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RESEARCH REPORT

Positive Is Usually Good, Negative Is Not Always Bad: The Effects of Group Affect on Social Integration and Task Performance

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Grounded in a social functional perspective, this article examines the conditions under which group affect influences group functioning. Using meta-analysis, the authors leverage heterogeneity across 39 independent studies of 2,799 groups to understand how contextual factors—group affect source (exogenous or endogenous to the group) and group life span (one-shot or ongoing)—moderate the influence of shared feelings on social integration and task performance. As predicted, results indicate that group positive affect has consistent positive effects on social integration and task performance regardless of contextual idiosyncrasies. The effects of group negative affect, on the other hand, are context-dependent. Shared negative feelings promote social integration and task performance when stemming from an exogenous source or experienced in a 1-shot group, but undermine social integration and task performance when stemming from an endogenous source or experienced in an ongoing group. The authors discuss implications of their findings and highlight directions for future theory and research on group affect.

Keywords: affect, group, team, social integration, meta-analysis

It has been nearly 25 years since George's (1990) pioneering research on the effects of collective affect in groups. In the decades since, scholars have published conceptual reviews of the topic (e.g., George, 1996; Kelly & Barsade, 2001) and dozens of empirical studies about how shared positive and negative feelings influence group processes, emergent states, and outcomes. In all, accumulated evidence indicates that shared feelings significantly affect group functioning (Barsade & Gibson, 2012). According to a social functional perspective, which asserts that affect developed as a mechanism to enable human adaptation in groups (Keltner & Haidt, 1999), a core mechanism through which group affect might influence group performance is social integration—relational bonds that link group members to one another and to the group (Katz & Kahn, 1978; O'Reilly, Caldwell, & Barnett, 1989). As groups became important vehicles for human survival, the tendency to share feelings may have been a rudimentary glue that bound people together and enabled interdependent action (Keltner & Haidt, 1999).

There is broad consensus that shared positive feelings—like happiness and excitement—serve a bonding function and promote social integration (Fischer & Manstead, 2008; Niedenthal & Brauer, 2012; Spoor & Kelly, 2004). There is significant ambiguity, however, regarding how shared negative feelings—such as anger or anxiety—influence social integration. Some have argued that shared negative feelings inhibit social integration (Gouaux, 1971; Hareli & Rafaeli, 2008; Jones & Kelly, 2013; Rhee, 2007), whereas others have suggested that such feelings can promote group bonding (George, 2002; Kelly, Iannone, & McCarty, 2014; van der Schalk et al., 2011). Thus, "although it is clear that positive emotions foster positive social interactions . . . the evidence concerning negative emotions is less clear-cut" (Fischer & Manstead, 2008, p. 464).

The purpose of this article is to resolve ambiguity about the effects of group affect—in particular negative affect—on social integration and group performance. To do so we draw from functional theories, which highlight the role of context in shaping the effects of affect (e.g., Elfenbein, 2007; Fischer & Manstead, 2008; George, 2011), and propose that shared negative feelings sometimes promote and sometimes inhibit—depending on the source of affect and the life span of the group—social integration. We use meta-analysis, leveraging variability in contextual factors across existing research, to test our hypotheses.

Theory and Hypotheses

Our focus in this article is on shared feelings in groups and, in particular, on core affective states—"the most elementary consciously accessible affective feelings" (Russell & Barrett, 1999, p. 806). Although people experience a wide range of emotions, broad dimensions of affect influence cognition and behavior (Russell & Barrett, 1999). Organizational researchers have most frequently

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studied the dimensions positive and negative affect (Barsade & Gibson, 2007). Positive affective states are characterized by high pleasantness and high activation (e.g., excitement); negative affective states are characterized by low pleasantness and high activation (e.g., anger). Positive affect and negative affect are just one representation of emotional space (Barrett & Russell, 1999), but have received the most attention from researchers studying groups.

Group affect is the collective-level analogue to individual state affect and represents the jointly experienced, shared feelings that group members hold in common at a given point in time (Kelly & Barsade, 2001). The members of groups and teams are prone to converge in their affective states for several reasons (see Parkinson, Fischer, & Manstead, 2005), including group composition (e.g., George, 1990), primitive contagion (e.g., Barsade, 2002), and because group members encounter similar events in their work (e.g., Weiss & Cropanzano, 1996). Together, these factors lead to the emergence of shared group affect (Barsade & Knight, in press).

A social functional perspective provides clues about how group affect might influence group functioning. A central tenet of a social functional perspective is that the tendency for humans to converge in their affective states emerged as a primitive form of interpersonal coordination that bred affiliation (Hatfield, Cacioppo, & Rapson, 1994; Keltner & Haidt, 1999). Emotional sharing is characteristic of the most basic relationships that humans form. Infants, for example, imitate their mother's emotional expressions within the first few months of life—well before they engage in complex cognitive processing or verbal expression (Haviland & Lelwica, 1987). For primitive groups, emotional convergence may have enabled people to rapidly disseminate messages of threat or opportunity to one another (Spoor & Kelly, 2004) and to discern in-group from out-group members (Keltner & Haidt, 1999), thereby contributing to their mutual fitness and survival through enhanced social integration (Fischer & Manstead, 2008).

This primitive function of group affect—promoting social integration—may provide an explanation for how group affect influences workgroup task performance. Social integration is an umbrella construct that comprises aspects of how people are positively linked to one another and to a group, including cohesion, identification, and interpersonal attraction (Dineen, Noe, Shaw, Duffy, & Wiethoff, 2007; O'Reilly et al., 1989; Smith et al., 1994). Social integration enhances group performance because the members of socially integrated groups are well-coordinated and committed to group tasks—an idea supported by a substantial body of empirical evidence (Beal et al., 2003). Below, we propose that social integration is a key mechanism through which group affect influences group task performance. Importantly, we do not argue that social integration is the only mechanism. Indeed, scholars have suggested that group affect influences other aspects of group functioning, such as group efficacy (Gibson, 2003), effort (Sy, Côté, & Saavedra, 2005), and cognition (van Knippenberg, Kooij-de Bode, & van Ginkel, 2010). To account for other paths through which group affect might influence performance, we propose that social integration partially mediates the effects of group affect on group task performance.

As we describe below and illustrate in Figure 1, we propose (a) that shared positive feelings generally promote social integration and, indirectly, enhance task performance; and (b) that the effects of shared negative feelings on social integration and performance are sensitive to contextual factors. We propose general effects of group positive affect and conditional effects of group negative affect because these different states may have evolved to serve different functions (Spoor & Kelly, 2004). Positive feelings serve a broad affiliation function for humans in social contexts (van der Schalk et al., 2011), enabling bonding and the creation of social relationships in groups (Spoor & Kelly, 2004). In contrast, group negative affect likely emerged to demarcate group boundaries and spread information about potential threats to the group from outside entities (Fischer & Manstead, 2008; Kelly et al., 2014). Whereas group positive affect is likely to strengthen social integration across situations, the effects of group negative affect on social integration may depend on the signals that such feeling states send to group members.

