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Explaining Affective Linkages in Teams: Individual Differences in Susceptibility to Contagion and Individualism–Collectivism

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To expand on the understanding of how affective states are linked within teams, the authors describe a longitudinal study examining the linkages between team members' affective states over time. In a naturalistic team performance setting, they found evidence that the average affective state of the other team members was related to an individual team member's affect over time, even after controlling for team performance. In addition, they found that these affective linkages were moderated by individual differences in susceptibility to emotional contagion and collectivistic tendencies such that the strength of the linkage was stronger for those high in susceptibility and those with collectivistic tendencies. Implications for research and practice are discussed.

Keywords: affect, emotion, teams, emotional contagion, collectivism

With the emergence of work teams over the past decades, considerable attention has been given to understanding the dynamics of team functioning. Despite the fact that George (1990) called attention to the importance of affect for group outcomes more than a decade and a half ago, team research has frequently emphasized cognitive processes (Ilgen, Hollenbeck, Johnson, & Jundt, 2005). More recently, scholars have begun to investigate affective processes in teams, with affective linkages between team members (i.e., the extent to which the affective states of team members covary; Totterdell, Kellett, Teuchmann, & Briner, 1998) assuming a prominent focus (Barsade, 2002; Totterdell, 2000; Totterdell et al., 1998). Such an interest in affective processes in teams parallels the renewed interest in emotions and affect elsewhere in organizational research (Barsade, Brief, & Spataro, 2003; Brief & Weiss, 2002).

In terms of affective linkages among team members, recent theoretical work has focused on identifying the processes through which team members' affect converges (Kelly & Barsade, 2001). Common experiences or events that similarly influence all team members' affect (e.g., successfully completing a task), behavioral entrainment (the coordination of behavior among team members; see Kelly & Barsade, 2001), and emotional contagion (the process through which a person "catches" another's emotions; see Hatfield, Cacioppo, & Rapson, 1994) have been proposed as mechanisms that explain interpersonal affective linkages among team members. Experimental work by Barsade (2002), along with naturalistic studies conducted by Totterdell and colleagues (Totterdell, 2000; Totterdell et al., 1998), has confirmed that such affective linkages indeed exist.

Besides examining general affective linkages among team members, Totterdell (2000) also proposed and found that basic individual differences in susceptibility to affective influences exist. In this study, however, Totterdell focused on the hedonic tone dimension of affect (he used a one-item, *unhappy–happy* scale). This leaves unanswered the question of whether differences in susceptibility to affective influences are general and apply to both positive and negative affective linkages. We build on Totterdell's research by first studying affective linkages for both positive and negative affective states in highly interdependent teams. We then examine individual differences in susceptibility to emotional contagion. Finally, we extend previous research by examining individualism–collectivism as a moderator of the strength of team members' affective linkages with their team.

To examine affective linkages among team members, we studied intact teams that had worked together in a naturalistic setting for several months with a longitudinal, repeated-measures design that allowed us to track variations in affect (at the individual and team level) over time. We then estimated moderated multilevel models in which stable characteristics of an individual team member influenced the strength of the dynamic (across time) affective linkage to the other team members.

Hypothesis Development

George (1990) found that the affective states generally experienced by group members were consistent within work groups and suggested that this consistency might be explained by attraction–selection–attrition (Schneider, 1987) and socialization. Such processes, however, do not address linkages among team members' momentary affect over time. That is, team members' momentary affective states are not independent from other team members' affect because affective states and experiences are shared with others within the team. This is particularly true in highly interdependent teams in which success or failure at the task is shared by all members of the team. Because members of interdependent

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teams work closely and share many of the same task elements (i.e., perform in the same task environment and have overlapping roles and goals), instances of frustration or difficulty could also influence the affective states of each of the team members. Such highly interdependent settings provide an ideal context for implicit and explicit affective transfer processes (Kelly & Barsade, 2001; Totterdell et al., 1998).

