An affective process theory of affective linkage. *Organizational Psychology Review*, *4*(4), 326-362. https://doi.org/10.1177/2041386614542889

Farr, J. L., & West, M. A. (Eds.). (1990). *Innovation and creativity at work: Psychological and organizational strategies*. Oxford, England: John Wiley & Sons.

Friesen, A. P., Lane, A. M., Devonport, T. J., Sellars, C. N., Stanley, D. N., & Beedie, C. J. (2013). Emotion in sport: considering interpersonal regulation strategies. *International review of sport and exercise psychology*, *6*(1), 139-154.

http://dx.doi.org/10.1080/1750984X.2012.742921

Gamero, N., Gonzalez-Roma, V., & Peiro, J. M. (2008). The influence of intra-team conflict on work teams' affective climate: A longitudinal study. *Journal of Occupational and Organizational Psychology*, *81*, 47–69. http://doi.org/10.1348/096317907x180441

George, J. M. (1996). Group afective tone. In M. A. West (Ed.), *Handbook of Work Group Psychology*. Chichester, UK: Willey & Sons.

George, J. M. (2000). Emotions and leadership: The role of emotional intelligence. *Human Relations*, *53*(1027–1055). http://dx.doi.org/10.1177/0018726700538001

George, J. M., & Zhou, J. (2007). Dual tuning in a supportive context: Joint contributions of positive mood, negative mood, and supervisory behaviors to employee creativity. *Academy of Management Journal*, *50*, 605–622. http://dx.doi.org/10.5465/AMJ.2007.25525934

Gooty, J., Connelly, S., Griffith, J., & Gupta, A. (2010). Leadership, affect and emotions: A state of the science review. *The Leadership Quarterly*, *21*, 979–1004. http://doi.org/10.1016/j.leaqua.2010.10.005

Grawitch, M. J., Munz, D. C., Elliott, E. K., & Mathis, A. (2003). Promoting creativity in temporary problem-solving groups: The effects of positive mood and autonomy in problem definition on idea-generating performance. *Group Dynamics: Theory, Research, and Practice*, *7*(3), 200–213. http://doi.org/10.1037/1089-2699.7.3.200

Gross, J. J. (2013). Emotion regulation: taking stock and moving forward. *Emotion*, *13*(3), 359-365. http://dx.doi.org/10.1037/a0032135

Gyurak, A., Gross, J. J., & Etkin, A. (2011). Explicit and implicit emotion regulation: a dual-process framework. *Cognition and Emotion*, *25*, 400-412. https://doi.org/10.1080/02699931.2010.544160

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis. A regression-based approach*. New York, NY: Guilford.

Hulsheger, U., Anderson, N. R., & Salgado, J. (2009). Team-level predictors of innovation at work: A comprehensive meta-analysis Spanning three decades of research. *Journal of Applied Psychology*, *94*(5), 1128–1145. http://doi.org/10.1037/a0015978

Humphrey, R. H. (2002). The many faces of emotional leadership. *Leadership Quarterly*, *13*(5), 493–504. http://doi.org/Pii s1048-9843(02)00140-610.1016/s1048-9843(02)00140-6

Ilgen, D. R., Hollenbeck, J. R., Johnson, M., & Jundt, D. (2005). Teams in organizations: From input-process- output models to IMOI models. *Annual Review of Psychology*, *56*, 517–543. http://dx.doi.org/10.1146/annurev.psych.56.091103.070250

Janssen, O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behaviour. *Journal of Occupational and Organizational Psychology*, *73*, 287–302. http://dx.doi.org/10.1348/096317900167038

Jones, E. E., & Kelly, J. R. (2009). No Pain, No Gains: Negative Mood Leads to Process Gains in Idea-Generation Groups. *Group Dynamics*, *13*(2), 75–88. http://doi.org/10.1037/a0013812

Kanter, R. M. (1988). When a thousand flowers bloom - Structural, collective, and social conditions for innovation in organization. *Research in Organizational Behavior*, *10*, 169–211.