Group positive affect likely plays a broad role in breeding social integration and, thereby, indirectly facilitates effective group task performance. The interpersonal behavioral tendencies associated with positive feelings—which are approach-oriented, affiliative, and cooperative (Lyubomirsky, King, & Diener, 2005)—support the idea that shared positive feelings serve a broad function of promoting group bonding and cohesion (Moreland, 1987; Spoor & Kelly, 2004) that transcends situational idiosyncrasies. As evidence for the broad effects of positive affect on affiliation, van der

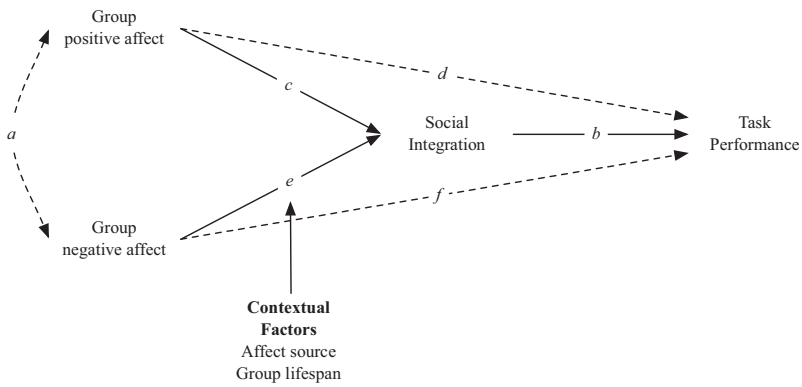

Figure 1. Conceptual model of group affect, social integration, and task performance. Solid arrows represent focal paths of theoretical interest. Dashed arrows represent paths controlled for in path analyses.

Schalk et al.'s (2011) experimental research showed that people are as likely to mimic the positive emotional displays of out-group as in-group members. However, for negative displays, people mimic in-group members more than out-group members. Mimicry of positive feelings transcended group membership, whereas mimicry of negative feelings depended on group membership. Displays of positive affect thus seem to serve an intrinsic affiliation function (Bourgeois & Hess, 2008; Fischer & Manstead, 2008) and invite people to form positive ties with one another. When group members share positive feelings, their affiliative behaviors likely promote social integration and indirectly enhance group task performance.

> *Hypothesis 1:* Social integration partially mediates a positive relationship between group positive affect and group performance.

In contrast to the broad effects of group positive affect, we propose that the effects of group negative affect are sensitive to contextual factors. A basic principle of social functional theories of affect is that, because emotions evolved to help humans adapt to changing environmental conditions, the effects of feeling states are context-dependent (Elfenbein, 2007; Fischer & Manstead, 2008). Theory and research on the interpersonal effects of affect in groups suggest that the effects of negative feelings are especially sensitive to context (De Dreu, West, Fischer, & MacCurtain, 2001; Fischer, Manstead, & Zaalberg, 2003; van der Schalk et al., 2011). We draw from these perspectives and suggest that the effects of group negative affect on social integration depend on the meaning and value of the signals that negative feelings send to the group. If group negative affect serves a signaling function, alerting group members to possible threats, the source of negative feelings—whether exogenous or endogenous to the group—may serve a moderating role. And, if group negative affect serves a boundary demarcation function, helping group members separate in-group from out-group members, the life span of a group—whether one-shot or ongoing—may serve a moderating role.

A first contextual factor that may shape the effects of group negative affect is the source of group members' shared feelings. Drawing from affective events theory, Kelly and Barsade (2001) differentiated between endogenous and exogenous sources of group affect. Endogenous sources lie within the group itself; that is, endogenous group affect emerges directly from the interactions of group members and as a result of chronic forces (e.g., composition). For example, Barsade (2002) studied endogenously driven group affect that emerged from a confederate group member's emotional expressions. Exogenous sources, in contrast, lie outside the membership of the group; that is, exogenous group affect is sparked by external events or individuals who are not group members. For example, Van Kleef et al. (2009) studied group affect sparked by the expressions of an external manager delivering feedback through a video recording.

Knowing the source of shared feelings may be consequential for making sense of the effects of group negative affect. From a social functional perspective, shared negative affect in response to an external stimulus may have served a critical role in promoting group survival by coordinating and directing group members' attention toward a potential external threat (De Dreu et al., 2001; Fischer & Manstead, 2008). Grounded in this idea, scholars across disciplines have argued that people who together encounter a common external threat, and share a common fate, are prone to affiliate with one another (Gump & Kulik, 1997; Schachter, 1959; Stein, 1976). By promoting social integration, shared negative feelings might have enabled groups to mobilize the resources and coordination needed to make sense of or confront a perceived outside threat (Gump & Kulik, 1997; Keltner & Haidt, 1999). In contrast, when negative feelings emerge from within the group itself—that is, when group negative affect stems from an endogenous source—group members may be likely to appraise the group itself in a negative light (Fischer & Manstead, 2008). In line with these predictions, though not focused on affect per se, research has found that shared dissatisfaction among group members strengthens group solidarity when the focus of dissatisfaction is outside the group, but weakens solidarity when the focus of dissatisfaction is the group itself (Dineen et al., 2007).

> *Hypothesis 2:* The effect of group negative affect on social integration and task performance is negative when stemming from an endogenous source, but positive when stemming from an exogenous source.

A second contextual factor that may moderate the effects of group negative affect is group life span. A social functional perspective suggests that sharing negative feelings, in particular, serves a boundary demarcation function, helping people discern in-group from out-group members (van der Schalk et al., 2011). Group negative affect is likely most valuable in fulfilling this function when group boundaries are weak. Group boundaries are less well-defined for people coming together for the first time in a single time-delimited performance episode—what we refer to as a *one-shot group*—than for people engaged in an ongoing, continuous task together—what we refer to as an *ongoing group*. In a one-shot group, individuals who have never worked together before complete a well-defined and time-delimited task and then disband. In an ongoing group, individuals work with one another across multiple performance episodes (Harrison, Mohammed, McGrath, Florey, & Vanderstoep, 2003).

In one-shot groups, shared negative feelings provide valuable information about group boundaries and an initial source of commonality that people can use to categorize themselves as members of the same in-group. Having no prior joint interactions, and thus no shared history, shared affective experiences may fulfill a rudimentary role in bringing people together as a cohesive social unit (Parkinson et al., 2005). A necessary precondition, however, is that people approach one another with a baseline affiliative, rather than competitive, stance (Hess & Fischer, 2013; Van Kleef, De Dreu, & Manstead, 2010). An affiliative stance likely characterizes early encounters between workgroup members. As Hess and Fischer (2014, p. 148) noted, "for human beings as a social species, affiliative intent can be assumed to be the default stance for situations in which the other is a potential in-group member." Thus, for one-shot groups, group negative affect provides a basic source of commonality—one with evolutionary roots in helping distinguish in-group from out-group members—that facilitates social integration.

