Organizational Behavior and Human Decision Processes 122 (2013) 127–140

Contents lists available at SciVerse ScienceDirect

Organizational Behavior and Human Decision Processes

journal homepage: www.elsevier.com/locate/obhdp

Preface

Contagious leaders and followers: Exploring multi-stage mood contagion in a leader activation and member propagation (LAMP) model

Thomas Sy [a,*], Jin Nam Choi [b]

[a] Department of Psychology, University of California, Riverside, 900 University Ave., Riverside, CA 92521, United States
[b] College of Business Administration, Seoul National University, 599 Gwanangno, Gwanak-gu, Seoul 151-916, South Korea

ARTICLE INFO

Article history:
Received 31 May 2011
Accepted 7 June 2013

Accepted by Richard Moreland

Keywords:
Group affect
Mood convergence
Extroversion
Neuroticism
Emotion contagion
Leadership
Group processes

ABSTRACT

A theoretical framework is offered to explain mood contagion processes in groups. Specifically, we describe and test a two-stage leader activation and member propagation (LAMP) model that starts with the activation of the contagion process by leaders (Stage 1), followed by the mutual propagation of the mood among members (Stage 2). Results from 102 self-managing groups provide support for the LAMP model. Group mood convergence was negatively related to attribute diversity (in extroversion and neuroticism) between the leader and group members (Stage 1) and among group members (Stage 2). In both stages, group members' susceptibility to emotional contagion and interpersonal attraction had positive main effects on group mood convergence, and moderated the relationship between attribute diversity and mood convergence in groups. The findings offer new insights into group mood convergence, as it unfolds over time.

Published by Elsevier Inc.

Introduction

Moods are contagious. Researchers have extended this phenomenon beyond the individual or dyad level, and found evidence of mood convergence at the group level in various settings, establishing it as a collective phenomenon (e.g., Barsade, 2002; Bartel & Saavedra, 2000; Ilies, Wagner, & Morgeson, 2007; Totterdell, 2000). Prior studies have also revealed the potent implications of shared group affect; positive group mood enhances coordination, citizenship behaviors, and group performance, whereas negative group mood promotes members' dysfunctional behavior, group conflict, and risk-averse decision making (e.g., Cole, Walter, & Bruch, 2008; George, 1995; Parkinson & Simons, 2009; Sy, Cote, & Saavedra, 2005). Although group mood has significant consequences for group processes and outcomes, research has seldom examined the causes or contingency factors that account for the emergence and convergence of mood in groups. The present study explores (1) the *causes* and *moderators* of group mood convergence, and (2) the *unfolding process* of mood contagion in groups.

Existing studies of mood convergence have been conducted mostly at the individual level, identifying perceptual processes (e.g., attention), personality variables (e.g., empathy), or values (e.g., collectivism) as predictors of mood convergence (Gump & Kulik, 1997; Hatfield, Cacioppo, & Rapson, 1994; Ilies et al., 2007). At the group level, however, investigations of the processes that generate and maintain group-level shared moods are rare. In this study, we propose and test a two-stage model of group mood convergence (see Fig. 1) in which a leader's mood serves as the spark that activates the contagion process (Stage 1), from which the mood is subsequently propagated among group members (Stage 2). We identify group leaders as the most likely source of group moods because leaders (1) occupy more powerful, salient, and central positions within groups (Anderson, Keltner, & John, 2003), (2) have unique affective behavioral patterns distinguishable from other members (Magee & Galinsky, 2008), and (3) play a significant role in developing shared perceptual structures in groups (Kozlowski, Gully, McHugh, Salas, & Cannon-Bowers, 1996).

The process of mood contagion leading to mood convergence in groups can be explained by the characteristics of the source of the mood (leader), its recipients (members), and the relationship between the source and the recipients. In this study, we examined the characteristics of leaders and members that have direct implications for mood contagion. Specifically, we focused on the personality dimensions of extroversion and neuroticism, which can both influence affective exchanges and outcomes in groups (Barsade, Ward, Turner, & Sonnenfeld, 2000; George, 1996; Watson, 2000; Watson & Clark, 1992). Within the framework of the two-stage model, in the first stage of leader activation, the similarity or dissimilarity between leader and members' extroversion and

* Corresponding author. Fax: +1 (951) 827 3985.
E-mail addresses: thomas.sy@ucr.edu (T. Sy), jnchoi@snu.kr (J.N. Choi).

0749-5978/$ - see front matter Published by Elsevier Inc.
http://dx.doi.org/10.1016/j.obhdp.2013.06.003

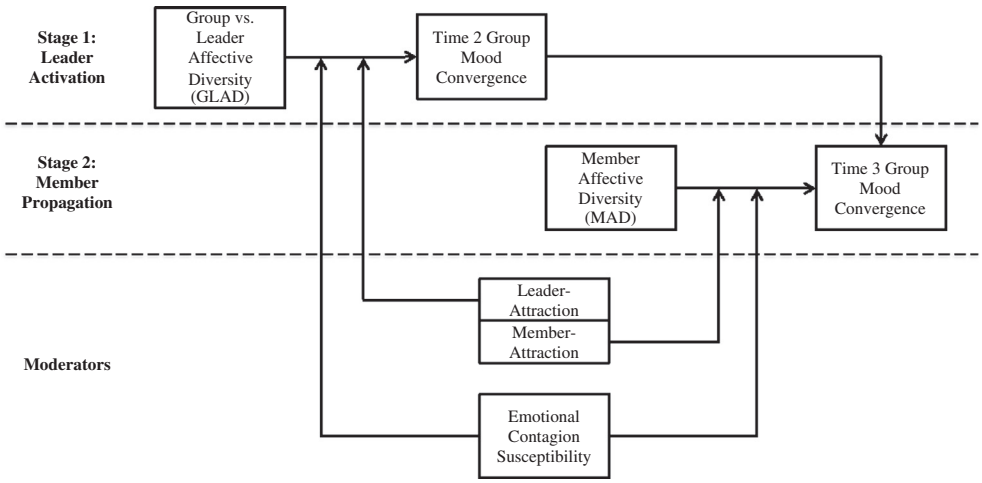

Fig. 1. Leader activation–member propagation (LAMP) model of group mood convergence.

neuroticism (i.e., attribute diversity) emerges as a significant determinant of group mood convergence. Likewise, in the second stage of member propagation, attribute diversity among members plays a significant role in explaining group mood convergence.

In addition, we attend to a recipient characteristic (susceptibility to emotional contagion), as well as the relationship between the source and the recipients (interpersonal attraction between the leader and members at Stage 1, and interpersonal attraction among members at Stage 2) as predictors of group mood convergence at both Stages 1 and 2. Extending individual-level studies (Bono & Ilies, 2006; Doherty, 1997; Hatfield et al., 1994; Johnson, 2008), we submit that susceptibility to emotional contagion and interpersonal attraction promote group mood convergence directly and also moderate the relationship between attribute diversity and group mood convergence. We also explore the boundary conditions of the attribute diversity–mood convergence relationship, as it unfolds over time.

Conceptual framework of group mood convergence

The moods of group members converge through the mechanism of mood contagion. This process has two phases (Hatfield et al., 1994; Neumann & Strack, 2000). In the first phase, group members unintentionally mimic the public displays of mood by others (e.g., facial, postural, or vocal mimicry). In the second phase, afferent feedback from mimicry produces a corresponding mood response. Group mood convergence is an intermediate outcome of mood contagion that reflects the consistency of mood reactions within a group (Bartel & Saavedra, 2000), which in turn forms the group's affective tone (George, 1990).

Leader activation–member propagation (LAMP) model

Leadership theorists (e.g., Bass, 1985; House, 1977; Weber, 1920) have long posited that leaders are a key source of followers' affect. Affect is an inherent part of the leadership process (Dasborough, 2006); leaders activate and regulate follower mood because a primary function of mood is the coordination of social interactions and mutual understanding, which are critical for the groups' response to opportunities and threats (Kozlowski et al., 1996). Leaders serve as a primary source of affective events (for further discussion on Affective Events Theory, see Weiss & Cropanzano, 1996), which subsequently influence the affect, beliefs, and behavior of followers (Damen, van Knippenberg, & van Knippenberg, 2008; Johnson, 2008). Indeed, there is emerging evidence that individuals of high power and status dictate the mood of followers and groups (Bono & Ilies, 2006; Erez, Misangyi, Johnson, LePine, & Halverson, 2008; Sy et al., 2005).[1]

Leaders are most likely a key source of mood contagion because they and their moods are highly salient (Magee & Galinsky, 2008; Moreland & Levine, 1992; Moreland, Levine, & Wingert, 1996). Salience is a necessary requirement of mood contagion because one's mood must be detectable by others for contagion to take place (Hatfield et al., 1994). Furthermore, because of the power dynamics that exist in groups, leaders have more opportunities to express mood and thus activate mood contagion (Butt & Choi, 2010; Sy et al., 2005). Social psychological studies have consistently demonstrated that high-power individuals tend to publicly display their own attitudes and show less perspective-taking and compassion than are shown by others (Guinote, 2007). In contrast, group members have a heightened interest in and awareness of the mood of leaders and are apt to mimic their behavior (Keltner & Robinson, 1997), because doing so facilitates social integration that leads to such benefits as the status and privileges accorded to ingroup members (Kelly & Barsade, 2001). Group members readily attend to affective displays by leaders, and more often catch the mood of leaders than vice versa (Anderson et al., 2003; Lewis, 2000). All of these leader–member dynamics create the perfect conditions for leaders to be the senders and followers to be the receivers of mood in the mood contagion process (Erez et al., 2008).

Once mood contagion has been activated by leaders (Stage 1), we propose that group members propagate the spread of the mood among themselves through their interactions (Stage 2) (Bartel & Saavedra, 2000; Ilies et al., 2007; Totterdell, 2000). Mood may propagate exponentially during this stage (versus Stage 1) because of the increased exposure to affective events (Weiss & Cropanzano, 1996) and the secondary and tertiary sharing of moods (Hareli & Rafaeli, 2008), which differentiates group-level from dyadic-level mood contagion (Moreland, 2010). In particular, each group member interacts with others to create affective events, and the degree of contagion corresponds directly to the increase in the number of group members and the interactions among them (Latane, 1981).

[1] We are unaware of any empirical research demonstrating the flow of contagion from followers to leaders. One laboratory simulation (Hsee, Hatfield, Carlson, & Chemtob, 1990) found that teachers (powerful individuals) are susceptible to students' affect. However, these results are likely reflections of teacher–student relationship contexts and dynamics (teachers are expected to care and empathize more with their students' welfare than the inverse). In comparison, teacher–student relationship contexts and dynamics differ significantly from those of leader–follower contexts. Ordinarily, followers are likely to have a heightened interest in and awareness of leaders' mood. Accordingly, we posit that mood contagion should flow from leaders (more powerful individuals) to followers.