Implicit processes of affective influence include primitive emotional contagion (Hatfield et al., 1994) and behavioral entrainment (McGrath & Kelly, 1986). In particular, recent research suggests that "people are hard-wired to pick up emotional signals from others" (Côté, 2005, p. 515) and that individual behavior is influenced by this socially provided stimulus (Elfenbein, Marsh, & Ambady, 2002; Keltner & Kring, 1998). Indeed, there is empirical evidence supporting the transfer of moods in the laboratory (e.g., Sy, Côté, & Saavedra, 2005) and in the field (Totterdell, 2000; Totterdell et al., 1998; Tsai & Huang, 2002). Furthermore, previous work on emotional expressiveness suggests that individuals are more expressive when they are with others than when alone (Hess, Banse, & Kappas, 1995) and that teams interacting over extended periods of time have greater opportunities to experience mutual entrainment. On the basis of basic emotional contagion theory (Hatfield et al., 1994) and given the increased emotional expressiveness in social settings, as well as the experience of shared events in teams, we hypothesize that affective states are likely to converge among team members.

Explicit processes of affective influence include shared experiences that similarly influence team members' moods (Kelly & Barsade, 2001) as well as explicit influences such as affective impression management or intentional affective induction (Gibson & Schroeder, 1999). In particular, events occurring in the team context will have immediate affective consequences (Weiss & Cropanzano, 1996). For example, teams get a host of short- and long-term feedback about their performance. Feedback can be positive (e.g., the team performed above expectations) or negative (e.g., the team failed to meet goals). Because the feedback is provided at the team level, each team member receives identical feedback and is therefore likely to demonstrate an affective response similar to the other members of the team, thereby increasing the likelihood of affective convergence within teams.

Like Totterdell et al. (1998), we recognize that "interpersonal processes evolve over time and should therefore be studied over a period of time rather than in a brief encounter" (p. 1506). Furthermore, both inputs into such processes and the resulting affective states are transitory phenomena; therefore, the linkages between team members' affective states should be studied repeatedly as they occur, so that congruence is shown consistently. In short, we believe that a comprehensive analysis of intermember affective linkages in teams must necessarily take a dynamic approach by which affective states are assessed in the environment where they are experienced via repeated measures.

To summarize, there are conceptual reasons to expect that an individual team member's affective state will be influenced by the collective affective states of the other members of his or her team. The experience of common events, behavioral entrainment, intentional affective induction, and emotional contagion all suggest there will be such affective influences (Hatfield et al., 1994; Kelly & Barsade, 2001). Furthermore, there is emerging empirical evidence from both laboratory and field studies that supports the existence of affective linkages among team members (Barsade, 2002; Totterdell, 2000; Totterdell et al., 1998).

> *Hypothesis 1:* The average affective state of the team (excluding the individual team member) will be related to the affective state of that individual team member across time, such that (a) the level of positive affect of the team will be directly associated with the individual's level of positive affect and (b) the negative affect of the team will be directly associated with the individual's level of negative affect.

As indicated earlier, one mechanism that may explain the existence of affective linkages among team members is the process of emotional contagion, through which team members "catch" the emotional states of the other team members (Hatfield et al., 1994; Kelly & Barsade, 2001; Totterdell et al., 1998). If emotional contagion is responsible (at least in part) for the affective linkages among team members, it follows that individual differences in susceptibility to emotional contagion should moderate the strength of these affective linkages.

Susceptibility to others' emotions has been proposed as an individual difference that influences the extent to which "emotional stimuli elicit an emotional expression characteristic of the eliciting emotion" (Doherty, 1997, p. 134). Research on emotional contagion has shown that the influences of eliciting emotions range from cognitive to physiological and even behavioral outcomes (for a review, see Hatfield et al., 1994). Just as individuals are likely to display differences in their demonstration of empathy or the ability to perceive particular details of situations, individuals are likely to exhibit differences in the susceptibility to emotional contagion. At a basic psychological level, Doherty (1997) argued that a range of factors, including genetics, personality characteristics, gender, and early experience all contribute to individual differences in susceptibility to emotional contagion. It is thought that (a) individuals respond to a number of basic emotions, including happiness, love, fear, anger, and sadness in any number of physiological, cognitive, and behavioral ways and (b) the strength of these reactions differs from person to person.

These individual differences in susceptibility to emotional contagion influence the degree to which people are affected by the emotional expressions and affective states of other team members. If a team member is highly susceptible, he or she is likely to automatically and closely mimic the emotional expressions of others. In such situations, the affective state of a highly susceptible team member is likely to depend on the affective states and emotions that are being expressed in the team context.

> *Hypothesis 2:* Dispositional susceptibility to emotional contagion will moderate the strength of an individual's affective linkages to the other team members such that individuals high in susceptibility will show stronger linkages, compared to those lower in susceptibility.