Whereas the life span of one-shot groups is limited to a single performance episode, the continuous nature and well-defined boundaries of ongoing groups may render shared negative feelings

less useful in identifying in-group members. Further, ongoing groups may develop a history of emotional events that colors members' appraisals (De Dreu et al., 2001; Fischer & Van Kleef, 2010). Theory (Fischer & Van Kleef, 2010; Hareli & Rafaeli, 2008; Walter & Bruch, 2008) and research (Anderson, Keltner, & John, 2003) suggest that, over time and across performance episodes, negative feelings can spiral and create adverse interpersonal dynamics as individuals respond less to the sharedness of their feeling states and more to the negativity of their feeling states. Although one-shot groups may benefit from the in-group categorization prompted by *shared* negative affect, ongoing groups may suffer from the negative appraisals sparked by shared *negative* affect. Group negative affect in ongoing groups may thus be destructive for social integration and, indirectly, undermine task performance.

> *Hypothesis 3:* The effect of group negative affect on social integration and task performance is negative in ongoing groups, but positive in one-shot groups.

In addition to examining these theoretically meaningful moderators of the effects of group negative affect, we also explore one methodological moderator—the composition model used to operationalize group affect from individual data. In multilevel research, a composition model specifies "the functional relationships among phenomena or constructs at different levels of analysis" (Chan, 1998, p. 234). Two composition models—both that presume homogeneity—are prevalent in research on group affect. A *direct consensus* model specifies that group affect consists of "collections of individual experiences" (Parkinson et al., 2005, p. 87) and, thus, is assessed as the average of members' individual feelings. In contrast, a *referent shift* model specifies that group affect is "more than the sum of its parts" (De Dreu et al., 2001, p. 208) and, thus, is assessed as the average of members' reports of the affect of the group as an entity. We suspect that the collective focus of a referent shift model may align best with the interpersonal nature of social integration, whereas the individual focus of a direct consensus model may elicit group members' intrapersonal feelings. However, research (e.g., Klein, Conn, Smith, & Sorra, 2001) suggests that the effects of composition model are complex. Rather than pose a directional hypothesis, we explore the moderating effects of composition model as a research question.

Method

We tested our hypotheses using meta-analysis—a particularly useful technique for examining how contextual moderators affect the relationship between widely studied variables. To identify relevant empirical studies, we first searched several electronic databases (e.g., *Business Source Premier*)[1] using the Cartesian product of the following sets of keywords: (group, team, collective) × (affect*, mood*, emotion*). We supplemented this approach by (a) tracing citations to prominent articles about group affect (Barsade & Gibson, 1998; George, 1990, 1996; Kelly & Barsade, 2001); (b) examining the reference lists of recent reviews of group affect research (Barsade & Gibson, 2012; Collins, Lawrence, Troth, & Jordan, 2013) as well as the reference lists of articles retrieved through our other searches; and, (c) examining the tables of contents from 2005 to June 2014 of 10 peer-reviewed journals (e.g., *Journal of Applied Psychology*). We included a study in our database if it (a) examined groups comprising at least three members; (b) reported group-level relationships between state affect and one or more group processes, emergent states, or outcomes; and (c) provided bivariate effect sizes.

Coding of Studies

The authors independently coded studies for four variables and three moderators (see Table 1). The initial coding of variables as group positive affect, group negative affect, social integration, and performance yielded a 91% agreement rate. Initial agreement for moderators was also high: 94% for affect source, 100% for group life span, and 83% for composition model.

Affect variables. We coded variables as either *group positive affect* or *group negative affect* when they represented an affective state that was shared among group members. Because we focused on affective states, this coding excluded studies that used only trait-based measures. Researchers used a variety of measures and manipulations of group affect. Using the circumplex model (Barrett & Russell, 1999) as a guide, our initial coding characterized affect according to both hedonic tone (i.e., positive or negative) and level of activation (i.e., high, medium, or low). However, only three studies reported results of positive or negative affect for different activation levels. The majority of affect variables (79%) were operationalized according to Watson et al.'s (1988) conceptualization of affect. Given the small percentage of studies that departed from this structure, we do not differentiate between different activation levels of affect.[2]

Correlates. We coded variables that examined relational characteristics of groups as social integration. Several variables that fit within the construct space of social integration were represented in the group affect literature: cohesion, relationship conflict, commitment, cooperation, prosocial behavior, identification, and trust. With the exception of conflict, these variables are positive indicators of social integration. Because relationship conflict is an indicator of a lack of social integration in groups (Jehn & Bendersky, 2003), we reverse-scored effect sizes for affect and relationship conflict. We coded variables representing the group's effectiveness in completing its tasks as task performance. Indicators included objective metrics (e.g., sales figures), stakeholder perceptions (e.g., patient ratings of care), and supervisor ratings. We used group member ratings only if no other indicator was available, which occurred in two cases.

Moderators. First, we classified the source of group affect. We marked a study as examining an endogenous (vs. exogenous) source when the reference point used in a measure of group affect was a member of the group and/or the nature of group interactions (vs. a target outside of the group) or if the manipulation of affect originated within the group (vs. outside of the group). Second, we

[1] Lists of the specific databases and journals searched are available by request from the authors.

[2] In supplemental analyses we tested whether activation level moderated the effects we observed. Although results are necessarily based on a small sample (because few studies examined low activation states), our findings did not differ for low compared to high activation states.

