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**Article**

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*Article*

## Catching Leaders' Mood: Contagion Effects in Teams

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**Abstract:** Much of the behavior at work takes place within teams. Leaders of teams experience different feelings that, in turn, can have an impact on how team members feel and perform. This study examined the effects of leaders' mood on individual team members' mood, group affective tone, and team outcomes (actual team performance, potency, and goal commitment) in a laboratory study, with a sample of 63 students working in three-person teams. Furthermore, the study investigated the mediating role of group affective tone in the leaders' mood–team outcomes relationship. Results demonstrated that leaders influence team members' individual mood, group affective tone, actual team performance, and potency. Moreover, group affective tone mediated the relationship between team leaders' mood and potency. Taken together, the findings suggest that in order to enhance subordinates' work experience and to attain desired outcomes, leaders should be aware of their mood and its potential effects.

**Keywords:** leadership; mood contagion; group affective tone; potency; goal commitment; actual team performance; auditory mood induction

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### 1. Introduction

Our feelings and behavior can be strongly influenced by our interactions with others. In today's work environments, with an increasing emphasis on teamwork, team leaders are considered to play an important role in influencing subordinates' mood and team outcomes [1,2]. Recently, research interest concerning the role of team leaders' mood on team members' mood and team outcomes has been

rapidly growing [3–8]. For example, Sy and colleagues [6] found that team leaders' positive mood increased team members' individual mood and group affective tone (defined as the “consistent or homogeneous affective reactions within a group” [9]; p. 108), and was positively related to group processes (*i.e.*, effort and group coordination) in a sample of 56 self-managed student teams. In a field study with schoolteachers, Johnson [10] found that leader affect at work related to follower affect at work via emotional contagion, and influenced followers' performance (*i.e.*, organizational citizenship behavior). Leaders are considered to be particularly important with regard to how team members feel and perform because they (a) have the power and authority to instruct team members; (b) act as role models; and (c) are depended on by team members [11]. In comparison to other team members, leaders are considered to be more effective in transferring mood to others and in influencing team outcomes due to their salience within teams [12]. It has also been shown in research on dating partners that the more powerful partner influences the other partner, yet the reverse is not true [11,13]. Because team leaders are usually more powerful than team members, it is particularly important to explore and better understand the effects of leaders' mood on team members' feelings and outcomes.

As a theoretical framework, I refer to Affective Events Theory (AET) [14]. AET suggests that positive and negative workplace events function as affective events and can affect employees' feelings, attitudes, and performance. Adapting AET to the present study, leaders' mood can be seen as an event that has potential implications for team members' feelings and outcomes [10]. In line with ideas from positive psychology [15,16], with an emphasis on enabling people's flourishing, I focus the present study on leaders' positive mood. Consistent with past theorizing, I define *mood* as a generalized feeling state [17–19]. Compared to emotions, mood is a less intense state [20]. I will refer to effects of leaders' mood on members' mood as *mood contagion*, which is defined as “the tendency to ‘catch’ (experience/express) another person's emotions (“his or her emotional appraisals, action tendencies, and instrumental behaviors”)” [21]. Neumann and Strack describe mood contagion as a two-stage mechanism that comprises the imitation of another person's emotional behavior [22], which in turn leads to a congruent mood state [22–24]. Simply being exposed to an emotional voice, even when kept cognitively busy, can affect participants' mood and has been found to occur in different contexts [25].

The present study aims to accomplish three goals: The first goal is to complement the growing—but still scant—empirical research on the effects of leaders' mood on followers by investigating leaders' mood effects in a German sample. Earlier studies primarily have used Anglo-American samples (e.g., [4–6,10,13]), with a few samples from the Netherlands and Korea (e.g., [7,8]). Although there are several similarities of leadership within different societal cultures (cf. for instance findings from the GLOBE [Global Leadership and Organizational Behavior Effectiveness] project) [26], there are also some notable differences. Thus, leadership effects might vary across different cultures. For example, the power distance, which refers to how far society accepts power inequality among individuals [27,28], has been found to be higher in Germany compared to the United States and the Netherlands [29,30]. Power distance, in turn, has consequences for employees' expectations and evaluations of leader behavior. Higher power distance implies that team members expect more guidance and instructions from their leaders, and comply more with their supervisors without question [31]. Given the relatively high power distance in Germany, it is likely that effects transfer from leaders to followers. The present study aims to test mood contagion effects from leaders to followers in a German sample in order to broaden our knowledge of whether findings from earlier studies in different cultures can be