Yet susceptibility to emotional contagion is not likely to be the only individual difference that will moderate the affective linkages in teams. Individual differences in individualistic–collectivistic tendencies are also likely to be important. Individualism is defined as the extent to which personal interests are given greater importance than the needs of the group. Collectivism, on the other hand,

is predominant when the demands and needs of the group take precedence over individual interests (Wagner, 1995; Wagner & Moch, 1986).

Two lines of reasoning suggest that the affective states of relatively collectivistic team members should be more strongly influenced by the affective states of the other team members, compared to their more individualistic counterparts. First, research on individualism and collectivism has shown that collectivism in small groups is related to the intensity of conformity within the group (Triandis, 1994). To the extent that individuals are more inclined to adhere or conform to explicit or implicit group norms, we would expect the individuals to conform, consciously or not, to the expressed emotions and affective states of members of their team.

Second, in his discussion of what makes people more susceptible to emotional contagion, Doherty (1997, p. 133) noted that those who "construe themselves as interrelated with others rather than independent and unique" are especially susceptible to contagion. Similarly, Hatfield et al. (1994) specifically noted that individuals are especially likely to mimic facial expressions and therefore catch the emotions of those for whom they care. They further suggested that individual differences in independent–interdependent self-construals, or the extent to which one construes oneself as independent or interdependent relative to others, are related to differences in emotional contagion susceptibilities. The term *collective* is used to describe the interdependent construal of the self (Markus & Kitayama, 1991) and is also naturally related to a collectivistic orientation. As Markus and Kitayama noted, "For those with interdependent construals of the self, both the expression and the experience of emotions and motives may be significantly shaped and governed by a consideration of the reactions of others" (1991, p. 225).

In sum, individuals with collectivistic tendencies are (a) more likely to adhere or conform to explicit or implicit group norms (Triandis, 1994), (b) have interdependent construals of the self (Markus & Kitayama, 1991), (c) construe themselves as interrelated with the other team members (Oyserman, Coon, & Kemmelmeier, 2002), and (d) care about the other team members (Wagner, 1995). Therefore, collectivistic team members should be more susceptible to affective influences from the other team members, compared to those with individualistic tendencies.

> *Hypothesis 3:* Individualism–collectivism will moderate the strength of the affective linkages between an individual and the other team members such that those high in collectivism will show stronger linkages to the other members of their team than will those high in individualism.

Method

Participants and Setting

The study was conducted in an experiential course setting at a large Midwestern university in which teams of students work together over the course of a semester in a senior-level management course. Participants were 201 undergraduate business students who formed 43 teams of 4–6 people across several sections. They had an average age of 21.5 years, and 60% were male. Each team was led by a student in the Master of Business Administration degree program (the leaders were not included in the present study). The course was designed to model the organizational context by allowing teams to experience all aspects of team formation, development, and performance across a semester.

To create a naturalistic environment that is similar to how teams are formed in organizations, we ensured that team leaders and team members were involved in selection and recruitment activities such as psychological testing, structured and unstructured interviewing, and active recruiting. To create the teams, the team leader used the selection information available for the team members (e.g., their test and interview scores) to rank order the individuals who were assigned to their sections. The selection process was structured so that each team member was selected by two leaders. Once these selections were made, team leaders actively recruited their top candidates. For their part, team members were allowed input into who their team leader would be, typically basing their decision on their experience with the leader in the interviews, the selection information provided by the leader, and the leader's recruiting efforts. Following this, the teams were created by taking into account the preferences of both leaders and team members. It should be noted that although the team members had input into which team they would be on, they did not have any input with respect to who the other members of their team would be.

Once formed, teams underwent training on the computer simulation used in the course and conducted team building exercises. Finally, teams competed with 12–15 other teams in 12 highly interactive team-based computer simulations across a span of 6 weeks. During the 30-min computer simulations, each team member controlled military assets positioned in one of four portions of the screen with the objective of keeping certain areas of the screen free from enemies. As team members often controlled unique assets and were pursuing a team-level goal, they were required to coordinate their actions in order to achieve their objective.

In the first week of class, we collected data on individualism–collectivism and emotional contagion. We measured all team members' affective states at the end of three different simulation sessions. The first state affect measure was taken 8 weeks after the initial survey, and the other two measurements of state affect were taken 10 and 13 weeks after the initial survey. We obtained 534 usable measures of state affect out of 603 potential responses, which is equivalent to a response rate across individuals and time of 88.6%.