Table 1
Accounting of Studies Included in Meta Analysis

Source	Positive affect	Negative affect	Social integration	Group performance	Affect source	Group lifespan	Comp. model
Barsade (2002)	•		•		O	S	R
Bashshur et al. (2011)	•	•		•	O	O	D
Bramesfeld & Gasper (2008)	•		•	•	X	S	D
Bramesfeld & Gasper (2008)	•		•	•	X	S	D
Chi et al. (2011)	•		•	•	O	O	R
Choi & Cho (2011)		•	•		O	O	R
Cole et al. (2008)		•	•	•	O	O	R
Cole et al. (2011)		•	•		O	O	D
Dimotakis et al. (2012)	•		•	•	O	S	D
Erdheim (2007)	•	•	•	•	X	S	D
Gamero et al. (2008)	•	•	•		O	O	D
George (1990)	•	•	•		O	O	D
George (1995)	•			•	O	O	D
González-Romá & Gamero (2012)	•			•	O	O	D
Grawitch, Munz, & Kramer (2003)	•	•	•	•	X	S	D
Grawitch, Munz, Elliott, & Mathis (2003)	•			•	X	S	D
Hentschel et al. (2013)	•	•	•		O	O	R
Hmieleski et al. (2012)	•	•	•	•	O	O	R
Iannone (2011)	•	•	•	•	X	S	D
Jones & Kelly (2009)	•			•	X	S	D
Kaplan et al. (2013)		•		•	O	O	D
Klep et al. (2011)	•		•	•	X	S	
Knight (2009)	•	•	•	•	O	O	R
Lin et al. (2014)	•	•	•		O	O	D
Mason & Griffin (2005)	•	•	•	•	O	O	R
Mason (2006)	•		•		O	O	D
Mitchell et al. (2014)		•		•	O	O	R
Rego et al. (2014)	•	•		•	O	O	R
Rhee (2006)	•			•	X	O	D
Seong & Choi (2014)	•		•	•	O	O	R
Tanghe et al. (2010)	•	•	•	•	O	O	D
Teng & Luo (2014)	•			•	O	O	D
Tsai et al. (2012)	•	•	•	•	O	O	R
Tu (2009)	•	•		•	O	O	D
Van Kleef et al. (2009)	•			•	X	S	D
van Knippenberg et al. (2010)	•	•		•	X	S	D
Varela et al. (2008)		•	•	•	O	S	R
Volmer (2012)	•			•	X	S	D
Wellman (2013)	•		•	•	O	O	R

Note. For affect source, O = Endogenous, X = Exogenous; for Group Lifespan, S = One-Shot, O = Ongoing; for compositional (Comp.) model, D = Direct Consensus, R = Referent Shift.

coded studies for the life span of the groups examined.[3] The distribution of group life span was bimodal, with studies either examining groups of unfamiliar individuals working on a short (10- to 60-min), time-delimited task or examining standing groups in the middle of far longer projects (3 to 6 months) or continuous work. Accordingly, we classified studies as examining either *one-shot groups* or *ongoing groups*. In coding group life span, we specifically considered the nature of the group's life span—not the length of the focal research task. This is important because a few studies (e.g., Kaplan, Laport, & Waller, 2013) examined preexisting groups engaged in short simulations. Third, we coded the composition model of group affect used. We classified the composition model as *direct consensus* when the measure or manipulation of group affect targeted individual feelings and as *referent shift consensus* when the measure or manipulation targeted the group as an entity. One study (Klep et al., 2011) manipulated this variable, but because bivariate effects were not available across conditions the study was not included in analyses for composition model.

Analyses

Three undergraduate research assistants independently recorded study sample size data, variable reliability, and effect size estimates for each study. Most effect sizes were reported as correlations. Those not reported as correlations were converted into correlations. The authors cross-checked the three assistants' independent datasets with one another and resolved any discrepancies by checking the original publication. This resulted in a database comprising 105 effect sizes

[3] Although authors described the stage of life of groups and some reported the average tenure of groups, few studies provided effect sizes for the relationships among group affect, tenure, social integration, and task performance.

from 39 independent studies and derived from 2,799 groups. We prepared the database of effect sizes for analysis in the following ways. First, because some studies included multiple measures of the same construct (e.g., social integration), we created composite correlations (Hunter & Schmidt, 1990, p. 457–462) to ensure that any given study provided only one effect size for a given relationship. Second, we corrected effect sizes for attenuation due to measurement error. For aggregated variables we used interrater reliability and for individually reported variables we used Cronbach's alpha to correct for attenuation. For variables lacking reliability metrics, we used the average reliability of related variables. Third, we transformed correlations using the Fisher's z transformation (Erez, Bloom, & Wells, 1996).

We used a random effects approach (Erez et al., 1996) to estimate the bivariate relationships among group positive affect, group negative affect, social integration, and group task performance. Then, with these estimated relationships, we used meta-analytic path analysis (Viswesvaran & Ones, 1995) to test the multiple paths of our conceptual model simultaneously, account for the effects of both positive and negative affect, and compute the magnitude of indirect effects of group affect on task performance through social integration. We tested our moderation hypotheses in two ways. First, we included each moderator as a study-level covariate in random effects models. Second, we used multigroup path analysis to test for differences in indirect effects across moderator categories. For all path analyses we used the harmonic mean of the sample sizes across different cells in the correlation matrices (Viswesvaran & Ones, 1995).

Results

Table 2 presents the results of the random effects models used to examine the bivariate effects among group positive affect, group negative affect, social integration, and performance. Table 3 and Table 4, respectively, present the results of meta-analytic path models and random effects models used to test our hypotheses.

Hypothesis 1 predicts that social integration partially mediates the effects of group positive affect on task performance. As Model 1 of Table 3 shows, the results of a meta-analytic path model support Hypothesis 1. The indirect effect of group positive affect on task performance was positive and significant (B = 0.05, SE = 0.01, 95% confidence interval [CI] = 0.03, 0.08). Because this model is just-identified, an assessment of model fit is not possible. However, we can assess the fit of our conceptual model through the multigroup path models reported below.

Hypothesis 2 predicts that the effects of group negative affect on social integration and task performance are positive for affect stemming from an exogenous source, but negative for affect stemming from an endogenous source. We first tested this hypothesis using a random effects model (see Table 4). In line with our expectations, affect source significantly moderated the effects of group negative affect on social integration (B = −0.73, SE = 0.24, $p < .05$) and task performance (B = −0.33, SE = 0.13, $p <$ .05) such that the effects of exogenous group negative affect were negative and the effects of endogenous group negative affect were positive. To test our prediction that the effects on performance flow partially through social integration, we used multigroup path analysis. As shown in Model 2 of Table 3 and depicted in Figure 2, the indirect effect of group negative affect on performance through social integration was positive for an exogenous source (B = 0.05, SE = 0.02, 95% CI = 0.02, 0.08), but negative for an endogenous source (B = −0.03, SE = 0.01, 95% CI = −0.05, −0.01). Hypothesis 2 was supported.

Hypothesis 3 predicts that group life span moderates the effects of group negative affect on social integration and task performance such that the effects of negative affect are positive for one-shot groups, but negative for ongoing groups. As Table 4 shows, the effect of group negative affect on social integration was more negative in ongoing groups than one-shot groups (B = −0.48, SE = 0.24, $p < .05$). Group life span was also a significant moderator, in the expected direction, of the effect of group negative affect on task performance (B = −0.26, SE = 0.13, $p < .05$). We used multigroup path analysis to test for partial mediation (Model 3 of Table 3; Figure 2). In support of Hypothesis 3, the indirect effect of group negative affect on performance through social integration was positive for one-shot groups (B = 0.03, SE = 0.01, 95% CI = 0.01, 0.04), but negative for ongoing groups (B = −0.03, SE = 0.01, 95% CI = −0.05, −0.02).