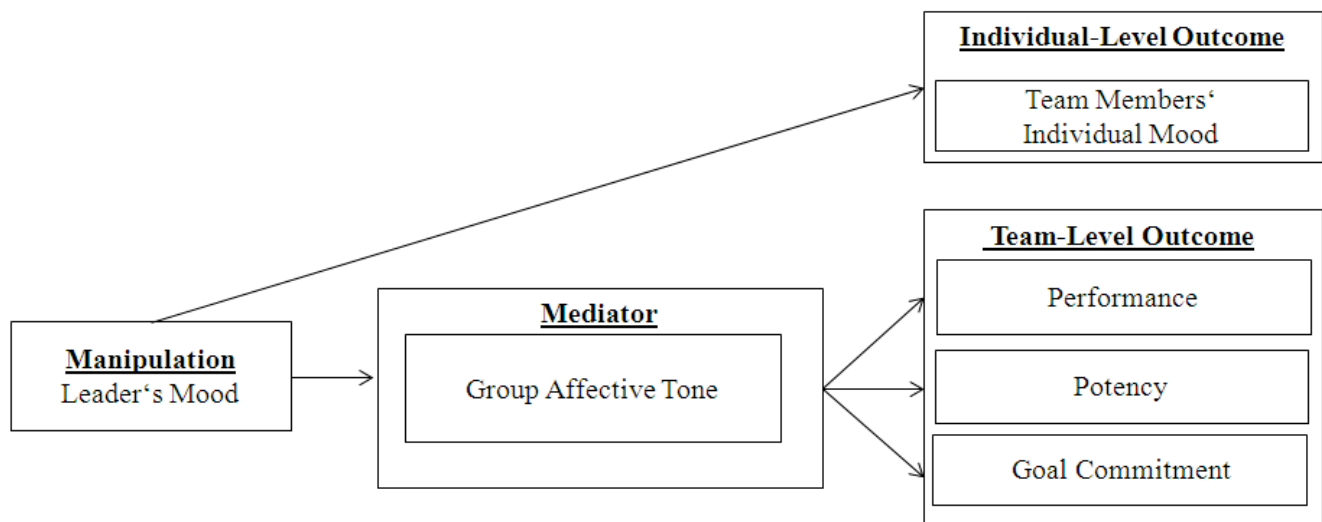
replicated in a German sample or whether there are major differences due to societal cultures (e.g., power distance).

Second, the present study aims to broaden the scope of leaders' potential impact on followers by examining the influence of leaders' mood on social-cognitive and motivational variables [32,33]; namely, potency and goal commitment. Potency is defined as "the collective belief of a group that it can be effective" [34] and postulates that a group is optimistic about its abilities and is capable of solving upcoming group tasks. A key difference between potency and collective efficacy is that the former refers to any tasks and demands whereas the latter is more task-specific [35]. Goal commitment has been defined as "one's attachment to or determination to reach a goal" [32] and includes the intention to put effort into goal attainment and to work persistently toward a goal [36]. It also refers to commitment to an assigned goal [37]. Increasing team potency and goal commitment are important leadership tasks [38,39], and both should be particularly malleable by team leaders. A reason for leaders' ability to influence potency and goal commitment is that leaders are at the center of team members' attention and therefore have the power to transfer their beliefs about the team's capability, as well as the standards for goal attainment, to team members.