Measures

State affect. To measure state affect, we used the Positive and Negative Affect Schedule (PANAS; Watson & Clark, 1994). The PANAS presents participants with a list of 20 adjective descriptors of affect. Sample adjective descriptors from the positive scale are "interested," "enthusiastic," and "determined." Sample adjectives from the negative scale are "upset," "irritable," and "hostile." Team members were asked to indicate the extent to which the adjectives described their affective state at the time they were taking the survey. Responses were given on a scale ranging from 1 = *very slightly or not at all* to 5 = *extremely*. The average internal consistency reliability of the affect scores across the three measurements was .92 for positive affect and .84 for negative affect.

Susceptibility to emotional contagion. Individual differences in susceptibility to emotional contagion were measured using Doherty's (1997) Emotional Contagion Scale. The scale's convergent validity has been illustrated through its relationships to sensitivity to others, emotionality, and emotional empathy (Doherty, 1997). In addition, a slightly different scale has been used to illustrate that the strength of one's susceptibility to emotional contagion strengthens the associations between an individual's mood and the moods of the other teammates (Totterdell, 2000). Furthermore, the discriminant validity of the measure is evident in Doherty's (1997) validation study, as the measure shows no correlation to constructs that hold no theoretical relationship to the construct. The Emotional Contagion Scale presents subjects with 15 items and asks them to rate how often the statements apply to them, scored from 1 = *never* to 5 = *always*. Sample items include "I tense when overhearing an angry quarrel" and "Being with a happy person picks me up when I'm feeling down." Internal consistency reliability was .84.

Individualism–collectivism. The extent to which participants had individualistic or collectivistic tendencies was measured using three items taken from Wagner (1995): "I prefer to work with others in a group rather than working alone," "Given the choice, I would rather do a job where I can work alone rather than doing a job where I have to work with others in a group" (reverse scored), and "Working with a group is better than working alone." Responses were given on a scale from 1 = *strongly disagree* to 5 = *strongly agree*, where higher values indicate collectivistic tendencies. The internal consistency reliability of the measure was .88.

Team performance. Each team's performance on each of the simulations was measured with two objective performance scores (number of successful attacks and success at keeping enemies out of defined restricted areas) provided by the simulation software. Because these scores were not comparable across simulations or cohorts, we rank ordered teams within each cohort (semester) and simulation, providing a comparative measure of team performance.

Results

Table 1 presents the interindividual correlations among the variables measured in this study. Because of the nature of the research questions and the data (nested within individuals and teams), and to address the hypothesized cross-level moderating effects, we used a hierarchical linear modeling (HLM) framework. HLM is appropriate in this situation because it enables an examination of how affective states fluctuate within people and within teams over time. The HLM approach also allows us to account for nonindependence of multiple measures from each individual and team. In testing the within-individual (team) hypotheses, we centered the predictor scores in HLM analyses (i.e., at Level 1) at the individuals' means to remove between-individual variance in these scores, thereby providing a more stringent test of our hypotheses (Hofmann, Griffin, & Gavin, 2000).

Before conducting multilevel analyses, we examined whether individuals' state affect scores varied substantially within, as well as between, people. We created null models for both positive affect (PA) and negative affect (NA), which partitioned the total variance into within- and between-individual variance. These models revealed that 49.9% of the total variance in PA and 49.4% of the variance in NA was due to within-individual variation.

To test the affective linkage hypothesis (Hypothesis 1), we first computed a team affect score by averaging the affective states of the team members, except the team member whose state affect was analyzed as the outcome. The averages for the measures of intrateam reliability (Intraclass Correlation Coefficient 1 [ICC1]) for PA and NA were .20 and .19 respectively. Analyses of these values indicate that four of the six ICC1 values were statistically significant ($p < .05$), with the other two coefficients approaching significance ($p = .051$ and $p = .069$). The averages for the measures of group-mean reliability (ICC2) across the three measures of PA and NA were .49 and .46, respectively. Following George (1990; George & James, 1993), we suspected that restricted between-group variance in affect was responsible for the somewhat low ICC2 values. Therefore, we set out to determine if there was a reasonable level of agreement within teams by computing an index of interrater agreement (r_{wg}; James, Demaree, & Wolf, 1993). The average median r_{wg} across the three time periods was $r_{wg} = .96$ for PA and $r_{wg} = .93$ for NA. These results show that there was a high level of agreement within teams. Although the focus of this study was not on team affect, these results suggest that momentary affect can be conceptualized at the team level.