Kelly, J. R., & Barsade, S. G. (2001). Mood and emotions in small groups and work teams. *Organizational Behavior and Human Decision Processes*, *86*, 99–130. http://dx.doi.org/10.1006/obhd.2001.2974

Keltner, D., & Haidt, J. (1999). Social functions of emotions at four levels of analysis. *Cognition*

& Emotion, *13*(5), 505–521. http://dx.doi.org/10.1080/026999399379168

Klep, A., Wisse, B., & Van der Flier, H. (2011). Interactive affective sharing versus non-interactive affective sharing in work groups: Comparative effects of group affect on work group performance and dynamics. *European Journal of Social Psychology*, *41*(3), 312–323. http://doi.org/10.1002/ejsp.775

Knight, A. P., & Eisenkraft, N. (2015). Positive is usually good, negative is not always bad: The effects of group affect on social integration and task performance. *Journal of Applied Psychology*. http://doi.org/10.1037/apl0000006

LeBreton, J. M., & Senter, J. J. (2008). Answers to 20 Questions About Interrater Reliability and Interrater Agreement. *Organizational Research Methods*, *11*(4), 815–852. http://doi.org/10.1177/109442810629664

Little, L. M., Gooty, J., & Williams, M. (2016). The role of leader emotion management in leader-member exchange and follower outcomes. *Leadership Quarterly*, *27*(1), 85–97. http://doi.org/10.1016/j.leaqua.2015.08.007

Little, L. M., Kluemper, D., Nelson, D. L., & Gooty, J. (2012). Development and validation of the interpersonal emotion management scale. *Journal of Occupational and Organizational Psychology*, *85*(2), 407-420. 10.1111/j.2044-8325.2011.02042.x

Madrid, H. P., Patterson, M. G., Birdi, K. S., Leiva, P. I., & Kausel, E. E. (2014). The role of weekly high-activated positive mood, context, and personality in innovative work behavior: A multilevel and interactional model. *Journal of Organizational Behavior*, *35*(2), 234–256. http://doi.org/10.1002/job.1867

Madrid, H. P., Totterdell, P., Niven, K., & Barros, E. (2016). Leader affective presence and innovation in teams. *Journal of Applied Psychology*, *101*(5).

http://doi.org/10.1037/apl0000078

Madrid, H. P., Totterdell, P., Niven, K., & Vásquez, C. (2018). Investigating a process model for leader affective presence, interpersonal emotion regulation, and interpersonal behaviour in teams. *European Journal of Work and Organizational Psychology, 27*(5), 642-656. doi: 10.1080/1359432X.2018.1505719

Marks, M. A., Mathieu, J. E., & Zaccaro, S. J. (2001). A temporally based framework and taxonomy of team processes. *Academy of Management Review*, *26*(3), 356–376. http://dx.doi.org/10.2307/259182

Martinko, M. J., Mackey, J. D., Moss, S. E., Harvey, P., & Brees, J. R. (2018). An Exploration of the Role of Subordinate Affect in Leader Evaluations. *Journal of Applied Psychology, 103*(7), 738–752. http://dx.doi.org/10.1037/apl0000302

Mathieu, J., Maynard, M. T., Rapp, T., & Gilson, L. (2008). Team effectiveness 1997-2007: A review of recent advancements and a glimpse into the future. *Journal of Management*, *34*(3), 410–476. http://dx.doi.org/10.1177/0149206308316061

Mauss, I. B., Bunge, S. A., & Gross, J. J. (2007). Automatic emotion regulation. *Social and Personality Psychology Compass*, *1*(1), 146-167. https://doi.org/10.1111/j.1751-9004.2007.00005.x

Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human Abilities: Emotional Intelligence. *Annual Review of Psychology*, *59*(1), 507–536. http://doi.org/10.1146/annurev.psych.59.103006.093646

McGrath, J. E. (1964). *Social psychology: A brief introduction*. New York, NY: Holt, Rhinehart & Winston.

Mohammed, S., Ferzandi, L., & Hamilton, K. (2010). Metaphor no more: A 15-Year review of

the team mental model construct. *Journal of Management*, *36*(4), 876–910. http://doi.org/10.1177/0149206309356804

Mumford, M. D., & Licuanan, B. (2004). Leading for innovation: Conclusions, issues, and directions. *Leadership Quarterly*, *15*, 163–171.

Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. (2002). Leading creative people: Orchestrating expertise and relationships. *Leadership Quarterly*, *13*, 705–720. http://dx.doi.org/10.1016/j.leaqua.2003.12.010

Niven, K. (2017). The four key characteristics of interpersonal emotion regulation. *Current Opinion in Psychology, 17*, 89-93. doi.org/10.1016/j.copsyc.2017.06.015

Niven, K., Holman, D., & Totterdell, P. (2012). How to win friendship and trust by influencing people: An investigation of interpersonal affect regulation and the quality of relationships. *Human Relations, 65*, 777-805. doi.org/10.1177/0018726712439909

Niven, K., Totterdell, P., & Holman, D. (2007). Changing moods and influencing people: The use and effects of emotional influence behaviours at HMP Grendon. *Prison Service Journal, 173*, 39-45.