This process has been compared to the rapid and expansive spread of "wildfires" (Saavedra, 2008) because an intense affective episode can spread to more than 50 members of a social network within just a few hours (Rimé, 2007).

Group diversity and group mood convergence

Group composition, defined as the configuration of attributes of group members (Moreland & Levine, 1992; Moreland & Levine, 2003), is an influential force shaping group processes and outcomes (Levine, Moreland, & Hausmann, 2005). We focused on the deep-level attributes (Bell, 2007) of extroversion and neuroticism because of their demonstrated importance and impact on leadership and group effectiveness (Halfhill, Sundstrom, Lahner, Calderone, & Nielsen, 2005; Judge, Bono, Ilies, & Gerhardt, 2002). They are particularly pertinent in the present context of group mood convergence because numerous studies have demonstrated the strong association of extroversion and neuroticism with positive and negative affect, respectively (Watson, 2000).[2] Accordingly, we propose that group composition based on these affectively laden attributes may shape the affect-related exchanges between the transmitter and the receiver of mood in groups.

We investigate the effects of group diversity on mood contagion within the framework of the LAMP model. In the first stage of the LAMP model (leader activation), we focus on the diversity between group members and their leaders (i.e., Group versus Leader Attribute Diversity or GLAD). In the second stage of the LAMP model (member propagation), we focus on the diversity among members of the same group (i.e., Member versus Member Attribute Diversity or MAD). We propose that attribute diversity in extroversion and neuroticism is negatively related to group mood convergence. First, identifying and interpreting the mood information displayed by dissimilar others, in comparison to similar others, may be more difficult, which impedes the mimicry that is required for mood contagion to occur (Elfenbein & Ambady, 2003; Papousek, Freudenthaler, & Schulter, 2008). Second, individuals empathize more with similar others (Batson, Turk, Shaw, & Klein, 1995), and empathy promotes mood contagion (Hatfield et al., 1994). Group members are more affectively reactive and thus should be more apt to converge affectively when group members possess more similar attributes, such as extroversion and neuroticism (Larsen & Ketelaar, 1991). Third, research suggests that similar others may converge in their appraisals of affective events over time (Anderson et al., 2003), which in turn leads to greater similarity in affective reactions and mood experiences. Therefore, we hypothesize the following:

Hypothesis 1a. Group-leader attribute diversity (GLAD) in extroversion and neuroticism is negatively related to group mood convergence.

Hypothesis 1b. Member attribute diversity (MAD) in extroversion and neuroticism is negatively related to group mood convergence.

Main and moderating effects of susceptibility to emotional contagion

Mood contagion is the mechanism through which the moods of group members converge. Mood convergence is thus most likely affected by the proclivity of members to emotional processes. *Susceptibility to emotional contagion* (hereafter, *EC susceptibility*) refers to individual differences in the tendency to automatically mimic and subsequently catch others' emotions because of the afferent feedback provided by facial and skeletal muscular activity (Doherty, 1997). Like attribute diversity, we posit that EC susceptibility is a group composition variable (Moreland & Levine, 1992; Moreland & Levine, 2003) that can influence the mood contagion process. Given that EC susceptibility is an individual disposition, we do not expect group members to share a similar level of EC susceptibility. Instead, consistent with previous studies that aggregate various individual-level factors (e.g., personality, values, attitudes) to the group level to account for group-level dynamics (Bell, 2007; Chang, Sy, & Choi, 2012), we propose a summative model of EC susceptibility composition. Such a model assesses the aggregate or overall amount of a personal property held by members regardless of variation among them (Chan, 1998).

Group mood convergence is more likely when a group is composed of members with naturally high proclivities to automatically mimic others' emotional expressions (Neumann & Strack, 2000). Members with high EC susceptibility are better at communicating their affect and deciphering others' affect (Doherty, Orimoto, Singelis, Hatfield, & Hebb, 1995), which facilitates group mood contagion. Thus, in groups with members who have high EC susceptibility, a double-feedback loop process may operate whereby members reciprocally influence and are influenced by others' affective reactions (Hareli & Rafaeli, 2008). In contrast, groups whose members have low EC susceptibility are less able to communicate and decipher affective reactions, rendering them impervious or more immune to mood contagion.

Hypothesis 2. Group members' emotional contagion (EC) susceptibility is positively related to group mood convergence.

In addition to its main effect, we advance that EC susceptibility moderates the relationship between attribute diversity in extroversion or neuroticism and group mood convergence. As noted, the key mechanism in the mood contagion process is the mimicry of others' affective expressions, such that more mimicry leads to greater contagion (Hatfield et al., 1994). Attribute diversity and EC susceptibility may interact to influence the degree of mimicry among group members. First, mimicry will be low anyway in groups with more attribute diversity, because the members of such groups will have greater difficulty in deciphering the affective expressions of dissimilar others (i.e., individuals cannot mimic what they cannot decipher) (Elfenbein & Ambady, 2003). Second, mimicry may be further suppressed when group members are also naturally immune or less susceptible to the moods of others (i.e., low on EC susceptibility). Accordingly, mimicry (and thus group mood convergence) is lowest when attribute diversity is high and EC susceptibility is low. In contrast, high EC susceptibility among group members can attenuate (or even neutralize) this negative effect of attribute diversity on group mood convergence, because despite attribute diversity, highly susceptible members are naturally prone to and more capable of mimicking others' affective expressions (Doherty, 1997).

Hypothesis 3a. The negative relationship between group-leader attribute diversity (GLAD) and group mood convergence is moderated by the EC susceptibility of members, such that the relationship is stronger for groups with lower EC susceptibility.

Hypothesis 3b. The negative relationship between member attribute diversity (MAD) and group mood convergence is moderated by the EC susceptibility of members, such that the relationship is stronger for groups with lower EC susceptibility.

[2] Extraversion accounts for about 15% (and upwards of 34%) of the variance in positive affect, and neuroticism accounts for about 25% (and upwards of 36%) of the variance in positive affect (Costa & McCrae, 1988; Gross, Sutton, & Ketelaar, 1998; Larsen & Ketelaar, 1991; Lucas & Baird, 2004; McCrae & Costa, 1991; Rusting, 1999). Positive and negative affectivity are the affective core of the higher-order constructs of extroversion and neuroticism, respectively (Watson, 2000).

Main and moderating effects of interpersonal attraction

Interpersonal attraction can be defined as the tendency to evaluate others in a consistently positive way (Huston & Levinger, 1978). In contrast to the group composition variables (i.e., attribute diversity and EC susceptibility), interpersonal attraction within a group is likely to be shared among members and thus reflects a collective property of the group, similar to group emergent states or process variables such as cohesiveness and team member interactions (Kozlowski & Klein, 2000). We employ the direct consensus model of composition, and propose that members tend to develop similar levels of attraction toward the leader and other members based on their shared group experiences and interaction history (Chan, 1998).

We believe that interpersonal attraction exerts both main and moderating effects on group mood convergence. Attraction among group members creates affiliation goals (e.g., to be liked by others, to be part of the group, to develop quality relationships, and so on), which induce mimicry because mimicry serves the social function of facilitating harmonious and positive interactions (Lakin, Jefferis, Cheng, & Chartrand, 2003). Thus, group members may mimic the thoughts and behavior of others, so that they are perceived by others as similar ("she is one of us") and thus find them interpersonally attractive (Hatfield et al., 1994; Williams & O'Reilly, 1998). Consequently, more mimicry among group members due to interpersonal attraction should result in greater group mood convergence.

Hypothesis 4a. Group members' interpersonal attraction toward their leader is positively related to group mood convergence.

Hypothesis 4b. Interpersonal attraction among group members is positively related to group mood convergence.

Furthermore, interpersonal attraction should dampen the negative relationship between attribute diversity and group mood convergence for the following reasons. First, interpersonal attraction should lead to more frequent and longer interactions, which translate to more opportunities for mood contagion because group members (1) become better at reading one another's affective cues the more and longer they are exposed to each other, and (2) adapt and synchronize their thoughts and behavior over time (Anderson et al., 2003). The increased interpersonal synchrony and ability to read affective cues promoted by interpersonal attraction should increase mood contagion even among members with diverse affective attributes. Second, interpersonal attraction may create an amicable affective context in which group members feel more comfortable about sharing information, including mood information (Gruenfeld, Mannix, Williams, & Neale, 1996). This propensity to communicate and to share mood information among more attracted group members should diminish the negative effect of attribute diversity on group mood convergence. Finally, interpersonal attraction increases the willingness of people to be influenced by others (Cialdini, 1993). Willingness to be influenced by the mood of others may promote mutual mood adjustment, which effectively dampens the negative relationship between attribute diversity and group mood convergence.

Hypothesis 5a. The negative relationship between group-leader attribute diversity (GLAD) and group mood convergence is moderated by group members' attraction toward the leader, such that the relationship is stronger for groups with lower leader attraction.

Hypothesis 5b. The negative relationship between member attribute diversity (MAD) and group mood convergence is moderated by the attraction among group members, such that the relationship is stronger for groups with lower attraction among members.

Method

To test our LAMP model (see Fig. 1), we carried out an experiment involving natural groups with existing norms and histories of shared affective experiences, because contagion effects within such groups may operate differently from the effects that occur in newly formed groups (George, 1995). Affective norms in natural groups develop over time (George, 2000), and thus can inhibit or facilitate mood contagion processes by imposing rules related to feeling and displaying particular moods (Doherty et al., 1995).

Participants

We studied 102 groups containing a total of 367 students recruited from undergraduate management courses. The average age of participants was 21.45 years (SD = 2.04) and females comprised 60% of the sample. The sample included 60% Caucasian, 20% Asian American, 14% Hispanic, 1% African American, and 5% "other" students. The participants were mostly seniors (51%) and juniors (30%). Group membership was randomly assigned and members worked together to fulfill course requirements and complete group projects. The size of the groups ranged from three to five, with 43 three-member groups, 57 four-member groups, and 2 five-member groups. On average, group members reported spending 2 h per week together outside of class for their group projects, and their interactions spanned 2.5 months at the time of the study. These groups were consistent with the definition of self-managing groups because they managed meetings, task procedures, work assignments, and interpersonal issues on their own (Stewart & Manz, 1995), without help from outsiders.