Finally, we explored whether composition model moderated the effects of group affect on social integration and performance. As Table 4 shows, composition model significantly moderated the

Table 2
Results of Meta Analysis of Group Affect, Social Integration, and Group Performance

				95% CI				95% CI			
	k	N	M_r	Lower	Upper	M_ρ	SD_ρ	Lower	Upper	τ^2	Q
Group positive affect											
Social integration	21	1,330	0.34	0.24	0.42	0.45	0.09	0.30	0.58	0.15	184.73
Group task performance	27	1,960	0.25	0.16	0.34	0.33	0.07	0.21	0.45	0.11	269.71
Group negative affect											
Social integration	16	1,150	−0.27	−0.41	−0.12	−0.36	0.12	−0.67	−0.32	0.20	217.18
Group task performance	16	1,343	−0.17	−0.28	−0.07	−0.20	0.06	−0.32	−0.07	0.05	79.12
Other effects used in path analysis											
Social integration, performance	12	887	0.21	0.09	0.33	0.27	0.08	0.12	0.41	0.06	63.03
Positive affect, negative affect	13	1,148	−0.40	−0.52	−0.27	−0.51	0.12	−0.67	−0.32	0.17	217.18

Note. k = the number of independent effect sizes in each analysis; N = group-level sample size; M_r = estimated uncorrected correlation; M_ρ = estimated corrected correlation (for unreliability); SD_ρ = estimated variability of corrected correlation; CI = confidence interval. All estimates are significant at $p <$ .05, two-tailed.

Table 3
Results of Meta-Analytic Path Analyses

	M1: All		M2: Source of affect				M3: Group lifespan			
			Exogenous		Endogenous		One-Shot		Ongoing	
	B	*SE*	B	*SE*	B	*SE*	B	*SE*	B	*SE*
Direct effects										
a. PA with NA	−0.51	0.03	−0.51	0.03	−0.51	0.03	−0.51	0.03	−0.51	0.03
b. Social Integration to Performance	0.15	0.03	0.10	0.03	0.10	0.03	0.12	0.03	0.12	0.03
c. PA to Social Integration	0.36	0.03	0.62	0.05	0.33	0.03	0.49	0.05	0.36	0.03
d. PA to Performance	0.25	0.03	0.23	0.06	0.34	0.03	0.22	0.05	0.33	0.03
e. NA to Social Integration	−0.18	0.03	0.53	0.05	−0.31	0.03	0.23	0.05	−0.28	0.03
f. NA to Performance	*−0.02*	*0.03*	0.13	0.06	*−0.06*	*0.03*	*0.08*	*0.05*	*−0.05*	*0.03*
Indirect effect via social integration										
PA: Indirect effect (c × b)	0.05	0.01	0.06	0.02	0.03	0.01	0.06	0.01	0.04	0.01
NA: Indirect effect (e × b)	−0.03	0.01	0.05	0.02	−0.03	0.01	0.03	0.01	−0.03	0.01

Note. Parameter estimates are coefficients from path models estimated using meta-analytic correlation matrices. PA = positive affect; NA = negative affect. All entries except those in italics are significantly different from zero at $p < .05$, two-tailed. M1 Fit: Model is just identified. M2 Fit: $\chi^2 = 3.64$, $df = 2$, comparative fit index (CFI) = 1.00, root mean square error of approximation (RMSEA) = 0.03, standardized root mean square residual (SRMR) = .01, Akaike information criteria (AIC) = 14988.87. M3 Fit: $\chi^2 = 5.28$, $df = 2$, CFI = 1.00, RMSEA = 0.05, SRMR = .01, AIC = 15653.78.

effects of group negative affect on social integration (B = −0.56, *SE* = 0.18, $p < .05$), such that group negative affect had a more negative relationship with social integration for a referent shift than a direct consensus composition model.

Discussion

A tenet of social functional perspectives is that the tendency for people to share feelings emerged as a primitive mechanism of social connection, binding individuals together into groups that enhanced their odds of survival (Fischer & Manstead, 2008; Keltner & Haidt, 1999; Spoor & Kelly, 2004). Scholars have argued that both shared positive and shared negative feelings can serve this function and influence group task performance. Yet, while theoretical arguments and empirical evidence are relatively coherent for group positive affect, theory and research have painted a murky picture of how group negative affect influences group functioning. The results of our meta-analysis confirm relatively straightforward effects of group positive affect and clarify how group negative affect influences social integration and group performance.

A key contribution of our findings is that the effects of group negative affect on social integration and task performance are context-dependent. In some situations—such as when negative feelings are sparked by an external source or when unfamiliar

Table 4
Results of Mixed Models Examining Moderators of The Effects of Group Positive Affect and Group Negative Affect

					95% CI				95% CI	
	k	*N*	$B_{intercept}$	*SE*	Lower	Upper	$B_{moderator}$	*SE*	Lower	Upper
Group positive affect										
Social integration as criterion										
Endogenous source (vs. exogenous)	21	1,330	0.37*	0.17	0.04	0.70	0.17	0.20	−0.23	0.56
Ongoing group (vs. one-shot)	21	1,330	0.39*	0.15	0.10	0.69	0.15	0.19	−0.22	0.52
Referent shift (vs. direct consensus)	21	1,330	0.43*	0.12	0.18	0.67	0.19	0.18	−0.17	0.55
Group task performance as criterion										
Endogenous source (vs. exogenous)	27	1,960	0.21*	0.10	0.01	0.40	0.25+	0.14	−0.02	0.51
Ongoing group (vs. one-shot)	27	1,960	0.23*	0.10	0.02	0.43	0.20	0.14	−0.07	0.47
Referent shift (vs. direct consensus)	27	1,960	0.35*	0.09	0.18	0.53	0.00	0.16	−0.31	0.31
Group negative affect										
Social integration as criterion										
Endogenous source (vs. exogenous)	16	1,150	0.22	0.21	−0.20	0.63	−0.73*	0.24	−1.20	−0.27
Ongoing group (vs. one-shot)	16	1,150	−0.02	0.21	−0.44	0.40	−0.48*	0.24	−0.96	0.00
Referent shift (vs. direct consensus)	16	1,150	−0.10	0.13	−0.35	0.16	−0.56*	0.18	−0.92	−0.20
Group task performance as criterion										
Endogenous source (vs. exogenous)	16	1,343	0.05	0.11	−0.18	0.27	−0.33*	0.13	−0.59	−0.07
Ongoing group (vs. one-shot)	16	1,343	−0.03	0.11	−0.24	0.19	−0.26*	0.13	−0.51	0.00
Referent shift (vs. direct consensus)	16	1,343	−0.18+	0.10	−0.37	0.00	−0.04	0.13	−0.30	0.22

Note. *k* = the number of independent effect sizes in each analysis; *N* = group-level sample size; $B_{intercept}$ represents the coefficient for the intercept in the mixed model; $B_{moderator}$ represents the coefficient for the moderator variable in the mixed model. CI = confidence interval.
* $p < .05$. + $p < .10$ two-tailed.