The third goal of the study is to better understand *how* leaders' mood impacts team outcomes. Building on earlier research on contagion effects [3,6–8], the present study examines the mediating role of group affective tone [9]. Group affective tone is different from team members' individual mood because it focuses on consistent reactions within a group and is a homogeneous feeling state that result from comparison with other team members [9]. In contrast to an earlier field study [7], the present study examines the mediational effect of group affective tone in a laboratory study, with strong control over potential third variables that might interfere with the research questions. Moreover, the present study—in addition to team performance and goal commitment—takes potency into account when examining group affective tone as a mediator. Potency is important to consider because it helps to strengthen a group's motivation [35].

Theoretically, replicating findings on mood contagion effects from leaders to followers with a German sample adds to the *affective revolution* in I/O-psychology [40] and points to the special importance of leaders within teams. Expanding the scope of potential outcomes of team leaders' mood and exploring the teams' group-level mood as a mediator further broadens our understanding of leaders' impact on team outcomes. Practically speaking, knowing that leaders' mood has an impact on followers' feelings and team outcomes points to the necessity of making leaders aware of their *affective influence*. Taken together, the present study investigates the effects of leaders' mood on followers' mood (*i.e.*, individual members' mood and group affective tone) and team outcomes (*i.e.*, actual team performance, potency, and goal commitment), and examines the mediating role of mood contagion (*i.e.*, group affective tone). The research model is depicted in Figure 1.

Figure 1. Theoretical model.



## 2. Leader Mood, Team Members' Individual Mood, and Group Affective Tone

Past research has found mood contagion effects in leadership contexts. For example—and as mentioned above—Sy *et al.* found that leaders' positive mood transmitted to followers [6]. Other studies have also found empirical evidence for the effects of leaders' mood on followers [6,8,10]. Sy and colleagues [6] suggested that team leaders are ideal transmitters of mood because team members pay special attention to the leader's mood. In addition, they reported evidence showing that team members readily assume team leaders' mood [41] and that lower status individuals are more prone to acquire the mood of higher status members than *vice versa* [11]. Moreover, leaders are considered to be able to transmit their moods to team members easily because they have more opportunities to express their mood to team members, for example, when explaining a task or when being approached by team members for instructions or feedback. Leaders are thought to transfer their mood to followers by mood contagion, which is the automatic and unconscious transfer of mood between individuals [22]. Building on considerations and empirical findings, I assume that team members with a leader in a positive mood will experience more positive mood compared to team members with a leader in a negative mood.

*Hypothesis 1:* Team members with leaders in a positive mood experience a more positive mood than team members with leaders in a negative mood.

Apart from the effects of leaders' mood on team members' mood at the individual level, I also expect effects from leaders' mood on team members' mood at the group level (*i.e.*, group affective tone). In comparison to team members' individual mood, which can be different among team members, group affective tone involves a certain level of homogeneity among team members with regard to their feelings. Consistency of mood states among team members can be expected due to group socialization processes, team norms, standards, and values, and to the exposure of team members to similar affective events, tasks, and demands [42]. People engage in social comparison processes, which mean that people compare how their own mood compares to other team members' mood [3]. As team members allocate their attention to the team leader, there should be a convergence

of mood in teams. Similar to the assumptions about mood contagion effects of team leaders' to followers' individual mood, I thus postulate that team leaders influence the team's aggregate of individual members' mood, or rather, group affective tone.

*Hypothesis 2:* Teams with leaders in a positive mood will have a more positive group affective tone compared to teams with leaders in a negative mood.

### 3. Leaders' Mood and Team Outcomes

Mood has been linked to a variety of performance-related outcomes. Being in a positive mood was found to positively relate to helping behavior, creativity, successful negotiation strategies, and efficient decision making [43–48]. Especially important for organizations, positive mood has also been linked to occupational performance [49,50]. Positive mood signals a positive person-environment relationship, and is associated with effortless processing strategies, increases the expectation of positive events, and enhances one's self-efficacy [51,52]. Leaders who express positive mood are more liked [53], and the positive mood could also be interpreted by followers as being on the right track, thus increasing work motivation [54]. AET [14] would suggest that leaders' positive mood is a positive event that triggers positive outcomes, including performance. Empirical findings have also shown that leaders' positive mood relates positively to team performance. For instance, George and Bettenhausen [55] found that leader positive mood was positively related to work group sales performance. Likewise, Chi and colleagues [7] found that leaders' positive mood was positively associated with sales teams' performance. Particularly in settings such as the present study, where I framed the task as fun and where it was conducted in an enjoyable setting, positive mood has been shown to be beneficial [45,56]. Accordingly, I postulate the following:

*Hypothesis 3:* Teams with leaders in a positive mood will show higher performance compared to teams with leaders in a negative mood.