Experimental procedure

The groups participated in an hour-long experiment in which they were randomly assigned to three experimental conditions (positive, negative, and neutral mood). The experiment was conducted by trained research assistants who were blind to our hypotheses. The experiment was conducted in four sequential phases: (1) establishment of the cover story, (2) manipulation of leader mood, (3) initial mood convergence via the leader (activation), and (4) subsequent mood convergence among members (propagation). During Phase 1, the participants were provided with a cover story indicating that the goal of the study was to examine group interaction effects on memory recall (ability to remember information). Accordingly, they were informed that the study required them to (1) memorize information, (2) interact with fellow group members, and (3) take a memory test. Because the study required the participants to report their moods at various time points, which may have caused suspicion regarding the nature of the study, we informed participants that mood assessment was necessary to control differences in how people felt because previous studies have shown that mood affects recall. The participants then completed the first mood scale, to measure their baseline mood (*T1 baseline mood of leaders and members*).

To test our LAMP model, the groups were exposed to a leader whose mood had been manipulated. The leaders were randomly appointed from each self-managing group. Leadership in self-managing groups is flexible and dynamic (Erez, Lepine, & Elms, 2002), and any member can provide leadership on a particular task depending on which member possesses the most appropriate knowledge, skills, and abilities (Den Hartog & Koopman, 2002; Seers, 1989; Shamir, 1999; Taggar, Hackett, & Saha, 1999). In this study, critical instructions necessary to complete the task were given to leaders only, thus providing them with unique knowledge and influence. Furthermore, the task to be performed by the groups

was new to all the participants. These conditions bestowed leaders with legitimacy and critical knowledge, giving them the power needed to function as leaders (Podsakoff & Schriesheim, 1985). Leaders were then separated from their groups and informed that their group task was to build a tent while blindfolded (Quinn, 2000). The blindfolded tent exercise is appropriate for studying interpersonal interactions and moods in groups because the blindfolds alleviate the effects that observers have on the participants, resulting in less self-consciousness and more candid and natural behaviors (Quinn, 2000; Sy et al., 2005).

In Phase 2, we manipulated the leaders' moods. After reviewing the instructions for tent building for 5 min, leaders were told that they had been selected to memorize visual information, whereas their teammates would memorize verbal information. They were also informed that they would be shown a randomly selected video segment that they should watch closely, because they would be asked to recall the information contained in the video segment following the tent exercise. In reality, the leaders' moods were manipulated through the video clips, each of which lasted for 8 min. In the positive mood condition, the leaders viewed a humorous clip of David Letterman. In the negative mood condition, they viewed a documentary about social injustice and aggression. These video clips have proven to be successful in past research on positive and negative moods (Saavedra & Earley, 1991; Sy et al., 2005). In the neutral mood condition, the leaders viewed a documentary on the history of art that offered largely objective descriptions without affect-laden interpretations of events. Of the 102 randomly appointed leaders, 41 were assigned to the positive mood condition, 31 to the negative mood condition, and 30 to the neutral mood condition. The leaders completed a mood scale after watching the video clips (*T2 pre-task mood of leaders*). This measure was a manipulation check to ensure that the induction of mood in the leaders was successful. The leaders were then asked to rejoin their groups. While the leaders studied task instructions and watched the video clips, other group members were kept busy with the bogus task of memorizing a list of words (e.g., pencil, hat, chair, etc.).

In Phase 3, as the leaders interacted with their respective groups to plan for the task, we tested the first stage of the LAMP model by assessing the extent to which the mood of the group members converged with that of the leader. Following this interaction, the group members completed a mood scale (*T2 pre-task mood of members*). The leaders also completed the mood scale to alleviate any suspicion they might have had about the purpose of the study. The T2 pre-task mood of the members was used to examine the degree to which the mood of the group converged with that of the leader (*T2 pre-task mood of leaders*).

In Phase 4, we tested the second stage of the LAMP model by assessing the degree of mood convergence among the members as they interacted to build the tent. Groups were given 15 min to implement their plans on how to build the tent. At the conclusion of the 15-min activity, group members completed the third mood scale (*T3 post-task mood of members*).

Afterward, to follow through with the cover story, all participants were given a bogus memory test. Leaders were asked to recall information from the video clips, and other members were asked to recall as many words as possible from the list they had memorized. Then, we debriefed the participants, and thanked them for their participation.

Measures

Although the experiment was conducted during Week 10 of the academic term, the measures (see Appendix) were assessed at different times. Susceptibility to emotional contagion and attribute diversity in extroversion and neuroticism were assessed during Week 2 of the academic term. Interpersonal attraction for leaders and group members was assessed at the start of the experiment once the leader was determined.

GLAD and MAD (attribute diversity)

We measured extroversion and neuroticism using the individual ratings of group members and leaders on scales developed by John, Donahue, and Kentle (1991). These measures were selected for their brevity, content coverage, sound psychometric properties, and validity. Extroversion was measured with eight items ($\alpha = .86$, e.g., "I see myself as someone who generates a lot of enthusiasm"). Neuroticism was also measured with eight items ($\alpha = .82$, e.g., "I see myself as someone who is depressed, blue"). Participants responded to each item by indicating their level of agreement on a five-point (1–5) Likert-type scale.

Measures of diversity can be operationalized in multiple ways. Recent reviews recommend that researchers should base their operationalization on the conceptualization of the diversity construct (Harrison & Klein, 2007). More specifically, when the diversity constructs are conceptualized as separation, as they were in this study, the use of the absolute (Euclidean) distance is recommended. Moreover, the absolute distance measure is the most widely adopted approach for operationalizing dissimilarity (for recent reviews, see Kristof-Brown, Zimmerman, & Johnson, 2005; Riordan & Wayne, 2008). Accordingly, we follow this approach and operationalize GLAD as the absolute difference in attribute diversity (e.g., in extroversion) between the leader and the corresponding average scores of group members. Similarly, MAD was operationalized as the group-level standard deviation of the attribute diversity of the members.

Susceptibility to emotional contagion

This construct was measured using a scale developed by Doherty (1997). That scale has demonstrated internal and temporal reliability, as well as convergent, discriminant, and criterion validity. Similar to Johnson (2008), the items for the Love subscale were not included because they seemed less relevant to our interests. The resulting 12 items ($\alpha = .89$) assessed susceptibility to such emotions as happiness, anger, and sadness (e.g., "Being with a happy person picks me up when I'm feeling down"). The participants rated each item by indicating their level of agreement on a four-point (1–4) Likert-type scale.[3]

Interpersonal attraction

We measured interpersonal attraction using a three-item scale developed by Wayne, Shore, and Liden (1997). We adapted the items for leaders ($\alpha = .72$) and group members ($\alpha = .71$) (e.g., "I like my group leader (members) very much"). Each item was followed by a seven-point (1–7) agreement–disagreement scale. Examining the group-level psychometric properties, the average r_{wg} for the attraction of members toward the leader was .71, and the ICC(1) and ICC(2) values were .40 and .86, respectively. For the attraction of members among themselves, the average r_{wg} was .84 and the ICC(1) and ICC(2) values were .51 and .90, respectively. These results support the aggregation of individual scores to the group level and justify testing our hypotheses using group-level analysis.

[3] Unexpectedly, our data showed high r_{wg} and ICC values for members' EC susceptibility. This finding suggests that EC susceptibility may not only be a trait of individual group members, but can also be shaped by such contextual variables as cultural values and group norms. Recent research suggests that group members may internalize a shared style of affective response over time (Anderson et al., 2003). In our research, members may have learned affective response norms during the early stage of group development (as measured in the second week). This pattern suggests that groups not only generate a shared affective tone, but also engender similar reactive repertoires for dealing with affective events, thus further enhancing mood convergence among members.

Moods of the leaders and members

Mood was assessed using the Job Affect Scale (Brief, Burke, George, Robinson, & Webster, 1988). Like Johnson (2008), we used the high positive and high negative subscales because contagion is more likely to occur with high arousal moods than with low arousal moods (Damen et al., 2008; Hatfield et al., 1994). Positive mood was measured using six high positive mood items (e.g., enthusiastic, excited), whereas negative mood was measured using six high negative mood items (e.g., nervous, distressed). Participants responded to each item by indicating their level of agreement on a six-point (1–6) Likert-type scale. Group mood was measured by averaging the moods of group members. As described below, we first determined whether there was sufficient within-group agreement before aggregating to the group level.

Group mood convergence

Consistent with previous research (Barsade et al., 2000; Kristof-Brown et al., 2005; Riordan & Wayne, 2008), group mood convergence was operationalized using the standard deviation of the mood of group members at T2 and T3. A larger standard deviation score signifies more mood diversity (and thus less mood convergence); so we reversed the direction of the score by subtracting it from 2 (i.e., 2 – *SD* of group members' mood). This widely used approach keeps its original level of measurement (ratio scaling) intact, and reverses the direction of the variable, such that larger values indicate more group mood convergence. The scores from this reverse coding of the *SD* values of each group were used as the measure of group members' mood convergence at T2 and T3.

Results

Preliminary analyses

Table 1 displays the descriptive statistics and inter-correlations among the variables in our study. Before testing our hypotheses, we performed preliminary analyses to ensure that (1) mood induction in leaders was successful and that (2) the mood of groups actually converged through interactions between the leader and group members, and among group members.

Mood induction in leaders

We conducted a manipulation check by confirming that the mood of leaders in the three experimental conditions differed after watching the corresponding video clips (*T2 pre-task mood of leaders*). As expected, leaders in the positive mood condition reported a more positive mood ($M = 4.26$, $SD = .77$) than did those in the negative ($M = 2.56$, $SD = .63$) and neutral mood conditions ($M = 2.82$, $SD = .63$), $F(2,99) = 64.80$, $p < .001$. Leaders in the negative and neutral mood conditions did not differ on positive mood. Likewise, leaders in the negative mood condition reported a more negative mood ($M = 3.68$, $SD = 1.01$) than did those in the positive ($M = 2.39$, $SD = .95$) and neutral mood conditions ($M = 3.12$, $SD = .73$), $F(2,99) = 18.06$, $p < .001$. Moreover, leaders in the positive and neutral mood conditions differed on negative mood. We also verified that the moods of leaders changed from before to after seeing the videos in the positive and negative mood conditions, and that the moods of leaders in the neutral mood condition did not change. As expected, the leaders in the positive mood condition were in a more positive mood after ($M = 4.26$, $SD = .77$) than before seeing their video ($M = 3.01$, $SD = .76$), $t(40) = 9.60$, $p < .001$. Likewise, the leaders in the negative mood condition were in a more negative mood after ($M = 3.68$, $SD = 1.02$) than before seeing their video ($M = 2.85$, $SD = .84$), $t(30) = 3.78$, $p < .01$. Finally, leaders in the neutral mood condition did not differ in positive mood at Time 1 ($M = 2.98$, $SD = .68$) versus Time 2 ($M = 2.82$, $SD = .63$), $t(29) = 1.40$, $p > .05$, nor did they differ in negative mood at Time 1 ($M = 3.22$, $SD = .78$) versus Time 2 ($M = 3.12$, $SD = .73$), $t(29) = .46$, $p > .05$. Overall, the results indicated that mood induction in the leaders was successful.