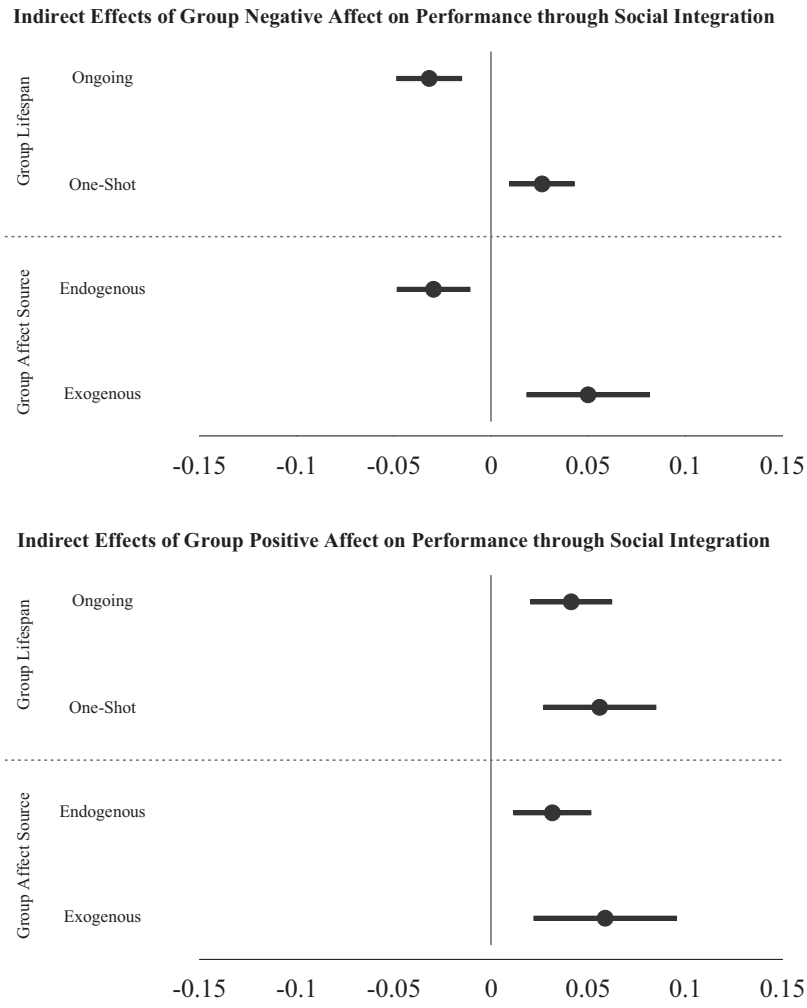

Figure 2. Estimated conditional indirect effects of group affect on group performance through social integration.

individuals come together to work on a short, time-delimited task—shared negative feelings can promote social integration and, indirectly, enhance group task performance. Our findings regarding affect source build upon and extend theory and research from several traditions, including threat and affiliation (Gump & Kulik, 1997; Schachter, 1959) and the functional role of emotions in delimiting group boundaries (Durkheim, 1912). In addition, our finding that shared feelings sparked by an external source strengthen social integration, whereas shared feelings that emerge from within a group weaken social integration, corroborates and extends research from a community of fate perspective (e.g., Dineen et al., 2007). Our results underscore the importance of theorizing about not just group characteristics as antecedents of group solidarity, but also the locus of stimuli that precipitate group members' attitudes, cognitions, and affective states.

Furthermore, we find that shared negative feelings influence social integration differently in one-shot compared to ongoing groups. For one-shot groups, the fact that members share a feeling state may provide a primitive impetus to engage in affiliative behavior, initiating the development of social integration. Ongoing groups have likely already gone through this early process of group formation and affiliation. As such, the fact that they share negative feelings may lead group members to appraise the group itself as an adverse stimulus and something from which to withdraw. As there is currently scant research on the intersection of affect and group development over time, a promising direction for future research is to examine the changing function of group negative affect over time in groups (e.g., Knight, in press) and more precisely document this switch from the function of convergence to the possible dysfunction of negativity.

In contrast to the context-sensitive effects of negative feelings, the results of our meta-analysis indicate that shared positive feelings are broadly beneficial for cultivating and sustaining social integration in groups, thereby enhancing task performance. As Tables 3 and 4 show—and Figure 2 clearly depicts—we found no significant moderating effects of affect source or group life span on the effects of group positive affect on social integration and task performance. With the caveat that we are interpreting a null result, the consistent lack of significant moderating effects paints a clear picture of the broad and

diffuse effects of positive feelings on group functioning; group positive affect seems to offer universal benefits for the internal social fabric of a group.

The different patterns of results that we observe for positive and negative affect suggest that there are basic differences in their functionality. Whereas positive feelings may be broadly beneficial for groups—across a wide range of situations and throughout the course of group life—negative feelings may be beneficial in a narrower range of situations. Perhaps a good analogy for the functionality of group negative affect is the human stress response. When activated by situational threats, an acute stress response is highly functional. Yet, when activated chronically, the stress response can have adverse physiological effects. For groups, negative affect is most beneficial when localized in time and constructed in response to a specific external stimulus. Over time, though, negative affect emanating from within a group may erode social integration.

Beyond these theoretical implications, our results also offer methodological implications for researchers studying group affect. We found significant variability in existing research in the composition models that researchers used in studying group affect. Although composition model did not significantly influence the effects of group positive affect on social integration and group performance, we found that, relative to a direct consensus model, a referent shift model yielded effects of negative affect on social integration that were significantly more negative. One reason for these effects might be that a referent shift approach taps more directly into the interpersonal and collective aspects of group affect, which may be more intense (Shteynberg et al., 2014) and more closely related to interpersonal dynamics. Following the lead of multilevel theorists (e.g., Klein & Kozlowski, 2000), we suggest that researchers think carefully about which composition model best aligns with their conceptualization of shared feelings. If focusing on shared individual affective states, an additive model is most appropriate. If focusing, however, on the affective tone of group life, a referent shift model is likely most appropriate.

Practically, our findings suggest that leaders should attend closely to the affective tone of teams. Although scholars have highlighted the critical role that leaders play in managing emotional dynamics (e.g., Sy & Choi, 2013; Sy et al., 2005), the results of our meta-analysis clarify specifically which shared feelings leaders should seek to cultivate and nurture in their groups and teams. Shared positive feelings, which managers can induce in their teams through their own emotional expressions (Sy & Choi, 2013), offer the most certain benefit, broadly enhancing social integration and task performance. Our results suggest that leaders should tread carefully in cultivating shared negative feelings among group members. When group members attribute negativity to an external source—such as a rival team or a competing firm—group negative mood can enhance social integration and performance. Over the long-term, however, frequent inductions of negative mood may undermine social integration and performance.