Potency is defined as the team's belief in being capable and effective [57]. Teams working with leaders in a positive mood will trust their groups' capabilities more than teams working with leaders in a negative mood. According to the social functional approach of emotion [58–60], people use other people's affective states as information about the other person's goals, attitudes, and intentions, which in turn influences their own thoughts, attitudes, and actions. According to the social functional approach of emotion, the leader's positive mood signals to team members that they are on the right track and that the leader is satisfied with the team's progress. Thus, teams with a leader in a positive mood are likely to have higher potency scores than teams with a leader in a negative mood. Moreover, feeling competent and able to solve problems will result in mastery experience and positive feelings [52,61–63]. In sum, I propose that team leaders' mood should foster a team's potency.

*Hypothesis 4:* Teams with leaders in a positive mood will have higher potency compared to teams with leaders in a negative mood.

Goal commitment suggests that team members are motivated to try to achieve goals [37]. Subordinates who work together with a leader in a positive mood will utilize their energy to focus on the team task, since they feel encouraged by the leader. A leader in a positive mood is able to

increase team members' self-esteem, which has been found to be one of the core predictors of goal commitment [64]. Leaders in a positive mood are likely to focus on positive aspects of the team task and convey pleasant feelings, which makes team members believe that the team goal is important and valuable, thus increasing the team members' goal commitment [7]. Analogous to the considerations about the team leaders' mood-potency relationship, positive leader mood signals optimism about task completion and gives team members the impression of being on the right track. Taken together, I posit the following:

*Hypothesis 5:* Teams with leaders in a positive mood will have a higher goal commitment compared to teams with leaders in a negative mood.

#### **4. Group Affective Tone as Mediator in the Leaders' Mood and Team Outcomes Relationship**

Besides the direct effects of leaders' mood on team outcomes, it is important to better understand how leaders influence team outcomes. According to AET, leaders' positive mood can be regarded as a positive event. As a consequence, followers' group-level mood should be raised, which in turn should lead to a variety of positive team outcomes. As outlined earlier, leaders' positive mood is expected to influence group affective tone (cf. Hypothesis 2). There are several reasons to assume that group affective tone, in turn, should partially mediate the relationship between leaders' mood and team outcomes (*i.e.*, team performance, potency, and goal commitment).

With respect to team performance, group affective tone should be favorable because positive group affective tone helps team members to broaden their scope of attention, cognition, and action [15,16], and thus increases performance when the context is framed as joyful and pleasant [45]. On the team level, corresponding empirical evidence has found that positive group-affective tone is positively related with team performance [7,65].

Likewise, there should be a positive association between group affective tone and potency. Research has shown that positive mood relates positively with self-evaluations [66], such that individuals in a positive mood evaluate themselves more favorably compared to individuals in a neutral or negative mood. Therefore, I expect that teams with a more positive group affective tone should feel more confident and optimistic about their capabilities; that is, they will have a higher potency.

For goal commitment, I also expect a positive group affective tone-goal commitment relationship. Building on the mood as information model [51,67,68], which suggests that positive mood is used as feedback to be able to attain a goal, teams with a more positive group affective tone should show higher goal commitment. Accordingly, there is research on the individual level that found that positive affect increases goal commitment [69,70]. Taken together and building on the above-mentioned theoretical considerations and empirical findings, I expect group affective tone to partially mediate the impact of team leaders' mood on team outcomes.

*Hypothesis 6a–c:* Positive group affective tone will partially mediate the relationship between leaders' mood and (a) team performance, (b) potency, and (c) goal commitment.