Second, within a three-level modeling framework (Level 1 = occasion by individual, Level 2 = individual, Level 3 = team) we regressed individual state affect scores on the team-level affect scores at Level 1 in HLM (across the three measurement occa-

Table 1
Means, Standard Deviations, and Interindividual Correlations

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Average positive affect	3.88	0.59	—						
2. Average negative affect	1.66	0.52	−.15*	—					
3. Average other positive affect	3.88	0.38	.25**	−.11	—				
4. Average other negative affect	1.65	0.31	−.09	.25**	−.33**	—			
5. Susceptibility to emotional contagion	3.25	0.50	.10	.09	−.02	.09	—		
6. Individualism–collectivism	3.32	0.73	.12	.18*	.05	.05	.14	—	
7. Team performance[a]	8.33	3.45	.18**	.01	.32**	−.06	−.14*	.04	—

Note. $N = 201$.
[a] The performance score measures a team-level variable; therefore, all members of a specific team have the same score for this variable.
* $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 2
HLM Results Testing the Intraindividual and Cross-Level Interaction Effects on Positive and Negative Affect

Criterion	Positive affect	*t*	Negative affect	*t*
Main effects model[a,b]				
Intercept (baseline β_0)	3.88	75.86**	1.65	36.99**
Other team members PA (baseline β_1)	0.45	4.38**		
Other team members NA (baseline β_1)			0.54	7.22**
Moderated effects model[c]				
Susceptibility to emotional contagion effect on:				
β_0	0.13	1.60	0.06	1.04
β_1	0.32	2.09*	0.26	2.65**
Individualism–collectivism effect on:				
β_0	0.07	1.39	0.12	2.43**
β_1	0.18	1.72*	0.38	5.15**

Note. $N = 201$ individuals who provided 534 data points. Level 1 predictor scores were centered at the individuals' means to eliminate between-individual variance. The main effects model controlled for team performance. HLM = hierarchical linear modeling; PA = positive affect; NA = negative affect. β = unstandardized first level regression coefficients (the standardized values for the main effects are $\beta_1^* = .43$ for PA and $\beta_1^* = .50$ for NA).
* $p < .05$, one-tailed. ** $p < .01$, one-tailed.
[a] $df = 525$ for main-effect models including PA. [b] $df = 523$ for main-effect models including NA. [c] $df = 196$ for moderating-effects models.

sions; there were no Level 2 or 3 predictors).[1] Again, we centered the Level 1 predictor scores relative to the mean score for each individual (computed across the three occasions). Therefore, for each individual, the predictor scores represented departures from the mean, and the mean of these departure scores for each individual was zero. Because there was no between-individual variance in the centered scores (i.e., the between-individual variance represents variation in individuals' means, and all means were zero), the estimates from the Level 1 HLM regressions represent within-individual effects (in effect controlling for the between-individual and between-team differences). We performed these analyses for both PA and NA for each member of each team. In these analyses we controlled for team performance because performance scores influenced team members' PA over time (standardized $\beta = .29$, $p < .01$; the effect on NA was weak: standardized $\beta = -.12$, $p < .10$). This is an important control because, as we explained in the introduction, shared events and experiences may explain affective linkages between team members due to their similar effects on individual team members' affective states (see Totterdell et al., 1998); therefore, team performance may be responsible for the affective linkages among team members.

Results show that individuals' PA scores were predicted by the average PA of the other team members (standardized $\beta = .43$, $p < .01$; see Table 2), controlling for team performance. As expected, the link was stronger when performance was not included as a control (standardized $\beta = .47$, $p < .01$), suggesting that performance scores account for some, but not all, of the affective linkage effects. In addition, individuals' NA scores were predicted by the other team members' NA (standardized $\beta = .50$, $p < .01$). These results provide strong support for our first hypothesis.