Group mood convergence

To verify the extent to which group mood converged over the three periods, we examined standard deviation (*SD*), r_{wg}, ICC(1), and ICC(2) statistics. As reported in Table 2, compared with the baseline measure of group moods (T1), the *SD*s of group mood for the experimental groups following leader–member interaction (T2) decreased substantially (a 54% reduction in the positive group mood condition, from .28 to .13, and a 69% reduction in the negative group mood condition, from .35 to .11). These lowered levels of *SD*s were maintained at T3 (.15 and .10 for the positive and negative group mood conditions, respectively) following intensive interaction among members. In contrast, the *SD*s of group mood increased in the neutral mood condition (a 56% increase for the positive group mood condition and a 67% increase for the negative group mood condition), perhaps because the leaders' affect in this condition was not sufficiently salient to induce mood contagion.

Similarly, the r_{wg} values for the experimental groups were higher at T2 (.84 and .86 for positive and negative group mood, respectively) and T3 (.84 and .86 for positive and negative group mood, respectively) than at T1 (.64 and .44 for positive and negative group mood, respectively), indicating that within-group agreement in the mood of members increased following group interactions. In comparison, the r_{wg} values for the neutral mood groups remained the same or became smaller. For the experimental groups, the ICC(1) and ICC(2) statistics for positive mood also indicated an increasing group effect following group interactions, although the overall levels of ICC(1) and ICC(2) statistics for negative mood did not show substantial changes over the three periods. Similarly, there were no substantial changes in ICC(1) and ICC(2) statistics for group mood in the neutral mood condition. Taken as a whole, the moods of groups in the experimental conditions exhibited convergence, whereas the moods of groups in the neutral mood condition did not.

Hypothesis testing

Tables 3 and 4 present the results involving group mood convergence in the leader activation and member propagation stages, respectively. We examined the effects of diversity in extroversion and neuroticism separately because they are likely to shape positive and negative mood, respectively, which comprise relatively independent dimensions (e.g., Lazarus, 1991; McIntyre, Watson, Clark, & Cross, 1991). This analytic approach has also been employed in prior studies (Ilies et al., 2007). Furthermore, consistent with Affective Events Theory (Weiss & Cropanzano, 1996), we compared the effects for the experimental and neutral mood conditions separately, because contagion effects are likely to occur in the presence of a salient affective event (leaders' mood expression based on the mood induction). Thus, Tables 3 and 4 show the results for diversity in extroversion and neuroticism predicting convergence in positive and negative group mood, respectively.[4] In our analyses,

[4] We also conducted a series of analyses examining the results for "mixed" (unmatched) valence for attribute diversity and group mood convergence (e.g., diversity in extroversion predicting negative group mood convergence). These results were largely insignificant. Of the four possible main effects of GLAD and MAD at two stages of the LAMP model, only one was significant (i.e., GLAD in extroversion predicting negative mood convergence in the first stage of leader activation), and none of the eight interaction effects involving EC susceptibility and attraction was significant. In combination with strong results for the valence-congruent matching of attribute diversity and mood convergence, as reported in Tables 3 and 4, these data demonstrate the significance of valence correspondence in mood contagion processes.

Table 1
Descriptive statistics and correlations between study variables.

	M	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. GLAD in extroversion	.64	.46														
2. GLAD in neuroticism	.75	.47	.26**													
3. MAD in extroversion		.82	.26	.13	−.04											
4. MAD in neuroticism	.86	.29	.08	.10	−.03											
5. Leader attraction	4.60	1.08	−.27**	−.05	−.05	.04										
6. Member attraction	4.48	1.29	−.04	−.01	−.49***	.06	.18									
7. Group susceptibility to emotional contagion	2.86	.54	−.04	−.07	.01	−.14	.04	.02								
8. T2 positive group mood convergence	1.21	.30	−.28**	.12	−.27**	−.11	.46***	.31	.05							
9. T2 negative group mood convergence	1.14	.34	−.16	−.11	−.18	−.32**	.20*	.18	.30**	.37***						
10. T3 positive group mood convergence	1.22	.30	.06	.26**	−.40***	−.25*	−.11	.29**	.16*	.34***	.28**					
11. T3 negative group mood convergence	1.07	.39	.04	.02	.01	−.43***	−.10	.04	.39***	.04	.38***	.31**				
12. T2 positive group mood average	3.31	.74	.18	.27**	−.11	−.05	.23*	.22*	.20*	.05	.27**	.26**	.37***			
13. T2 negative group mood average	2.89	.69	.14	.18	.07	.11	−.09	−.06	−.23*	−.04	−.39***	−.07	−.31**	−.30**		
14. T3 positive group mood average	3.53	.77	.18	.28**	.01	−.21*	.15	.09	.22*	.08	.33**	.32**	.49***	.75***	−.29**	
15. T3 negative group mood average	2.44	.80	−.09	.01	.11	.25*	−.07	−.07	−.27**	−.10	−.56***	−.25*	−.60***	−.45***	63***	−.55***

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

Table 2
Group mood convergence at different mood contagion stages.

	T1 baseline				T2 leader activation				T3 member propagation			
	SD	r_{wg}	ICC1	ICC2	*SD*	r_{wg}	ICC1	ICC2	*SD*	r_{wg}	ICC1	ICC2
Experimental condition												
Positive group mood	.28	.64	.33	.75	.13	.84	.52	.87	.15	.84	.54	.88
Negative group mood	.35	.44	.42	.82	.11	.86	.47	.84	.10	.86	.41	.80
Neutral mood condition												
Positive group mood	.18	.49	.29	.65	.28	.60	.32	.73	.28	.56	.29	.71
Negative group mood	.21	.56	.31	.73	.35	.53	.29	.71	.73	.26	.31	.73

we controlled for the effects of group size, the T1 baseline mood of leaders and members, and mood convergence at the previous time point.

Leader activation stage

We first verified that mood transferred from leaders to members by confirming that the mood of groups in the positive versus the negative mood condition differed after members interacted with their leaders. As expected, groups in the positive mood condition reported a more positive mood ($M = 3.86$, $SD = .77$) than did those in the negative ($M = 2.98$, $SD = .52$) and neutral mood conditions ($M = 2.89$, $SD = .27$), $F(2,99) = 30.66$, $p < .001$. Groups in the negative and neutral mood conditions did not differ on positive mood. Likewise, groups in the negative mood condition reported a more negative mood ($M = 3.35$, $SD = .81$) than did those in the positive ($M = 2.57$, $SD = .55$) and neutral mood conditions ($M = 3.06$, $SD = .44$), $F(2,99) = 14.86$, $p < .001$. Moreover, groups in the positive and neutral mood conditions differed on negative mood. We also verified that the moods of group members changed from before to after interacting with their leaders. As expected, members of groups in the positive mood condition were in a more positive mood after ($M = 3.86$, $SD = .77$) than before interacting with their leaders ($M = 3.05$, $SD = .49$), $t(40) = 5.21$, $p < .001$. Likewise, members of groups in the negative mood condition were in a more negative mood after ($M = 3.35$, $SD = .81$) than before interacting with their leaders ($M = 2.69$, $SD = .61$), $t(30) = 3.49$, $p < .01$. Groups in the neutral mood condition did not differ in positive mood at Time 1 ($M = 3.00$, $SD = .41$) versus Time 2 ($M = 2.89$, $SD = .27$), $t(29) = 1.45$, $p > .05$, nor did they differ in negative mood at Time 1 ($M = 3.23$, $SD = .34$) versus Time 2 ($M = 3.06$, $SD = .44$), $t(29) = 1.66$, $p > .05$. These patterns clearly demonstrate Stage 1 (leader activation) of mood convergence for the experimental conditions, as predicted by the LAMP model.

Main effects

We proposed that the first-stage of group mood convergence would depend on GLAD, the EC susceptibility of group members, and leader attraction. As reported in Table 3, GLAD decreased the mood convergence of the groups in both the positive and negative mood conditions, fully supporting Hypothesis 1a. (Although the effect was somewhat smaller, MAD also exerted a significant effect on positive group mood convergence.) EC susceptibility increased mood convergence only for negative moods, partially supporting Hypothesis 2. Group members' interpersonal attraction toward their leader was positively related to both positive and negative moods, fully supporting Hypothesis 4a. In comparison, no significant main effects were observed in the neutral mood condition.

Interaction effects

We predicted that the relationship between GLAD and group mood convergence would be moderated by EC susceptibility and leader attraction. As reported in Step 3 of Table 3, the interaction between GLAD and members' EC susceptibility significantly predicted both positive and negative mood convergence in the experimental groups. Although the predicted pattern of interaction for negative mood convergence emerged, the interaction pattern for positive mood convergence was different from our prediction (partial support for Hypothesis 3a). The interaction between GLAD and leader attraction was significant only for positive mood convergence, partially supporting Hypothesis 5a. To analyze the nature of the interactions, we graphically illustrated and conducted simple slopes analysis using the approach of Aiken and West (1991). The two regression lines shown in Fig. 2 confirmed that the

Table 3
Hierarchical regression results for T2 group mood convergence (leader activation stage).