## 5. Method

### 5.1. Sample

Twenty German university students (15 males and 5 females) voluntarily participated in the pretest. On average, participants were in their second year of studies ( $M = 3.17$ ,  $SD = 2.12$ ), and were 24.05 years of age ( $SD = 5.33$ ). Participants were randomly assigned to one of two mood conditions: positive and negative. More specifically, participants in the positive mood condition listened to an optimistic piece of music: Beethoven's 9th symphony, "Ode an die Freude" [71]. In contrast, participants in the negative mood condition listened to a dark piece of music: Prokofiev's piece "Field of death" [72]. Both pieces of music lasted about 6.5 minutes and were presented via headphones. Music clips have been shown to successfully elicit positive and negative mood [73,74].

### 5.2. Measures

*Mood.* Participants' individual mood was assessed with the Positive and Negative Affect Scale (PANAS; [75]). Participants indicated on 5-point Likert-type scales (1 = *not at all* to 5 = *very much*) the degree to which they felt each affective state described by the adjectives (positive affect: e.g., enthusiastic, alert, active; negative affect: e.g., nervous, distressed, scared) represented their own mood at the moment. I created a mood score by adding the scores of the positive affect scale to those of the reverse coded negative affect scale. Mood was assessed after listening to the respective music piece ( $\alpha = 0.85$ ).

### 5.3. Results

An ANCOVA with participant gender as a covariate revealed that participants in the positive mood condition reported higher mood scores ( $M = 4.02$ ,  $SD = 0.43$ ) compared to participants in the negative mood condition ( $M = 3.61$ ;  $SD = 0.51$ ),  $F(1,17) = 4.46$ ,  $p < 0.01$ . Thus, the mood manipulation was successful and was also used in the main study.

### 5.4. Sample

A total of 63 university students (33 women and 30 men) from various majors of a large German university volunteered and formed 21 same-gender, three-person teams. On average, participants were in their second year of studies ( $M = 2.98$ ,  $SD = 3.06$ ) and were 25.57 years of age ( $SD = 6.64$ ). Participants were recruited on campus by use of flyers. Teams, with their respective members, were randomly assigned to one of two leader mood conditions: positive leader mood and negative leader mood. Within the three-person team, members were randomly assigned to the leader or team member role.

### 5.5. Procedure

Teams participated in a 1-hr experiment. Experimenters were unaware of the hypotheses and goals of the present study. Participants were led to believe that the study concerned team dynamics. After a brief introduction, participants completed a mood scale to measure their baseline mood (Time 1 [T1])



baseline mood of leaders and team members). This was done to ensure that there were no mood differences between participants at the beginning of the experiment.

Leaders were randomly selected among each team and then separated from the rest of the group. Leaders were given a sheet of paper with the picture of a puzzle that teams were to work on as a team task. By providing team leaders with the picture of the final puzzle, team leaders were able to solve the puzzle quickly and efficiently. The puzzle consisted of 300 pieces, which pictured a landscape. Leaders were asked to memorize the picture of the puzzle for 5 min. Other team members did not have the opportunity to see the picture of the finished puzzle. Team leaders were told that they would later perform a puzzle task together with their team members and that they were to lead the other group members while working on the team task of assembling the puzzle. It was also clear to the team leaders that they were the only ones on the team who had extra knowledge of the team task, which reinforced their leader role within their teams.

Mood was manipulated by presenting one of the pretested two music clips before the leaders were shown the puzzle. After leaders had listened to the respective piece of music, they filled out a mood scale (T2 pre-task mood of leaders). This measure was the manipulation check for the mood induction in leaders. After completing the mood scale, leaders rejoined the rest of their group. While leaders were exposed to music, the other group members were kept busy with the bogus task of filling out word lists. After completing their bogus task, group members also filled out a mood scale (T2 pre-task mood measure of group member mood). Afterwards, group members engaged in the task of correctly putting together as many puzzle pieces as possible within 10 min.

Once teams had finished the puzzle task or time had run out, all participants completed the post task mood scale (T3 post task mood of leaders and group members) and a questionnaire that included questions on potency and goal commitment. Finally, participants were carefully debriefed, thanked, and given course credit for participation. The incentives were identical in all experimental conditions.