In addition to the main effect of team members' affective state on the individual's affective state, we also expected individual susceptibility to emotional contagion (Hypothesis 2) and individual collectivistic tendencies (Hypothesis 3) to moderate the strength of the affective linkages. To test these cross-level effects we estimated three-level models that had the same Level 1 structure as those used to test Hypothesis 1 (described above). At Level 2, we included the hypothesized moderator scores as predictors of both the intercept and the slope from the Level 1 regressions. The HLM results show that the emotional contagion score indeed moderates the transfer of both PA ($\beta = .32$; standardized $\beta = .15$, $p < .05$) and NA ($\beta = .26$; standardized $\beta = .12$, $p < .01$), offering support for Hypothesis 2.[2]

In support of Hypothesis 3, results show that individuals' collectivistic tendencies were robust predictors of the strength of affective transfer for both PA ($\beta = .18$; standardized $\beta = .13$, $p < .05$) and NA ($\beta = .38$; standardized $\beta = .26$, $p < .01$). These results are summarized in Table 2, and the interactions are illustrated graphically in Figure 1 and Figure 2. The interaction plots show the nature of the moderating effects. For example, the plot illustrating the interactive effect of individualism–collectivism and team members' NA on individual NA shows that both individualists and collectivists experienced low levels of NA when their team members reported collectively low NA. When team members reported high NA, both individualists and collectivists reported increased NA; however, the NA score reported by collectivistic team members was much higher than the score reported by their individualistic counterparts.

[1] The Level 1 HLM analyses are similar to regression analyses performed on stacked data (e.g., the data file has a number of records equal to N = number of individuals × 3 occasions).

[2] For a cross-level moderating effect, the "standardized" regression coefficient estimates the change in the strength of the intraindividual effect, in standardized points, associated with a one standard deviation increase in the moderator score (Judge & Ilies, 2004).

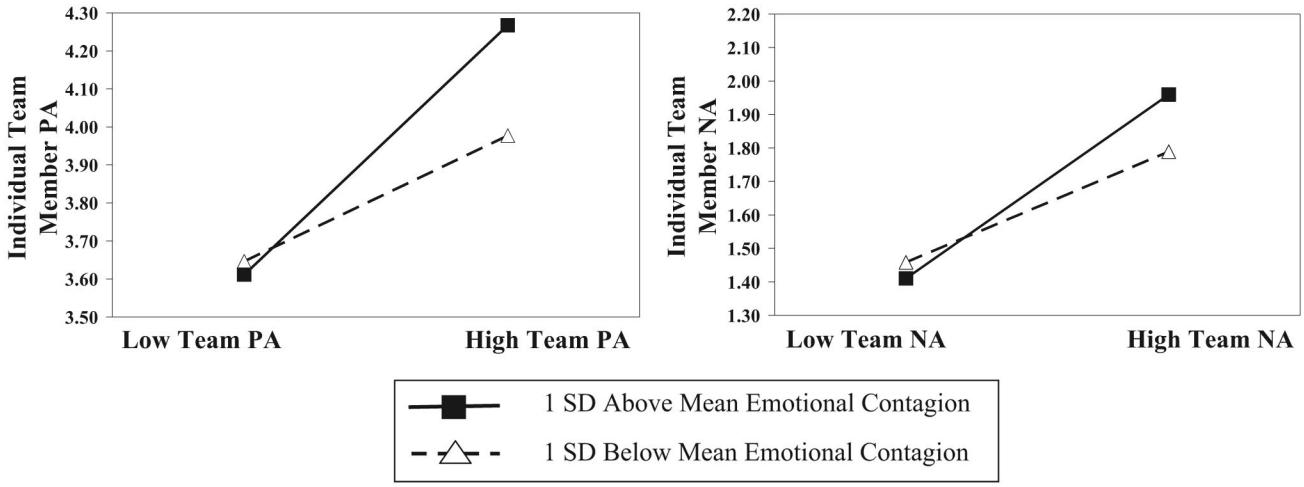

Figure 1. The moderating role of individual team members' dispositional sensitivity to emotional contagion on the affective linkages within teams. NA = negative affect; PA = positive affect.

Discussion

The findings reported in this article offer strong support for the existence of affective linkages in teams. The results clearly show that the average affective state of the other team members was related to an individual team member's affective state, for both positive and negative affect. It is important to note that these results were obtained in intraindividual analyses, which eliminates concerns that the results may be influenced by differences in baseline or dispositional affect. Furthermore, the results supporting the existence of affective linkages were obtained after controlling for team performance (which did influence team members' affective states over time), thus reducing the possibility that shared experiences caused these affective linkages.

We also found strong support for the hypothesis that those team members who are higher in susceptibility to emotional contagion will show stronger affective linkages to other team members, compared to those lower in susceptibility. Perhaps most important, our results show that team members who are more collectivistic in nature are more susceptible to affective influences from the other team members, compared to those who are more individualistic. We believe this is an important contribution to the literature streams on affect in teams and on individual differences in individualism–collectivism.