	T2 positive group mood convergence			T2 negative group mood convergence		
	B	ΔR^2		*B*	ΔR^2	
Experimental conditions (N = 72)						
Step 1		.11			.04	
Group size	.26*			.09		
T1 leader mood	.21			.03		
T1 group average mood	.15			−.11		
T1 group mood convergence	−.06			−.12		
Step 2		.46***			.41***	
MAD	−.24**			−.11		
GLAD	−.38***			−.40***		
EC susceptibility	−.01			.36***		
Leader attraction	.44***			.24*		
Step 3		.06**			.09**	
GLAD × EC susceptibility	−.22*			.41**		
GLAD × leader attraction	.21*			.29		
Overall *F* for the equation			10.89			6.93
Neutral mood condition (N = 30)						
Step 1		.10			.21	
Group size	.07			−.12		
T1 leader mood	.21			.23		
T1 group average mood	−.33			−.11		
T1 group mood convergence	−.16			.43*		
Step 2		.10			.25	
MAD	.10			−.41		
GLAD	.15			−.11		
EC susceptibility	.18			−.33		
Leader attraction	.20			.08		
Step 3		.06			.08	
GLAD × EC susceptibility	.29			−.35		
GLAD × leader attraction	−.25			−.29		
Overall *F* for the equation			.65			2.24

GLAD = group-leader attribute diversity; MAD = member–member attribute diversity; EC susceptibility = emotional contagion susceptibility. Results are based on congruent valence in attribute diversity and mood convergence, such that diversity in extroversion and neuroticism predict convergence in positive and negative group mood, respectively.[4]

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

negative relationship between GLAD and positive group mood convergence was stronger for groups with lower (one *SD* below the mean) leader attraction ($\beta = -.59$, $p < .001$) than it was for groups with higher (one *SD* above the mean) leader attraction ($\beta = -.17$, $p < .05$). No interaction results were significant in the neutral mood condition.

Figs. 3 and 4 present significant interactions involving EC susceptibility. These two graphs illustrate somewhat different dynamics for positive and negative mood convergence. As shown in Fig. 3, the negative relationship between GLAD and positive group mood convergence was stronger when the group's EC susceptibility was high ($\beta = -.60$, $p < .001$) than when it was low ($\beta = -.16$, $p < .01$). In contrast, as shown in Fig. 4, GLAD was a significant negative predictor of negative group mood convergence when EC susceptibility was low ($\beta = -.81$, $p < .001$), but not when it was high ($\beta = .01$, *ns*). Thus, the group's susceptibility to emotional contagion *pronounced* the effect of the positive affective attribute (extroversion) but *buffered* the effect of the negative affective attribute (neuroticism) on group mood convergence. These contrasting patterns suggest fundamentally disparate dynamics for positive and negative attribute diversity and mood in a group setting (cf. Walter & Bruch, 2008).

Member propagation stage

The second stage of the LAMP model (i.e., member propagation) focused on the interaction among members, interaction that furthers the contagion process initiated by the leader. As reported in Table 4, our analysis yielded no significant main or interaction effects for the groups in the neutral mood condition, just as we found for the first stage of mood contagion.

Main effects

GLAD, which was a significant predictor of mood convergence in the first stage, became insignificant in the second stage. In contrast, MAD decreased both positive and negative mood convergence in groups for both experimental conditions (see Step 2, Table 4), thus supporting Hypothesis 1b. Consistent with the leader activation stage, EC susceptibility also exhibited a significant main effect on negative mood convergence in the experimental groups (partial support for Hypothesis 2). However, in contrast to the leader activation stage, where attraction to leader was positively related to both positive and negative moods, group members' attraction to one another was not a significant predictor of group mood convergence (no support for Hypothesis 4b).

Interaction effects

The effect of MAD on negative mood convergence was moderated by the group's EC susceptibility (See Step 3, Table 4). As depicted in Fig. 5, MAD was a significant negative predictor of negative group mood convergence when EC susceptibility was low ($\beta = -.58$, $p < .001$), but not when it was high ($\beta = -.08$, *ns*). In contrast, the effect of MAD on positive mood convergence was significantly moderated by attraction among group members. The interaction pattern depicted in Fig. 6 showed that the negative relationship between MAD and positive group mood convergence was significant only when inter-member attraction was high

Table 4
Hierarchical regression results for T3 group mood convergence (member propagation stage).

	T3 positive group mood convergence			T3 negative group mood convergence		
	B	ΔR^2		*B*	ΔR^2	
Experimental conditions (N = 72)						
Step 1		.06			.09	
Group size	.06			−.01		
T1 leader mood	.06			−.01		
T1 group average mood	−.02			.12		
T2 group mood convergence	.20			.29*		
Step 2		.20**			.28***	
GLAD	−.05			−.21		
MAD	−.39**			−.33**		
EC susceptibility	.21			.40**		
Member attraction	.07			−.01		
Step 3		.09*			.06*	
MAD × EC susceptibility	.22			.25*		
MAD × member attraction	−.25*			.06		
Overall *F* for the equation			3.17**			4.64***
Neutral mood condition (N = 30)						
Step 1		.25			.34*	
Group size	−.43*			−.32		
T1 leader mood	.06			.46*		
T1 group average mood	.19			−.42*		
T2 group mood convergence	.22			.18		
Step 2		.04			.05	
GLAD	.21			.13		
MAD	−.05			−.26		
EC susceptibility	−.05			.07		
Member attraction	.04			.10		
Step 3		.02			.04	
MAD × EC susceptibility	.16			−.09		
MAD × member attraction	−.04			−.25		
Overall *F* for the equation			.86			.26

GLAD = group-leader attribute diversity; MAD = member–member attribute diversity; EC susceptibility = emotional contagion susceptibility. Results are based on congruent valence in attribute diversity and mood convergence, such that diversity in extroversion and neuroticism predict convergence in positive and negative group mood, respectively.[4]

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

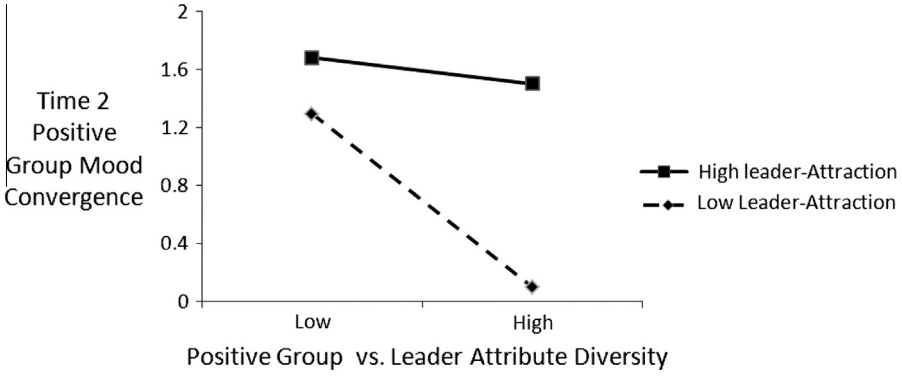

Fig. 2. Interaction of group versus leader attribute diversity (GLAD) and leader attraction on time 2 positive group mood convergence.

($\beta = -.64$, $p < .001$), but not when it was low ($\beta = -.14$, *ns*), which was different from our prediction for Hypothesis 5b. This unexpected pattern implies contrasting roles for interpersonal attraction targeted at leaders versus other members.

Discussion

This study extends existing research on mood convergence in groups, research in which attention is seldom directed to the antecedents and formative processes of mood contagion. Insights into the antecedents and moderators of group mood convergence are important because group mood affects how group members think, feel, and behave (Kelly & Barsade, 2001). We proposed the LAMP model, a multi-stage framework of mood contagion in groups. In the leader-activation phase of mood contagion, groups catch the mood of their leaders and synchronize it with their own. This initial contagion process was impeded by the difference in attribute diversity between group members and the leader (GLAD), but it was promoted by members' attraction toward the leader and their

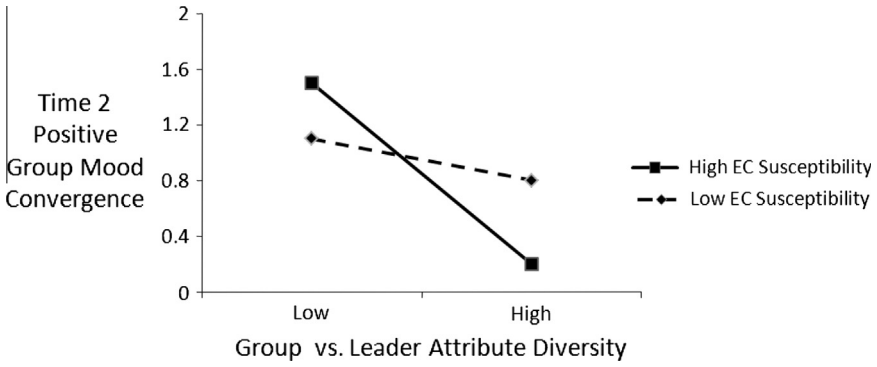

Fig. 3. Interaction of group versus leader attribute diversity (GLAD) and group susceptibility to emotional contagion on time 2 positive group mood convergence.

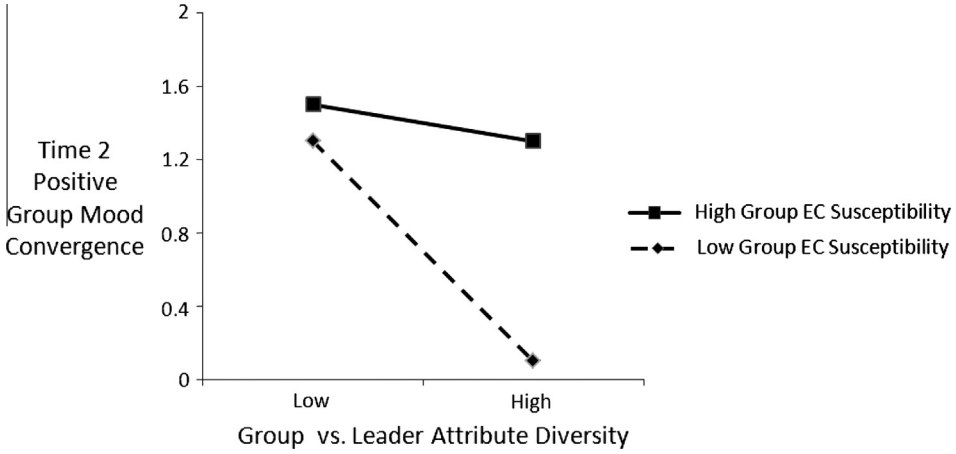

Fig. 4. Interaction of group versus leader attribute diversity (GLAD) and group susceptibility to emotional contagion on time 2 negative group mood convergence.

EC susceptibility. The second phase of group mood contagion (member propagation) was hindered by the difference in attribute diversity among members (MAD) and promoted by their EC susceptibility. The effects of GLAD and MAD on group mood convergence in the two stages were moderated by attraction toward the leader and attraction among members, as well as by members' EC susceptibility. Below, we highlight theoretical and practical implications of our study, along with its limitations and some directions for future research.