## 5.6. Measures

*Mood of individual team members.* Participants' individual mood was assessed with the positive (happy, joyful, content, cheerful) and negative (sad, frustrated, depressed, dissatisfied) hedonic tone scales of the UWIST mood adjective checklist [76]. Participants rated the extent to which each of the eight adjectives reflected their current feeling state ("Right now, I'm feeling...") on 5-point scales (*not at all* = 1 to *very much* = 5). Mood was assessed after entering the lab (T1), before the task was administered (T2), and after task accomplishment (T3; T1:  $\alpha = 0.88$ ; T2:  $\alpha = 0.90$ ; T3:  $\alpha = 0.88$ ). Following earlier research [56,74], I created a mood score by adding the scores of the positive hedonic tone scale to those of the reverse coded negative hedonic tone scale. The values reported are team members' averaged individual mood scores.

*Group affective tone.* Team members' individual mood scores (T3) were aggregated in order to obtain a measure of group affective tone. As I was interested in the effect of leaders' mood on team members, the leaders' score was excluded. In order to assess whether the aggregation of the mood scores to the group level was justified, I calculated  $r_{wg}$  values [77]. The  $r_{wg}$  value—reflecting the level of agreement within a team—for group affective tone was good, with a value of 0.72. Thus, aggregation of individual mood scores to the group level was justified.

*Potency.* Team members rated potency after task accomplishment (T3). More specifically, *potency* was measured with eight items on a 5-point scale from Guzzo *et al.* [57]. A sample item is “We believe in our competencies” ( $\alpha = 0.82$ ). The  $r_{wg}$  value for potency ( $r_{wg} = 0.67$ ) justified aggregation.

*Goal commitment.* Likewise, team members rated goal commitment after task accomplishment (T3). *Goal commitment* was measured with eight items on a 5-point scale from Hollenbeck *et al.* [36]. A sample item is “It was very important for me to achieve the group goal” ( $\alpha = 0.76$ ). The  $r_{wg}$  value for goal commitment ( $r_{wg} = 0.63$ ) justified aggregation.

*Team performance.* In order to obtain a measure of a team’s objective task performance, I counted the number of correctly assembled puzzle pieces.

5.7. Results

5.7.1. Overview

For data analysis, different statistical procedures were needed due to different research questions and data structures. To test for *differences between the means* of the two experimental conditions, I report results from parametric techniques (*i.e.*, ANCOVAs, *t*-tests), as is recommended [78]. When *individual-level data* was given with individuals nested in teams, I used hierarchical model (HLM) analyses [79]. When outcome variables were at the *group level*, I used hierarchical regression analyses [78] after having shown that group-level aggregation was justified. Means, standard deviations and correlations for the main study variables are shown in Table 1.

**Table 1.** Descriptive statistics and correlations between main study variables.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1 Age	25.57	4.55	-								
2 Gender <sup>a</sup>	-	-	-0.08	-							
3 Leader mood manipulation <sup>b</sup>	-	-	-0.13	0.24	-						
4 Mood T1 (Baseline Mood)	3.74	0.52	0.09	-0.06	-0.08	(0.88)					
5 Mood T2 (Pre-task Mood)	3.68	0.58	0.16	-0.01	0.06	0.86 **	(0.90)				
6 Mood T3 (Post-task Mood)	3.80	0.59	0.08	-0.12	0.46 *	0.59 **	0.66 **	(0.88)			
7 Potency	3.25	0.47	0.12	0.17	0.46 *	0.31	0.56 **	0.58 **	(0.82)		
8 Goal commitment	3.29	0.43	0.44 *	0.05	0.37 <sup>+</sup>	0.16	0.36	0.38	0.52 *	(0.76)	
9 Team performance T3 <sup>c</sup>	61.86	16.68	-0.09	-0.15	0.51 *	-0.33	-0.15	0.18	0.28	0.19	-

Note. *N* = 21. <sup>a</sup> Gender was coded as 1 = female, 2 = male. <sup>b</sup> Leader mood manipulation was coded as 1 = negative, 2 = positive. <sup>c</sup> T = time. Internal consistency reliabilities are in parentheses along the diagonal (*N* = 42). \*\*  $p < 0.01$ . \*  $p < 0.05$  <sup>+</sup>  $p = 0.10$ .