Niven, K., Totterdell, P., & Holman, D. (2009). A classification of controlled interpersonal affect regulation strategies. *Emotion*, *9*(4), 498. http://dx.doi.org/10.1037/a0015962

O' Reilly, C. A., Caldwell, D. F., & Barnett, W. P. (1989). Work group demography, social integration, and turnover. *Administrative Science Quarterly*, *34*(1), 21. http://doi.org/10.2307/2392984

Parkinson, B. (1996). Emotions are social. *British Journal of Psychology*, *87*(4), 663-683. 10.1111/j.2044-8295.1996.tb02615.x

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social

science research and recommendations on how to control it. In S. T. Fiske, D. L. Schacter, & S. E. Taylor (Eds.), *Annual Review of Psychology, Vol 63* (Vol. 63, pp. 539–569). Palo Alto: Annual Reviews. http://doi.org/10.1146/annurev-psych-120710-100452

Schneider, W., & Shiffrin, R. M. (1977). Controlled and automatic human information processing: I. Detection, search, and attention. *Psychological review*, *84*(1), 1. http://dx.doi.org/10.1037/0033-295X.84.1.1

Siegel, S., & Kaemmerer, W. (1978). Measuring the perceived support for innovation in organizations. *Journal of Applied Psychology*, *63*, 553–562. http://dx.doi.org/10.1037/0021-9010.63.5.553

Smith, K. G., Smith, K. A., Olian, J. D., Sims, H. P., O'Bannon, D. P., Scully, J. A., & Scully, J. A. (1994). Top management team demography and process: The role of social integration and communication. *Administrative Science Quarterly*, *39*(3), 412. http://doi.org/10.2307/2393297

Spector, P. E. (1994). Using self-report questionnaires in OB research: A comment on the controversial method. *Journal of Organizational Behavior*, *15*, 385–392. http://dx.doi.org/10.1002/job.4030150503

Sy, T., & Choi, J. N. (2013). Contagious leaders and followers: Exploring multi-stage mood contagion in a leader activation and member propagation (LAMP) model. *Organizational Behavior and Human Decision Processes*, *122*, 127–140. http://doi.org/10.1016/j.obhdp.2013.06.003

Sy, T., Côté, S., & Saavedra, R. (2005). The contagious leader: The impact of the leader's mood on the mood of group members, group affective tone, and group processes. *Journal of Applied Psychology*, *90*, 295–305. http://dx.doi.org/10.1037/0021-9010.90.2.295

Tamminen, K. A., & Crocker, P. R. (2013). "I control my own emotions for the sake of the team": Emotional self-regulation and interpersonal emotion regulation among female high-performance curlers. *Psychology of Sport and Exercise*, *14*(5), 737-747. http://dx.doi.org/10.1016/j.psychsport.2013.05.002

Tee, E. Y. J., Ashkanasy, N. M., & Paulsen, N. (2013). The influence of follower mood on leader mood and task performance: An affective, follower-centric perspective of leadership. *The Leadership Quarterly, 24*, 496-515. http://dx.doi.org/10.1016/j.leaqua.2013.03.005

Timmerman, T. A. (2005). Missing persons in the study of groups. *Journal of Organizational Behavior*, *26*(1), 21–36. http://doi.org/10.1002/job.306

Troth, A. C., Lawrence, S. A., Jordan, P. J., & Ashkanasy, N. M. (2018). Interpersonal emotion regulation in the workplace: a conceptual and operational review and future research Agenda. *International Journal of Management Reviews*, *20*(2), 523-543. https://doi.org/10.1111/ijmr.12144

Tsai, W., Chi, N., Grandey, A., & Fung, S. (2012). Positive group affective tone and team creativity: Negative group affective tone and team trust as boundary conditions. *Journal of Organizational Behavior*, *33*(5), 638–656. http://dx.doi.org/10.1002/job.775

Van Kleef, G. A. (2009). How emotions regulate social life: The emotions as social information (EASI) model. *Current Directions in Psychological Science*, *18*(3), 184-188. https://doi.org/10.1111/j.1467-8721.2009.01633.x

Warr, P. B., Bindl, U., Parker, S. K., & Inceoglu, I. (2014). Job-related affects and behaviors: Activation as well as valence. *European Journal of Work and Organizational Psychology*, *23*(3), 342–363. http://doi.org/dx.doi.org/10.1080/1359432X.2012.744449