Implications for Future Research

Although Kelly and Barsade (2001) explained that individuals differ "in the degree to which they are good receivers of emotion" (p. 107), these authors did not elaborate on the personal characteristics that might influence the strength of individuals' affective connection with their team members. Following Hatfield et al. (1994) and Doherty (1997), we found that individuals' dispositional susceptibility to emotional contagion indeed moderates the

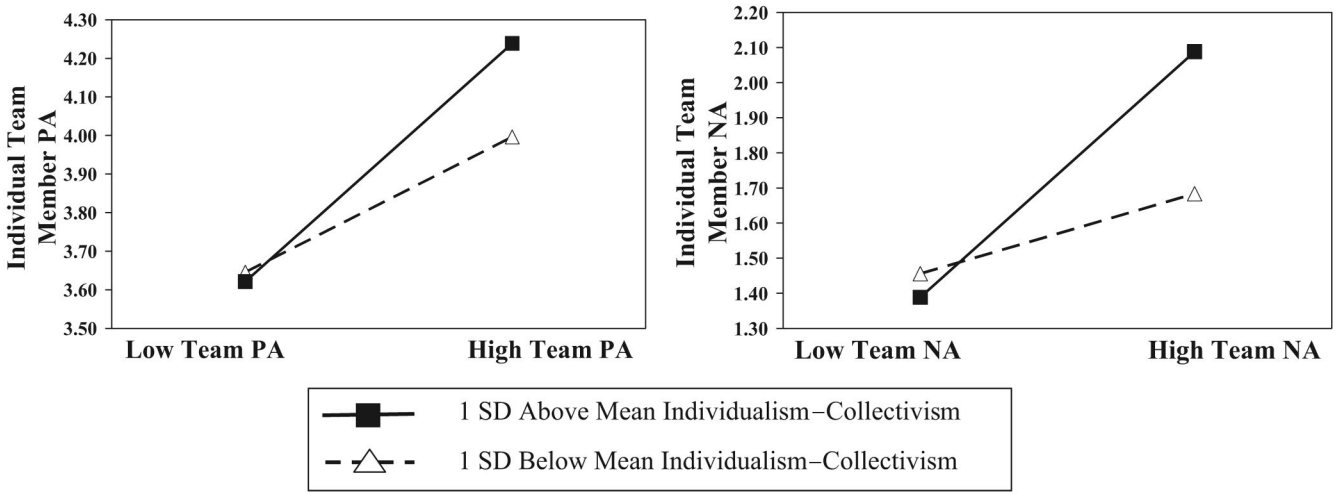

Figure 2. The moderating role of individual team members' collectivistic tendencies on the affective linkages within teams. NA = negative affect; PA = positive affect.

strength of the affective linkages to the other team members, which suggests that basic emotional contagion is responsible, at least in part, for these links. In light of these results, evaluating the relative contribution of basic emotional contagion and other more explicit affective influence processes may be a fruitful area for future research.

Perhaps most important, this study further contributes to the literature on affective linkages in teams by integrating individualism–collectivism—a construct highly relevant to how individuals operate in teams—within a model of affective transfer in teams. Additionally, whereas previous research on individualism–collectivism in teams has examined attitudinal and behavioral outcomes such as loyalty and cohesiveness (e.g., Man & Lam, 2003; Ramamoorthy & Flood, 2004) or prosocial–cooperative behavior (e.g., Ramamoorthy & Flood, 2004; Wagner, 1995), this study is the first examination of collectivism in small teams that considers an affective process. Furthermore, even though individualism–collectivism has been proposed to influence emotional display rules (e.g., Matsumoto, 1990), we are not aware of any research linking individual differences in individualism–collectivism to affective influence processes. Therefore, we believe the results of this examination are important because they suggest that the implications of individualism–collectivism in work teams extend beyond choice and cognitive evaluations to affective, and perhaps to subconscious, processes such as emotional contagion.