### 5.7.2. Manipulation Check

An ANCOVA with the leaders' mean mood score at T1 (pre-task mood) and gender as covariates revealed successful mood manipulation: A comparison between the positive ( $M = 4.03$ ,  $SD = 0.36$ ) and negative ( $M = 3.68$ ,  $SD = 0.41$ ) leader mood conditions at T2 revealed the expected significant difference,  $F(1,15) = 14.36$ ,  $p < 0.01$ . As predicted, leaders in the positive mood condition were in a significantly better mood after manipulation compared to leaders in the negative mood condition. Thus, the pretested mood manipulation was successful.

### 5.7.3. Test of Hypotheses

*Effects of the leader's mood on team members' individual mood and group affective tone.* To test the effect of leaders' mood on team members' individual mood, I conducted HLM analyses. It was necessary to use HLM because individuals were nested within teams, with the mood scores being dependent on each other. Following the procedure from Sy and colleagues [6], the multilevel model read:  $mood_{ij} = \gamma_{00} + \gamma_{01} LEADER_j + u_{0j} + r_{ij}$  with  $mood_{ij}$  being the mood of the  $i$ th individual in the  $j$ th group,  $\gamma_{00}$  standing for the sum of the overall mean,  $\gamma_{01} LEADER_j$  being a fixed effect for leader mood, where  $LEADER_j$  is positive or negative, and  $u_{0j}$  being a series of random deviations. As predicted in Hypothesis 1, team members with a leader in a positive mood experienced a more positive mood than team members with a leader in a negative mood,  $\gamma = 0.5233$ ,  $F(1,19) = 2.35$ ,  $p < 0.05$ . Thus, Hypothesis 1 was supported.

In Hypothesis 2, I predicted that team leaders' mood would be positively associated with group affective tone. A  $t$ -test showed that teams with a leader in a positive mood had a higher team affective tone ( $M = 4.07$ ,  $SD = 0.58$ ) compared to teams with a leader in a negative mood ( $M = 3.55$ ,  $SD = 0.49$ ),  $t(19) = 2.24$ ,  $p < 0.05$  (cf. Table 2). Thus, Hypothesis 2 was confirmed.

**Table 2.** Effects of leader's mood condition.

Variable	Positive Mood		Negative Mood	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Group Affective Tone	4.07	0.58	3.55	0.49
Team Performance	70.50	16.97	54.00	12.45

Note.  $N = 21$ .

*Effects of the leader's mood on team outcomes.* In Hypothesis 3, I proposed that teams with a leader in a positive mood would perform better than teams with a leader in a negative mood. In accordance with Hypothesis 3, a  $t$ -test showed that groups with a leader in a positive mood showed better performance ( $M = 70.50$ ,  $SD = 16.97$ ), measured as the number of assembled puzzle pieces, than did teams with a leader in a negative mood ( $M = 54.00$ ,  $SD = 12.45$ ),  $t(19) = 2.56$ ,  $p < 0.05$  (cf. Table 2). In Hypothesis 4 and 5, I proposed that teams with a leader in a positive mood would experience higher levels of potency and goal commitment, respectively. As expected, teams with a leader in a positive mood had higher potency ratings ( $M = 3.47$ ,  $SD = 0.54$ ) than did teams with a leader in a negative mood ( $M = 3.04$ ,  $SD = 0.30$ ),  $t(19) = 2.28$ ,  $p < 0.05$ . For goal commitment, however, although the findings were in the expected direction, there was no significant difference according to the traditional

standards between groups with a leader in a positive mood ( $M = 3.56$ ,  $SD = 0.49$ ) and groups with a leader in a negative mood ( $M = 3.24$ ,  $SD = 0.32$ ),  $t(19) = 1.76$ ,  $p < 0.10$ ). Summarizing, Hypotheses 3 and 4 were therefore supported, whereas Hypothesis 5 was not.