Effects of salient leader mood

Group mood convergence occurred only in the experimental conditions, where leaders' moods were manipulated and thus became salient (see Tables 3 and 4). In the neutral mood condition, the LAMP model did not operate, perhaps because affect was not transmitted between the leader and members and or among members. Apparently, the mood contagion process is ignited only when the leader has experienced a significant affective event (Weiss & Cropanzano, 1996). Without such affective arousal of a leader, members seem to become fragmented in their affective experiences during their group work (see Table 2 for the increasing levels of *SD* in the positive and negative moods of members in the neutral mood condition, as well as insignificant main and moderating effects reported in Tables 3 and 4).

Although the moods experienced by the leaders in our study were relatively mild (with the means ranging between 2.4 and 4.5 on a six-point scale), they were salient enough to trigger mood contagion between leaders and members. In traditional work settings, managers are likely to experience high-stake moods and emotions from daily events such as the successful completion of a challenging task, conflicts with other managers due to limited resources and politicking, and frustrating relationships with uncooperative and incompetent followers (Cole et al., 2008; George, 2000; Rimé, 2007). These workplace events should generate much stronger and more salient affective states for managers than those we induced by showing video clips in our study.

Effects of group mood valence

We analyzed both positive and negative affective processes, and found that the congruence of mood valence in attribute diversity and subsequent mood convergence was critical. This pattern resonates with the claim that positive and negative affect are asymmetrical constructs that can produce different affective dynamics (Walter & Bruch, 2008). We also observed different group-level dynamics related to positive and negative mood convergence, as specified below.

We hypothesized and found that leader attraction increased mood convergence, particularly for positive moods. In addition, we found that the moderating role of interpersonal attraction was limited to positive group mood convergence, and did not occur in negative mood convergence. These patterns imply that interpersonal attraction bears a greater significance for positive group moods than for negative group moods. Hence, the theoretical proposition that interpersonal attraction promotes mimicry among interaction partners and openness to interpersonal influence from others seems more applicable to positive than negative moods perhaps due to the positive affective connotation of attraction (Cialdini, 1993; Hatfield et al., 1994).

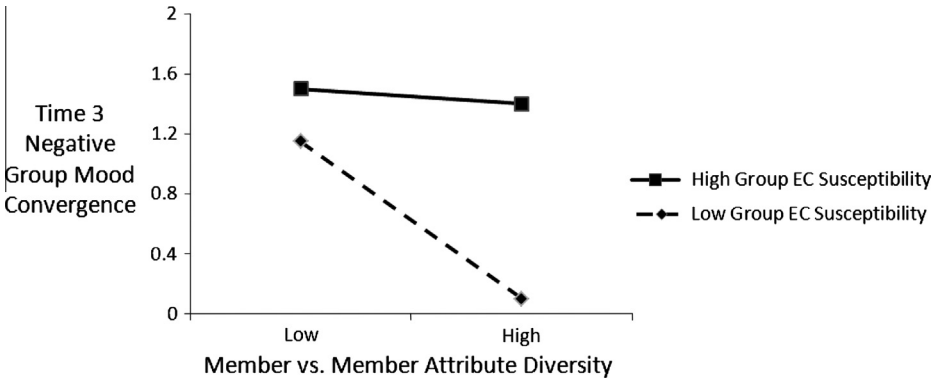

Fig. 5. Interaction of member versus member attribute diversity (MAD) and group susceptibility to emotional contagion on time 3 negative group mood convergence.

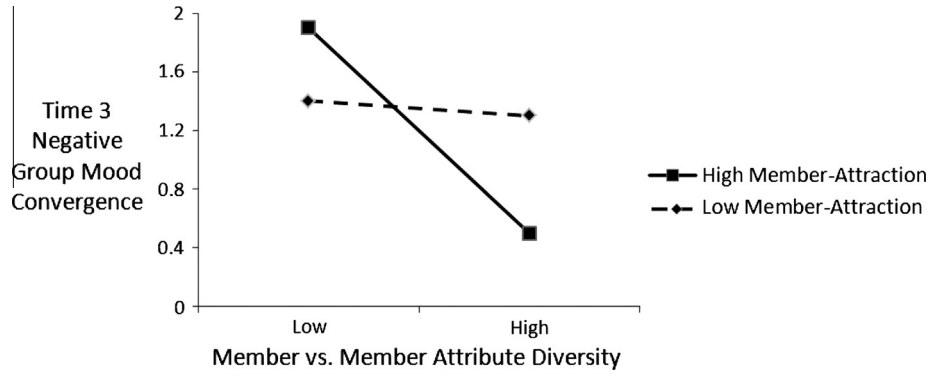

Fig. 6. Interaction of member versus member attribute diversity (MAD) and member attraction on time 3 positive group mood convergence.

In contrast, the results for EC susceptibility showed a main effect on group mood convergence that was significant for negative moods, but insignificant for positive moods, at both stages of leader activation and member propagation. Consistent with prior research, these results suggest that negative moods may be more contagious than positive moods (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001; Dasborough, 2006). Moreover, the interaction pattern involving EC susceptibility was somewhat different for positive and negative group moods. For negative group mood convergence, the role of EC susceptibility was similar to that of attraction, in that it attenuated the negative relationship between attribute diversity (GLAD and MAD) in neuroticism and mood convergence (see Figs. 4 and 5). However, for positive mood convergence, EC susceptibility *strengthened* the negative effect of attribute diversity (GLAD) in extroversion (see Fig. 3).

We speculate that when members are high on EC susceptibility and vary in their degree of extroversion (high attribute diversity), their experience of positive moods may diverge (Erez et al., 2008). That is, they may be catching leaders' positive moods (due to high EC susceptibility), but positive group moods may diverge due to high attribute diversity because high extroverts are more prone to positive moods and experience substantially higher levels of positive moods than do low extroverts (Costa & McCrae, 1988; Lucas & Baird, 2004; McCrae & Costa, 1991; Watson, 2000). Compared to the strong informational value of negative moods transmitted by the leader (Baumeister et al., 2001), moods that necessitate all members' attention and mimicry, positive moods offer more room for individual discretion, and thus allow greater variation in mood reactions among members (Gross et al., 1998; Larsen & Ketelaar, 1991; Rusting, 1999). These contrasting interaction patterns suggest that EC susceptibility buffers the effect of diversity in neuroticism, but pronounces the effect of diversity in extroversion, with respect to group mood convergence.

Future research should explore the underlying dynamics of these valence-dependent processes of mood contagion at the group level. Given that positive and negative moods are not opposite ends of a single continuum (Watson, 2000), groups may experience positive and negative moods simultaneously, resulting in more complex dynamics involving group affect (Oceja & Carrera, 2009). As the dual tuning theory of creativity indicates, the co-presence of positive and negative moods leads to greater creativity than when people experience either positive or negative moods alone (George & Zhou, 2007). Similarly, in very competitive and demanding group situations (e.g., professional sports teams, military units, and firefighting crews), leaders and members may experience both positive (e.g., excitement and pride) and negative moods (e.g., fear and nervousness) simultaneously. Indeed, these situations create a distinct context for mood contagion in which leaders (or members) can strategically channel the contagion process to boost one mood over another, or to strike a fine balance and tension between the two opposing moods. Overall, conceptual and empirical developments regarding the dynamics of positive and negative moods, as well as the simultaneous activation of opposing moods, should provide an intriguing direction for further studies.

Effects of different stages of LAMP

Another intriguing pattern was observed in the interaction of attraction with GLAD and MAD. In the first stage, leader attraction attenuated the negative effect of GLAD – when members liked the leader, they assimilated the leader's mood even when GLAD was high. Thus, in leader–member interactions, attraction seems to

remove or overcome the barrier of mood contagion caused by leader–member diversity. In contrast, inter-member attraction sharpened the negative effect of MAD on mood convergence in the second stage, such that when members liked one another, a high level of MAD became a substantial barrier to mood convergence. Perhaps, in this second stage of horizontal mood contagion, attraction among members generates an interpersonal expectation for similarity in thought, action, and affect (Byrne, 1971). When their expectation for similar responses from teammates is violated by a high level of MAD, negative reactance may arise among members, reducing mood contagion (Hatfield et al., 1994; McIntosh, Druckman, & Zajonc, 1994).

These seemingly opposing roles of interpersonal attraction at two stages of mood contagion are in line with prior studies demonstrating that individuals are sensitive, assimilating, and compliant when they are in a low-power position, whereas they are insensitive, disagreeing, and assertive when they are in a high-power or equal-power situation (Anderson et al., 2003; Butt & Choi, 2010; Guinote, 2007; Magee & Galinsky, 2008). Our results thus suggest that leader–member and member–member mood contagion may invite different dynamics of mood contagion due to the different power relationships among participants.

Implications for practice

With regard to organizational practices, our findings further highlight the importance of leaders as architects of the affective climate in groups (Kozlowski et al., 1996). Our findings also inform practicing managers about the prospects for manipulating moods in groups. Specifically, to infuse desirable affective tones in groups (either positive or negative, depending on the requirements of the task and the organizational context), leaders may try to take advantage of members' feelings of attraction toward them. However, group mood convergence may not always be desirable; group mood heterogeneity can be better under some circumstances (for a discussion, see George & King, 2007; Tiedens, Sutton, & Fong, 2004). Moreover, group mood convergence can cause positive or negative affective cycles (Hareli & Rafaeli, 2008; Walter & Bruch, 2008), so leaders must continually monitor and manage affect in work teams. An overly positive or negative affective tone caused by escalated levels of collective mood can threaten group performance. Groups can fall victim to detrimental processes under both an overly negative affective tone (e.g., inaction, aggressiveness, deviant behavior) and an overly positive affective tone (e.g., group complacency, groupthink).

Study limitations and future research directions

Our study has several limitations that also suggest directions for further research. First, we acknowledge that our results are based on student samples, which may limit the external validity of the findings because student teams tend to have relatively limited past interaction history, and have less expectations for future interactions compared to work teams in organizations. Moreover, experienced adult workers may have internalized workplace norms for handling affect overtime that may have implications for mood convergence in organizational teams. Also, we chose a task with which group members had no prior experience. However, shared task experiences and task properties can generate particular types of group moods and further shape the mood contagion process among members (Doherty et al., 1995). The blindfolded tent task may also provide somewhat limited opportunities for emotion contagion, which suggests that our findings represent a conservative test of group mood convergence. Therefore, future research should validate the LAMP model and the mechanisms of group mood convergence in actual organizational settings.

Second, the leader selection procedure that we used may have limited the leaders' influence over their groups because their power base was primarily derived from task knowledge. The relationships that we studied may be stronger in traditional groups, where leadership status is stable, formalized, and situated in a hierarchical context. In such contexts, leaders have wider bases of power, including punishment, reward, and referent power (Podsakoff & Schriesheim, 1985). Given previous findings that powerholders can shape the affect of less powerful partners (Anderson et al., 2003; Butt & Choi, 2010), future research should investigate how group mood convergence is influenced by (a) hierarchical versus horizontal power contexts, and (b) the strengths and types of power held by individuals.