Contribution to Theory

First, this study has important implications for theories considering the impact of affect and emotions on behavior at work. Affective events theory (Weiss & Cropanzano, 1996) specifies an affective causal chain through which events at work influence behavior and attitudes: Affective events produce immediate affective responses, which in turn influence episodic behavior and job attitudes. Within this theoretical model, however, the affective processes influencing employees' behavior and attitudes are conceptualized as being distinct from similar processes operating within other employees. The present findings suggest that affective events can have indirect effects on employees' behavior through affective transfer and that affective events theory can and should be extended to include interpersonal processes (e.g., mood transfer or induction; Totterdell et al., 1998) in an attempt to explain affective linkages such as those documented in the present research. Furthermore, our findings should stimulate future research examining affective linkages in other interpersonal settings at work (e.g., negotiations, leader–member exchanges) and the implications of such linkages for decisions and different types of behavior. For example, Bies, Tripp, and Kramer (1997) pointed out that an individual's resolve to take revenge is often strengthened when that individual publicly ruminates about the offense, thereby leading to enhanced negative effects of injustice.[3]

Second, this study advances basic theory on mood linkages (Totterdell et al., 1998) and emotional contagion (Hatfield et al., 1994) by examining the links between the collective affective state of several team members and the affective state of an individual in the team. The finding that collectivism foments stronger affective links is especially relevant, because it suggests that affective linkage processes may reinforce collectivistic orientation in groups or societies predisposed as such (i.e., members of such groups experience converging affective states, which further influences them to feel connected to each other and interdependent). On this point, research examining linkages between distinct emotional states (rather than focusing on broad categories) has the potential to uncover whether ego- versus other-focused emotions (e.g., anger or pride vs. sympathy or guilt) are linked differentially among those with self-construals that are independent or interdependent. Documenting such differences would be an important contribution to the literature on emotional and motivational implications of self-construals (Markus & Kitayama, 1991).

Related to this, as in most other research that has investigated affect at work, in this study we assessed affect at a broad level (i.e., positive and negative affect). Yet it would be interesting to examine the extent to which more specific emotions, such as frustration or enthusiasm, are also linked. It is an open question as to whether specific emotions are also linked or whether it is only the general affective state (i.e., PA or NA) that is linked. Future research should investigate the extent to which specific emotions versus general affective states are linked within teams.

Limitations and Strengths

This study is not without limitations. First, the participants were senior-level college students, and therefore any generalization of the theory developed and supported in this study should be carried out with this limitation in mind. However, performance on the team simulation comprised a significant portion of the students' course grade and was therefore highly motivating. Thus we feel that the theory presented and developed in this article is likely to have implications for teams in work settings.

Second, although the ICC1 values were reasonably high, the ICC2 values might be considered somewhat low. This pattern of results suggests that there was restricted between-team variance in affect scores. It is important to recognize, however, that within-team agreement is not conditional on between-team differences (George & James, 1993). Indeed, there was a high level of within-team agreement (r_{wg}) in ratings of team affect. In addition, because we did not use between-team variance in estimating the multilevel models, our results were not affected by the restricted between-team variability in mean affect scores. Finally, participants in our sample were all business majors and, as pointed out by an anonymous reviewer, they may have had interaction with one another outside of, and prior to, their team interactions examined in this study. Such prior relationships may have enhanced the likelihood for affective convergence. Although we do not have information about such prior associations among students, this concern should be somewhat reduced by the fact that individuals were required to join teams in their specific section and had limited input into who their fellow team members would be. This limits the possibility of self-selection based on prior acquaintanceship.

The limitations of the study should be considered in light of its strengths. First, the study was conducted in a naturalistic

[3] We thank an anonymous reviewer for suggesting this line of thought, and we also point out that the occurrence of positive experiences and subsequent emotions could also be shared and strengthened in a fashion similar to the effects of rumination on thoughts of revenge.

setting with highly interdependent, persisting teams, closely simulating working relationships that occur in teams within actual organizations. Second, to examine affective linkages between team members, we took measures of team affect and individual team member affect from different sources (other team members vs. self), thus eliminating the potential for same-source bias. Third, complementing cross-sectional studies that can examine only between-individual or between-team differences in affect (e.g., George, 1990), our results showed that team members' affective states fluctuate over performance occasions (episodes) and that team affect predicts individual team member affect across occasions.

Conclusion

Despite the long history of research on teams, and the increasing popularity of the study of affect in the organizational field, little research has integrated the two streams of research to examine affective linkages in teams as they unfold over time. This study addresses this gap in the literature by using the theoretical model proposed by Kelly and Barsade (2001) and basic theory on emotional contagion (Hatfield et al., 1994) to further illuminate our understanding of affective experiences in teams. Our results strongly support the existence of affective linkages between team members with respect to both positive and negative affect. Furthermore, the data support the hypothesized moderating effects of individuals' emotional contagion susceptibility and their collectivistic tendencies on the strength of their affective linkages with the other team members.

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