The conclusions that we draw are bounded by the limitations of our meta-analysis, which suggest directions for future research. First, our analysis is based on the available empirical literature. Although equivalent to other theory-testing studies of group dynamics that use meta-analysis (e.g., Balkundi & Harrison, 2006), our sample size was relatively small. Associated depressed statistical power may have led to null findings regarding contextual moderators of the effects of positive affect. Further, although we included unpublished work, our conclusions might differ if unavailable effect sizes differ systematically from those that are available in published research. Although we were able to leverage heterogeneity across existing studies to test the role of two theoretically meaningful moderators, the limited pool of studies inhibited us from crossing these. We could not, for example, study whether affect from an exogenous source has different effects in ongoing compared to one-shot groups. Research is needed to build upon our findings and further unpack how the effects of group affect vary across different kinds of situations.

Second, and related, we adopted a relatively high level of theoretical abstraction in conducting our meta-analysis (Viswesvaran & Ones, 1995), examining several interrelated constructs under the umbrella of social integration. We expect that the mechanisms suggested by a social functional perspective operate in the same way across the constructs we examined (e.g., cohesion, cooperation). Thus, we believe our approach aligns with Fishbein and Ajzen's (1974) compatibility principle and the idea that constructs examined in a meta-analysis should be aligned in their levels of theoretical abstraction (Balkundi & Harrison, 2006; Ones & Viswesvaran, 1996). However, research is needed to validate these assumptions.

Third, we cannot draw causal conclusions from our study. Although our database of effect sizes includes several experimental studies, in which researchers manipulated group affect and observed effects on social integration, our database also includes correlational studies. Disentangling the causal ordering of group affect and social integration is a major need for future research. Group affect, social integration, and task performance are likely reciprocally related to one another as groups move through time and across performance episodes (Kelly & Barsade, 2001; Walter & Bruch, 2008). Indeed, theory and research suggest that individuals emotionally converge with fellow group members or those with whom they share a positive interpersonal bond (Barsade & Knight, in press; Bartel & Saavedra, 2000). That is, the members of existing groups are especially attuned to one another's emotional responses and, therefore, are likely to be infected by other members' affective states (Hatfield et al., 1994). However, research also shows that convergence itself is a driver of social integration, leading to the formation of group boundaries that may never before have existed (Barsade, 2002; Tickle-Degnen & Rosenthal, 1990). Although it is tempting to ruminate on the question, "Which comes first?," the answer is most likely "both." As several scholars have noted, the relationship between affect and social context is bidirectional and reciprocal (Fischer & Manstead, 2008; Fischer & Van Kleef, 2010; George, 2002; van der Schalk et al., 2011). Rather than focusing on identifying one causal direction as having primacy, we suggest that empirical efforts that unpack the reciprocal and dynamic relationship between group affect and social integration are likely to be most fruitful in advancing theory. Researchers might, for example, investigate the conditions under which inductions of emotional similarity override prior group memberships or how nonaffective group boundaries permit and enable affective divergence without sacrificing social integration. To address such questions, studies that track the interplay of group affect and social integration over time are sorely needed.

In the decades since George's (1990) pioneering research on the existence and effects of group affect, scholars have made significant strides in elucidating how shared feelings influence group function-

ing. Grounded in a social-functional perspective, our meta-analysis of the group affect literature reinforces the idea that shared positive feelings offer diffuse benefits for a group's social fabric; group positive affect promotes social integration and task performance across situations. The effects of shared negative feelings, however, are more nuanced and sensitive to contextual factors, such as the source of the feelings and the life span of the group.

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(*Appendix follows*)

Appendix A

Effect Sizes and Reliability Coefficients for Relationships Included in Meta Analysis

Study	Variable 1	Variable 1 Reliability	Variable 2	Variable 2 Reliability	*N*	r	Composite
Barsade (2002)	PA	0.85	SI	0.96	29	0.42	Y
Bashshur et al. (2011)	NA	0.88	TP	0.82	154	−0.41	N
Bashshur et al. (2011)	PA	0.88	NA	0.61	154	−0.67	N
Bashshur et al. (2011)	PA	0.61	TP	0.82	154	0.47	N
Bramesfeld & Gasper (2008)	PA	0.81	SI	0.73	30	0.09	N
Bramesfeld & Gasper (2008)	PA	0.81	TP	1.00	30	0.48	N
Bramesfeld & Gasper (2008)	PA	0.81	SI	0.85	36	0.18	N
Bramesfeld & Gasper (2008)	PA	0.81	TP	1.00	36	0.38	N
Chi et al. (2011)	PA	0.91	SI	0.92	85	0.32	N
Chi et al. (2011)	PA	0.91	TP	0.91	85	0.36	N
Chi et al. (2011)	SI	0.92	TP	0.91	85	0.31	N
Choi & Cho (2011)	NA	0.88	SI	0.88	74	−0.64	N
Cole et al. (2008)	NA	0.91	SI	0.88	61	−0.42	N
Cole et al. (2008)	NA	0.88	TP	0.83	61	−0.40	N
Cole et al. (2008)	SI	0.91	TP	0.83	61	−0.09	N
Cole et al. (2011)	NA	0.85	SI	0.88	79	−0.05	N
Dimotakis et al. (2012)	PA	0.61	SI	0.73	21	0.27	N
Dimotakis et al. (2012)	PA	0.61	TP	1.00	21	0.57	N
Dimotakis et al. (2012)	SI	1.00	TP	0.73	21	0.12	N
Erdheim (2007)	NA	0.88	SI	0.92	61	−0.08	N
Erdheim (2007)	NA	0.88	TP	0.93	61	0.13	N
Erdheim (2007)	PA	0.85	NA	0.88	61	−0.13	N
Erdheim (2007)	PA	0.85	SI	0.92	61	0.21	N
Erdheim (2007)	PA	0.85	TP	0.93	61	0.03	N
Erdheim (2007)	SI	0.92	TP	0.93	61	−0.02	N
Gamero et al. (2008)	NA	0.88	SI	0.85	156	−0.22	N
Gamero et al. (2008)	PA	0.88	NA	0.85	193	−0.59	N
Gamero et al. (2008)	PA	0.85	SI	0.85	156	0.44	N
George (1990)	NA	0.87	SI	0.88	26	−0.57	N
George (1990)	PA	0.87	NA	0.87	26	−0.22	N
George (1990)	PA	0.87	SI	0.88	26	0.17	N
George (1995)	PA	0.92	TP	0.88	41	0.35	N
González-Romá & Gamero (2012)	PA	0.85	TP	0.93	59	0.21	N
Grawitch, Munz, & Kramer (2003)	NA	0.80	SI	0.85	57	0.38	N
Grawitch, Munz, & Kramer (2003)	NA	0.80	TP	0.98	57	−0.01	N
Grawitch, Munz, & Kramer (2003)	PA	0.81	SI	0.85	57	0.18	N
Grawitch, Munz, & Kramer (2003)	PA	0.81	TP	0.98	57	0.46	N
Grawitch, Munz, Elliott, & Mathis (2003)	PA	0.81	TP	0.86	54	0.33	N
Hentschel et al. (2013)	NA	0.95	SI	0.52	38	−0.62	Y
Hentschel et al. (2013)	PA	0.92	NA	0.95	38	−0.69	N
Hentschel et al. (2013)	PA	0.92	SI	0.52	38	0.60	Y
Hmieleski et al. (2012)	NA	0.92	SI	0.83	179	−0.60	N
Hmieleski et al. (2012)	NA	0.83	TP	1.00	179	0.01	N
Hmieleski et al. (2012)	PA	0.83	NA	0.91	179	−0.25	N
Hmieleski et al. (2012)	PA	0.92	SI	0.91	179	0.36	N
Hmieleski et al. (2012)	PA	0.91	TP	1.00	179	0.08	N
Hmieleski et al. (2012)	SI	0.92	TP	1.00	179	−0.07	N
Iannone (2011)	NA	0.80	SI	0.89	60	0.20	Y
Iannone (2011)	NA	0.80	TP	0.82	60	0.11	N
Iannone (2011)	PA	0.81	SI	0.89	60	0.76	Y
Iannone (2011)	PA	0.81	TP	0.82	60	−0.16	N
Jones & Kelly (2009)	PA	0.81	TP	0.74	80	−0.13	N
Kaplan et al. (2012)	NA	0.93	TP	0.88	61	−0.56	N
Klep et al. (2011)	PA	0.81	SI	0.83	70	−0.03	N
Klep et al. (2011)	PA	1.00	TP	1.00	70	0.17	Y
Knight (2009)	NA	0.94	SI	0.85	33	−0.31	N
Knight (2009)	NA	0.94	TP	1.00	33	−0.37	N