Third, it is possible that group members also play a key role in shaping the moods of their leader and the group (Dasborough, Ashkanasy, Tee, & Tse, 2009). When the quality of leader–member exchange (LMX) is low and the quality of team member exchange (TMX) is high, leaders may be isolated from daily group processes and thus be unlikely to influence group moods. And when leaders are more follower-centric (e.g., servant leadership), group members may have more opportunities to set the affective tone of their groups. Thus, the causal influence of group mood contagion can be dynamic, with the possibility of leaders and followers becoming alternative sources of mood contagion. Accordingly, future research should examine the conditions that determine when leaders and followers are the sources and recipients of mood.

Finally, we found evidence for *concordant* contagion, but research indicates that contagion can also be *discordant* (Epstude & Mussweiler, 2009). Discordant contagion or "counter-contagion" (Hatfield et al., 1994) refers to situations in which the expression of one mood results in the activation of an opposite mood. Concordant contagion is more likely to occur among members who share a sense of kinship or identity, whereas discordant contagion is more likely among members who dislike each other or consider others to be an out-group (Epstude & Mussweiler, 2009). And discordant contagion may be more likely to occur under conditions where LMX is low, and the relationships among group members are governed by competitive rather than cooperative motivation (van Knippenberg, van Knippenberg, De Cremer, & Hogg, 2004).

In contrast to research focusing on cognitive models of workgroup diversity (Moreland & Levine, 1992; Moreland & Levine, 2003; Williams & O'Reilly, 1998), we addressed the call for more research on the role of affect in workgroups (Gooty, Connelly, Griffith, & Gupta, 2010; Kulik, 2004). Given the increasing awareness of how affect can shape group dynamics and organizational outcomes, understanding how affective states are generated, transferred, and transformed in workgroups is imperative. By considering attribute diversity, attraction toward leaders and other members, and susceptibility to emotional contagion, our research generated insights into how mood contagion is activated and propagated in groups (Cole et al., 2008; Sy et al., 2005). Further conceptual and empirical efforts should be directed to alternative input factors (e.g., trait positive and negative affectivity), intermediate interactive and behavioral processes among members (e.g., actual emotional displays, open communication), and group mood convergence in various affective domains (e.g., low arousal positive and negative emotions). To achieve a comprehensive understanding of groups, researchers should explore the way these affective dynamics shape and are shaped by cognitive processes in members, thus striking a balance between affect and cognition.

Appendix A

Study scale items

Extroversion

"I see myself as someone who…"

1. Is talkative
2. Is reserved[a]
3. Is full of energy
4. Generates a lot of enthusiasm
5. Tends to be quiet[a]
6. Has an assertive personality
7. Is sometimes shy, inhibited[a]
8. Is outgoing, sociable

Neuroticism

"I see myself as someone who…"

1. Is depressed, blue
2. Is relaxed, handles stress well[a]
3. Can be tense
4. Worries a lot
5. Is emotionally stable, not easily upset[a]
6. Can be moody
7. Remains calm in tense situations[a]
8. Gets nervous easily

Susceptibility to emotional contagion

1. If someone I'm talking with begins to cry, I get teary-eyed
2. Being with a happy person picks me up when I'm feeling down
3. When someone smiles warmly at me, I smile back and feel warm inside
4. I get filled with sorrow when people talk about the death of their loved ones
5. I clench my jaws and my shoulders get tight when 1 see the angry face on the news
6. It irritates me to be around angry people
7. Watching the fearful faces of victims on the news makes me try to imagine how they might be feeling
8. I tense when overhearing an angry quarrel
9. Being around happy people fills my mind with happy thoughts
10. I notice myself getting tense when I'm around people who are stressed out
11. I cry at sad movies
12. Listening to the shrill screams of a terrified child in a dentist's waiting room makes me feel nervous

Interpersonal attraction

1. I think my group leader (other members) would make a good friend
2. I get along well with my group leader (other members)
3. I like my group leader (other members) very much

Mood of the leader and members

1. Positive mood items: Active, elated, enthusiastic, excited, peppy, strong
2. Negative mood items: Distressed, fearful, hostile, jittery, nervous, scornful

[a] Reverse coded items.

References

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

Anderson, C., Keltner, D., & John, O. P. (2003). Emotional convergence between people over time. *Journal of Personality and Social Psychology, 84*, 1054–1068.

Barsade, S. G. (2002). The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly, 47*, 644–675.

Barsade, S. G., Ward, A. J., Turner, J. D. F., & Sonnenfeld, J. A. (2000). To your heart's content: A model of affective diversity in top management teams. *Administrative Science Quarterly, 45*, 802–836.

Bartel, C. A., & Saavedra, R. (2000). The collective construction of work group mood. *Administrative Science Quarterly, 45*, 197–231.

Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York: Free Press.

Batson, C. D., Turk, C. L., Shaw, L. L., & Klein, T. R. (1995). Information function on empathic emotion: Learning that we value the other's welfare. *Journal of Personality and Social Psychology, 68*, 300–313.

Baumeister, R., Bratslavsky, E., Finkenauer, C., & Vohs, K. (2001). Bad is stronger than good. *Review of General Psychology, 5*, 323–370.

Bell, S. T. (2007). Deep-level composition variables as predictors of team performance: A meta analysis. *Journal of Applied Psychology, 92*, 595–615.

Bono, J. E., & Ilies, R. (2006). Charisma, positive emotions, and mood contagion. *Leadership Quarterly, 17*, 317–334.

Brief, A. P., Burke, M. J., George, J. M., Robinson, B. S., & Webster, J. (1988). Should negative affectivity remain an unmeasured variable in the study of job stress? *Journal of Applied Psychology, 73*, 193–198.

Butt, A. N., & Choi, J. N. (2010). Does power matter? Negotiator status as a moderator of the relationship between negotiator emotion and behavior. *International Journal of Conflict Management, 21*, 124–146.

Byrne, D. (1971). *The attraction paradigm*. New York: Academic Press.

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

Chang, J. W., Sy, T., & Choi, J. N. (2012). Team emotional intelligence and performance: Interactive dynamics between leaders and members. *Small Group Research, 43*, 75–104.

Cialdini, R. B. (1993). *Influence*. New York: Morrow.

Cole, M. S., Walter, F., & Bruch, H. (2008). Affective mechanisms linking dysfunctional behavior to performance in work teams: A moderated mediation study. *Journal of Applied Psychology, 93*, 945–958.

Costa, P. T., Jr., & McCrae, R. R. (1988). Personality in adulthood: A six-year longitudinal study of self-report and spouse ratings on the NEO Personality Inventory. *Journal of Personality and Social Psychology, 54*, 853–863.

Damen, F., van Knippenberg, D., & van Knippenberg, B. (2008). Leader affective displays and attributions of charisma. *Journal of Applied Social Psychology, 38*, 2594–2614.

Dasborough, M. T. (2006). Cognitive asymmetry in employee emotional reactions to leadership behaviors. *Leadership Quarterly, 17*, 163–178.

Dasborough, M. T., Ashkanasy, N. M., Tee, E. Y. J., & Tse, H. M. (2009). What goes around comes around: How meso-level negative emotional contagion can ultimately determine organizational attitudes toward leaders. *Leadership Quarterly, 20*, 571–585.

Den Hartog, D. N., & Koopman, P. L. (2002). Leadership in organizations. In E. A. Anderson (Ed.), *Handbook of industrial, work, and organizational psychology* (pp. 166–187). London, England: Sage Publications.

Doherty, R. W. (1997). The emotional contagion scale: A measure of individual differences. *Journal of Nonverbal Behavior, 21*, 131–154.

Doherty, R. W., Orimoto, L., Singelis, T. M., Hatfield, E., & Hebb, J. (1995). Emotional contagion: Gender and occupational differences. *Psychology of Women Quarterly, 19*, 355–371.

Elfenbein, H. A., & Ambady, N. (2003). When familiarity breeds accuracy: Cultural exposure and facial emotion recognition. *Journal of Personality and Social Psychology, 85*, 276–290.

Epstude, K., & Mussweiler, T. (2009). What you feel is how you compare: How comparisons influence the social induction of affect. *Emotion, 9*, 1–14.

Erez, A., Lepine, J. A., & Elms, H. (2002). Effects of rotated leadership and peer evaluation on the functioning and effectiveness of self-managed teams: A quasi-experiment. *Personnel Psychology, 55*, 929–948.

Erez, A., Misangyi, V. F., Johnson, D. E., LePine, M. A., & Halverson, K. C. (2008). Stirring the hearts of followers: Charismatic leadership as the transferal of affect. *Journal of Applied Psychology, 93*, 602–615.

George, J. M. (1990). Personality, affect, and behavior in groups. *Journal of Applied Psychology, 75*, 107–116.

George, J. M. (1995). Leader positive mood and group performance: The case of customer service. *Journal of Applied Psychology, 25*, 778–794.

George, J. M. (1996). Trait and state affect. In K. R. Murphy (Ed.), *Individual differences and behavior in organizations* (pp. 145–171). San Francisco: Jossey-Bass.

George, J. M. (2000). Emotions and leadership: The role of emotional intelligence. *Human Relations, 53*, 1027–1055.

George, J. M., & King, E. B. (2007). Potential pitfalls of affect convergence in groups: Functions and dysfunctions of group affective tone. In B. Mannix, M. Neale, & C. Anderson (Eds.), *Research on managing groups and teams* (pp. 97–124). Oxford, UK: Elsevier.

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.

Gooty, J., Connelly, S., Griffith, J., & Gupta, A. (2010). Leadership, affect and emotions: A state of the science review. *Leadership Quarterly, 21*, 979–1004.

Gross, J. J., Sutton, S. K., & Ketelaar, T. (1998). Relations between affect and personality: Support for the affect-level and affective-reactivity views. *Personality and Social Psychology Bulletin, 24*, 279–288.