Watson, D., & Clark, L. A. (1992). On traits and temperament - General and specific factors of

emotional experience and their relation to the 5-factor model. *Journal of Personality*, *60*(2), 441–476. http://doi.org/10.1111/j.1467-6494.1992.tb00980.x

Webb, T. L., Totterdell, P., & Ibar, D. N. H. (2015). Foundations and extensions for the extended model: More on implicit and explicit forms of emotion regulation. *Psychological Inquiry*, *26*(1), 123-129. https://doi.org/10.1080/1047840X.2015.960040

West, M. A. (2002). Sparkling fountains or stagnant ponds: an integrative model of creativity and innovation implementation in work groups. *Applied Psychology: An International Review*, *51*, 3355–387. http://dx.doi.org/10.1111/1464-0597.00951

West, M. A., & Anderson, N. R. (1996). Innovation in top management teams. *Journal of Applied Psychology*, *81*(6), 680–693. http://dx.doi.org/10.1037/0021-9010.81.6.680

West, M. A. (2002). Sparkling fountains or stagnant ponds: an integrative model of creativity and innovation implementation in work groups. *Applied Psychology: An International Review*, *51*, 355–387. http://dx.doi.org/10.1111/1464-0597.00951

Table 1

Means, Standard Deviations, Correlations, and Reliabilities

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Team size	4.04	1.45	–								
2. Leader-member interaction frequency	2.40	1.16	.00	–							
3. Leader extraversion	3.83	0.57	-.01	-.18	**(.72)**						
4. Leader neuroticism	2.73	0.69	.18	.10	-.11	**(.66)**					
5. Leader affect-improving emotion regulation	3.50	0.69	.20	-.01	.06	-.21	**(.94)**				
6. Leader affect-worsening emotion regulation	1.58	0.41	-.16	-.06	.24	.10	-.47**	**(.85)**			
7. Team positive affective tone	3.79	0.43	.18	-.03	.13	-.11	.69**	-.17	**(.83)**		
8. Team negative affective tone	2.98	0.48	-.12	.07	-.02	.19	-.54**	.45**	-.60**	**(.86)**	
9. Team innovation	3.67	0.78	.35*	-.05	.34*	-.06	.56**	-.07	.59**	-.35*	**(.87)**

Note. $N = 45$. Reliabilities are displayed in parentheses on the diagonal. * $p < .05$. ** $p < .01$.

Table 2.

Regression Analyses for Leader Interpersonal Emotion Regulation, Team Affective Tone and Innovation (Hypotheses 1-2)

Variable	Model 1: Affect-Improving		Model 2: Affect-Worsening	
	Positive Affective Tone	Innovation	Negative Affective Tone	Innovation
Intercept	1.99 (.46)**	-1.52 (.97)**	1.86 (.42)**	4.68 (.85)**
Team size	.00 (.03)	.00 (.06)	.03 (.05)	-.01 (.08)
Leader-member interaction frequency	.02 (.04)	.16 (.08)*	-.03 (.06)	.23 (.10)*
Leader extraversion	.07 (.09)	.39 (.16)*		
Leader neuroticism			.11 (.10)	-.07 (.17)
Leader affect-improving regulation	.43 (.07)**	.31 (.17)		
Leader affect-worsening regulation			.51 (.17)**	.30 (.30)
Team positive affective tone		.58 (.28)*		
Team negative affective tone				-.60 (.26)*
F (df1, df2)	9.63 (4, 40)	8.62 (5, 39)	3.13 (4, 40)	2.49 (5, 39)
R^2 Model	.49**	.53**	.24*	.24*
Indirect effect (Bootstrap = 10000) [CI 95%]	.25 [.05, .53]*		-.31 [-.79, -.05]*	

Note. $N = 45$. Unstandardized estimates. * $p < .05$. ** $p < .01$.

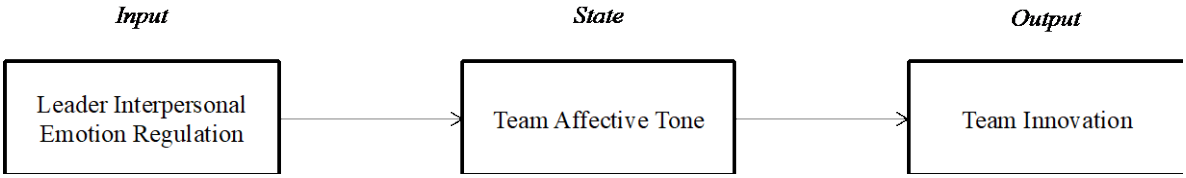

Figure 1. Theoretical Model for Leader Interpersonal Emotion Regulation, Team Affective Tone and Team Innovation