(*Appendix continues*)

Appendix (*continued*)

Study	Variable 1	Variable 1 Reliability	Variable 2	Variable 2 Reliability	*N*	r	Composite
Knight (2009)	PA	0.90	NA	0.94	33	−0.74	N
Knight (2009)	PA	0.90	SI	0.85	33	0.54	N
Knight (2009)	PA	0.90	TP	1.00	33	0.41	N
Knight (2009)	SI	0.85	TP	1.00	33	0.39	N
Lin et al. (2014)	NA	0.93	SI	0.91	47	−0.26	N
Lin et al. (2013)	PA	0.95	NA	0.93	47	−0.10	N
Lin et al. (2013)	PA	0.95	SI	0.91	47	0.56	N
Mason (2006)	PA	0.79	SI	0.72	24	0.01	N
Mason & Griffin (2005)	NA	0.55	SI	0.71	56	−0.19	Y
Mason & Griffin (2005)	NA	0.55	TP	0.87	51	−0.13	N
Mason & Griffin (2005)	PA	0.63	NA	0.55	66	−0.28	N
Mason & Griffin (2005)	PA	0.63	SI	0.71	56	0.30	Y
Mason & Griffin (2005)	PA	0.63	TP	0.87	51	0.41	N
Mason & Griffin (2005)	SI	0.71	TP	0.87	51	0.39	Y
Mitchell et al. (2014)	NA	0.88	TP	0.94	75	−0.30	N
Rego et al. (2013)	NA	0.78	TP	0.45	106	0.04	Y
Rego et al. (2013)	PA	0.78	NA	0.71	106	−0.40	N
Rego et al. (2013)	PA	0.71	TP	0.45	106	0.44	Y
Rhee (2006)	PA	0.85	TP	0.59	72	0.33	Y
Seong & Choi (2014)	PA	0.94	SI	0.81	96	0.22	N
Seong & Choi (2014)	PA	0.94	TP	0.84	96	0.02	N
Seong & Choi (2014)	SI	0.81	TP	0.84	96	0.40	N
Tanghe et al. (2010)	NA	0.89	SI	0.65	71	−0.12	Y
Tanghe et al. (2010)	NA	0.89	TP	0.89	71	0.00	N
Tanghe et al. (2010)	PA	0.85	NA	0.89	71	−0.19	N
Tanghe et al. (2010)	PA	0.85	SI	0.65	71	0.30	Y
Tanghe et al. (2010)	PA	0.85	TP	0.89	71	0.19	N
Tanghe et al. (2009)	SI	0.65	TP	0.89	71	0.42	Y
Teng & Luo (in press)	PA	0.85	TP	0.79	123	0.64	N
Tsai et al. (2012)	NA	0.93	SI	0.91	68	−0.18	N
Tsai et al. (2012)	NA	0.93	TP	0.87	68	−0.19	N
Tsai et al. (2012)	PA	0.92	NA	0.93	68	−0.28	N
Tsai et al. (2012)	PA	0.92	SI	0.91	68	0.23	N
Tsai et al. (2012)	PA	0.92	TP	0.87	68	0.09	N
Tsai et al. (2012)	SI	0.91	TP	0.87	68	0.18	N
Tu (2009)	NA	0.90	TP	0.94	106	−0.31	N
Tu (2009)	PA	0.92	NA	0.90	106	−0.36	N
Tu (2009)	PA	0.92	TP	0.94	106	0.34	N
Van Kleef et al. (2009)	PA	0.84	TP	0.93	35	0.39	N
van Knippenberg et al. (2010)	NA	0.80	TP	1.00	116	−0.06	N
van Knippenberg et al. (2010)	PA	0.81	TP	1.00	117	−0.12	N
Varela et al. (2008)	NA	0.88	SI	0.48	84	−0.40	Y
Varela et al. (2008)	NA	0.88	TP	0.82	84	−0.25	N
Varela et al. (2008)	SI	0.69	TP	0.82	84	0.39	N
Volmer (2012)	PA	0.81	TP	0.93	21	−0.15	N
Wellman (2013)	PA	0.86	SI	0.32	87	0.45	Y
Wellman (2013)	PA	0.86	TP	0.32	74	0.03	Y
Wellman (2013)	SI	0.32	TP	0.32	77	0.05	Y

Note. PA = Group positive affect; NA = Group negative affect; SI = Social integration; TP = Task performance. Composite indicates whether relationship is a composite correlation (N = No, Y = Yes).

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