Gruenfeld, D. H., Mannix, E. A., Williams, K. Y., & Neale, M. A. (1996). Group composition and decision making: How member familiarity and information distribution affect process and performance. *Organizational Behavior and Human Decision Processes, 67*, 1–15.
Guinote, A. (2007). Behavior variability and the situated focus theory of power. *European Review of Social Psychology, 18*, 256–295.
Gump, B. B., & Kulik, J. A. (1997). Stress, affiliation, and emotional contagion. *Journal of Personality and Social Psychology, 72*, 305–319.
Halfhill, T., Sundstrom, E., Lahner, J., Calderone, W., & Nielsen, T. (2005). Group personality composition and group effectiveness: An integrative review of empirical research. *Small Group Research, 36*, 83–105.
Hareli, S., & Rafaeli, A. (2008). Emotion cycles: On the social influence of emotion in organizations. *Research in Organizational Behavior, 28*, 35–59.
Harrison, D. A., & Klein, K. J. (2007). What's the difference? Diversity constructs as separation, variety, or disparity in organizations. *Academy of Management Review, 32*, 1199–1228.
Hatfield, E., Cacioppo, J., & Rapson, R. L. (1994). *Emotional contagion*. Paris: Cambridge University Press.
House, R. J. (1977). A 1976 theory of charismatic leadership. In J. G. Hunt & L. L. Larson (Eds.), *Leadership: The cutting edge* (pp. 189–207). Carbondale: Southern Illinois University Press.
Hsee, C., Hatfield, E., Carlson, J., & Chemtob, C. (1990). The effect of power on susceptibility to emotional contagion. *Cognition and Emotion, 4*, 327–340.
Huston, T., & Levinger, G. (1978). Interpersonal attraction and relationships. *Annual Review of Psychology, 29*, 115–156.
Ilies, R., Wagner, D. T., & Morgeson, F. P. (2007). Explaining affective linkage in teams: Individual differences in susceptibility to contagion and individualism–collectivism. *Journal of Applied Psychology, 92*, 1140–1148.
John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The Big Five inventory: Versions 4a and 54*. Berkeley, CA: University of California, Berkeley, Institute of Personality and Social Research.
Johnson, S. K. (2008). I second that emotion: Effect of emotional contagion and affect at work on leader and follower outcomes. *Leadership Quarterly, 19*, 1–19.
Judge, T., Bono, J., Ilies, R., & Gerhardt, M. (2002). Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology, 87*, 765–780.
Kelly, J. R., & Barsade, S. G. (2001). Moods and emotions in small groups and work groups. *Organizational Behavior and Human Decision Processes, 86*, 99–130.
Keltner, D., & Robinson, R. J. (1997). Defending the status quo: Power and bias in social conflict. *Personality and Social Psychology Bulletin, 23*, 1066–1077.
Kozlowski, S. W. J., Gully, S. M., McHugh, P. P., Salas, E., & Cannon-Bowers, J. A. (1996). A dynamic theory of leadership and team effectiveness: Developmental and task contingent leader roles. *Research in Personnel and Human Resources Management, 14*, 253–305.
Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research and methods in organizations: Foundations, extensions, and new directions* (pp. 3–90). San Francisco, CA: Jossey-Bass.
Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals' fit at work: A meta-analysis of person–job, person–organization, person–group, and person–supervisor fit. *Personnel Psychology, 58*(2), 281–342.
Kulik, B. W. (2004). An affective process model of work group diversity, conflict, and performance: A paradigm expansion. *Organizational Analysis, 12*, 271–294.
Lakin, J. L., Jefferis, V. E., Cheng, C. M., & Chartrand, T. L. (2003). The chameleon effect as social glue: Evidence for the evolutionary significance of nonconscious mimicry. *Journal of Nonverbal Behaviour, 27*, 145–162.
Larsen, R. J., & Ketelaar, T. (1991). Personality and susceptibility to positive and negative emotional states. *Journal of Personality and Social Psychology, 61*, 132–140.
Latane, B. (1981). The psychology of social impact. *American Psychologist, 4*, 343–356.
Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
Levine, J. M., Moreland, R. L., & Hausmann, L. M. R. (2005). Managing group composition: Inclusive and exclusive role transitions. In D. Abrams, J. M. Marques, & M. A. Hogg (Eds.), *The social psychology of inclusion and exclusion* (pp. 137–160). Philadelphia, PA: Psychology Press.
Lewis, K. (2000). When leaders display emotion: How followers respond to negative emotional expression of male and female leaders. *Journal of Organizational Behavior, 21*, 221–234.
Lucas, R. E., & Baird, B. M. (2004). Extraversion and emotional reactivity. *Journal of Personality and Social Psychology, 86*, 473–485.
Magee, J. C., & Galinsky, A. D. (2008). Social hierarchy: The self-reinforcing nature of power and status. *Academy of Management Annals, 2*, 351–398.
McIntosh, D. N., Druckman, D., & Zajonc, R. B. (1994). Socially induced affect. In D. Druckman & R. A. Bjork (Eds.), *Learning, remembering, believing: Enhancing human performance* (pp. 251–276). Washington, DC: National Academy Press.
McIntyre, C. W., Watson, D., Clark, L. A., & Cross, S. A. (1991). The effect of induced social interaction on positive and negative affect. *Bulletin of Psychonomic Society, 29*, 67–70.
McCrae, R. R., & Costa, P. T. (1991). Adding Liebe und Arbeit: The full five-factor model and well-being. *Personality and Social Psychology Bulletin, 17*(2), 227–232.
Moreland, R. (2010). Are dyads really groups? *Small Group Research, 41*, 251–267.
Moreland, R. L., & Levine, J. M. (1992). The composition of small groups. In E. Lawler, B. Markovsky, C. Ridgeway, & H. Walker (Eds.), *Advances in group processes*. *Vol. 9* (pp. 237–280). Greenwich, CT: JAI Press.
Moreland, R. L., & Levine, J. M. (2003). Group composition: Explaining similarities and differences among group members. In M. A. Hogg & J. Cooper (Eds.), *Sage handbook of social psychology* (pp. 367–380). London: Sage.
Moreland, R. L., Levine, J. M., & Wingert, M. L. (1996). Creating the ideal group: Composition effects at work. In J. Davis & E. Witte (Eds.). *Understanding group behavior* (Vol. 2, pp. 11–35). Mahwah, NJ: Erlbaum.
Neumann, R., & Strack, F. (2000). "Mood contagion:" The automatic transfer of mood between persons. *Journal of Personality and Social Psychology, 79*, 211–223.
Oceja, L., & Carrera, P. (2009). Beyond a single pattern of mixed emotional experience: Sequential, prevalent, inverse and genuine simultaneous. *European Journal of Psychological Assessment, 1*, 58–67.
Papousek, I., Freudenthaler, H., & Schulter, G. (2008). The interplay of perceiving and regulating emotions in becoming infected with positive and negative moods. *Personality and Individual Differences, 45*, 463–467.
Parkinson, B., & Simons, G. (2009). Affecting others: Social appraisals and emotion contagion in everyday decision making. *Personality and Social Psychology Bulletin, 35*, 1071–1084.
Podsakoff, P. M., & Schriesheim, C. A. (1985). Field studies of French and Raven's bases of power: Critique, reanalysis, and suggestions for future research. *Psychological Bulletin, 97*, 387–411.
Quinn, R. E. (2000). *Change the world*. San Francisco: Jossey Bass.
Rimé, B. (2007). Interpersonal emotion regulation. In J. Gross (Ed.), *Handbook of emotion regulation* (pp. 466–485). New York: Guilford Press.
Riordan, C. M., & Wayne, J. H. (2008). A review and examination of demographic similarity measures used to assess relational demography within groups. *Organizational Research Methods, 3*, 562–592.
Rusting, C. L. (1999). Interactive effects of personality and mood on emotion-congruent memory and judgment. *Journal of Personality and Social Psychology, 77*, 1073–1086.
Saavedra, R. (2008). Kindling fires and extinguishing candles: The wind of mood contagion in work groups. In N. M. Ashkanasy & C. L. Cooper (Eds.), *Research companion to emotion in organizations. New horizons in management* (pp. 423–440). Northampton, MA: Edward Elgar Publishing.
Saavedra, R., & Earley, P. C. (1991). Choice of task and goal under conditions of general and specific affective inducement. *Motivation and Emotion, 15*, 45–65.
Shamir, B. (1999). Leadership in boundaryless organizations: Disposable or indispensable? *European Journal of Work and Organizational Psychology, 8*, 49–71.
Seers, A. (1989). Team-member exchange quality: A new construct for role making research. *Organizational Behavior and Human Decision Processes, 43*, 118–135.
Stewart, G. L., & Manz, C. C. (1995). Leadership for self-managing work groups: A typology and integrative model. *Human Relations, 48*, 747–769.
Sy, T., Cote, S., & Saavedra, R. (2005). The contagious leader: 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.
Taggar, S., Hackett, R., & Saha, S. (1999). Leadership emergence in autonomous work teams: Antecedents and outcomes. *Personnel Psychology, 52*, 899–926.
Tiedens, L. Z., Sutton, R., & Fong, C. (2004). Emotional variation in work groups: Causes and performance consequences. In L. Z. Tiedens & C. W. Leach (Eds.), *The social life of emotions* (pp. 164–186). New York: Cambridge University Press.
Totterdell, P. (2000). Catching moods and hitting runs: Mood linkage and subjective performance in professional sport groups. *Journal of Applied Psychology, 85*, 848–859.
van Knippenberg, D., van Knippenberg, B., De Cremer, D., & Hogg, M. (2004). Leadership, self, and identity: A review and research agenda. *Leadership Quarterly, 15*, 825–856.
Walter, F., & Bruch, H. (2008). The positive group affect spiral: A dynamic model of the emergence of positive affective similarity in work groups. *Journal of Organizational Behavior, 29*, 239–261.
Watson, D. (2000). *Mood and temperament*. New York: Guilford Press.
Watson, D., & Clark, L. A. (1992). On traits and temperament: General and specific factors of emotional experience and their relation to the five-factor model. *Journal of Personality, 60*, 441–476.
Wayne, S. J., Shore, L. M., & Liden, R. C. (1997). Perceived organizational support and leader–member exchange: A social exchange perspective. *Academy of Management Journal, 40*, 82–111.
Weber, M. (1920). *The theory of social and economic organization* (A. M. Henderson, & T. Parsons, Trans.). New York: Oxford University Press.
Weiss, H. M., & Cropanzano, R. (1996). Affective Events Theory: A theoretical discussion of the causes and consequences of affective experiences at work. In H. Weiss & R. Cropanzano (Eds.). *Research in organizational behavior* (Vol. 18, pp. 1–74). London, England: Elsevier Science/JAI Press.
Williams, K., & O'Reilly, C. A. (1998). Demography and diversity in organizations. A review of 40 years of research. In H. Weiss & R. Cropanzano (Eds.), *Research in organizational behavior*. *Vol. 20* (pp. 77–140). London, England: Elsevier Science/JAI Press.