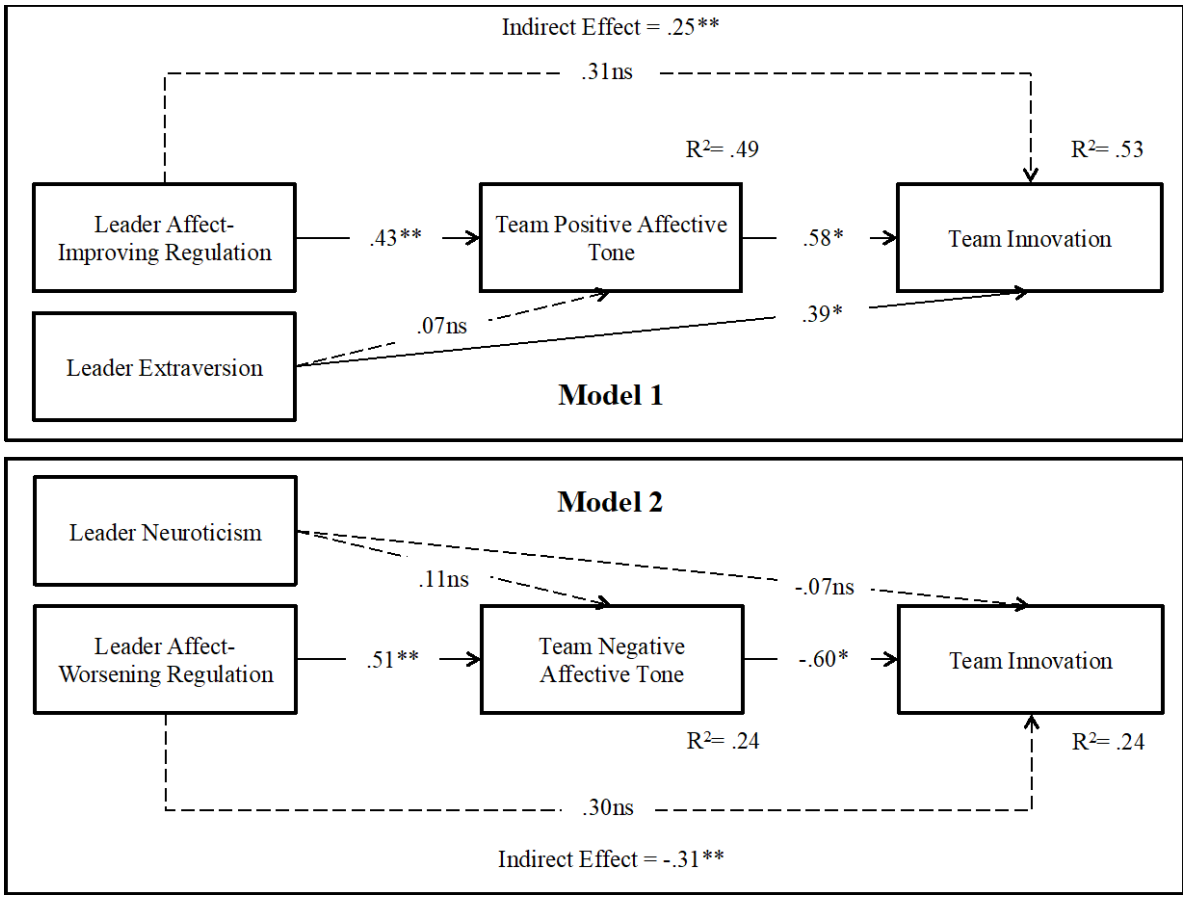

Figure 2. Path Analyses for Leader Interpersonal Emotion Regulation, Team Affective Tone and Team Innovation

APENDIX

Measures of Leader Interpersonal Emotion Regulation Utilized in the Study

To what extent does your leader use the following strategies to influence the way team members feel? (1: *not at all* – 5: *a great extent*):

Improving:

- Discusses team members' positive characteristics
- Shows him/herself as a nice person within the team
- Makes team members laugh
- Listens to team members' problems
- Gives team members helpful advice
- Spends time to listen team members

Worsening:

- Talks about team members' shortcomings
- Makes unpleasant comments within the team
- Acts annoyed towards team members
- Shows him/herself unfriendly towards team members
- Explains to team members how they had hurt him/herself
- Makes team members feel guilty
- Uses the cold shoulder within the team