#### 5.7.4. Mediation Analyses

In Hypotheses 6a–c, I assumed that group affective tone mediates the relationship between leader's mood and team performance (Hypothesis 6a), potency (Hypothesis 6b), and goal commitment (Hypothesis 6c). For mediation, four conditions had to be met [80]: Criterion 1 was confirmed if the independent variable (leader's mood) was related to the mediator (group affective tone). Criterion 2 was met if the independent variable (leader's mood) was related to the outcome (team performance, potency, and goal commitment, respectively). Criterion 3 was fulfilled if the mediator (group affective tone) was associated with the outcome (team performance, potency, and goal commitment, respectively). Finally, the relationship between the independent variable (leader's mood) and the outcome (team performance, potency, and goal commitment, respectively) should not have been significant (or reduced significantly for partial mediation) when entered simultaneously with the mediator (Criterion 4). To test these conditions, I ran a number of (hierarchical) regression analyses.

Criterion 1 was confirmed because there was a positive relationship between leader's mood and group affective tone ( $\beta = 0.46$ ,  $p < 0.05$ ). An inspection of Table 3 reveals that Criterion 2 was confirmed for team performance ( $\beta = 0.51$ ,  $p < 0.05$ ) and potency ( $\beta = 0.46$ ,  $p < 0.05$ ), but not for goal commitment according to traditional standards ( $\beta = 0.37$ ,  $p < 0.10$ ). Criterion 3 was met for potency ( $\beta = 0.58$ ,  $p < 0.01$ ), but not for team performance ( $\beta = 0.18$ , ns) and goal commitment ( $\beta = 0.38$ ,  $p < 0.10$ , see Table 3). As can be seen in Table 4, the association between leader's mood and potency ( $\beta = 0.46$ ,  $p < 0.05$ ) was no longer significant after entering the mediator (group affective tone) ( $\beta = 0.25$ , ns), but the mediator was significant ( $\beta = 0.46$ ,  $p < 0.05$ ). Therefore, Criterion 4 was met for the leader's mood-potency relationship. As expected, the Sobel test [81] revealed that group affective tone was a mediator of the relation between leaders' mood and potency,  $z = 2.29$ ,  $p < 0.05$ . According to Baron and Kenny [80], the fact that the independent variable was no longer significant after entering the mediator suggests that the relationships between a leader's mood and potency was completely mediated by group affective tone. In sum, the findings support Hypothesis 6b, but not 6a and 6c.

**Table 3.** Effects of leader's mood condition and group affective tone.

	<i>Team Performance</i>	<i>Potency</i>	<i>Goal Commitment</i>
<i>Independent Variable</i>			
Leader's Mood	0.51 *	0.46 *	0.37 <sup>+</sup>
R <sup>2</sup>	0.22 *	0.17 *	0.10 <sup>+</sup>
F	6.55 *	5.18 *	3.10 <sup>+</sup>
Group Affective Tone	0.18	0.58 **	0.38 <sup>+</sup>
R <sup>2</sup>	−0.02	0.30 **	0.10 <sup>+</sup>
F	0.66	9.45 **	3.12 <sup>+</sup>

Note.  $N = 21$ , \*\*  $p < .01$ . \*  $p < 0.05$ , <sup>+</sup>  $p < 0.10$ ; Standardized betas are provided.

**Table 4.** Mediation effect of group affective tone in the leader's mood and potency relationship.

<i>Independent Variable</i>	<i>Potency</i>	
	Step 1	Step 2
Leader's Mood	0.46 *	0.25
Group Affective Tone		0.46 *
$\Delta R^2$	0.17 *	0.38 *
$\Delta F$	5.18 *	5.57 *

Note.  $N = 21$ , \*  $p < 0.05$ ; Standardized betas are provided.

### 5.8. Discussion

Taken together, this study reveals that it is useful to pay attention to the mood of leaders because it has important consequences for the entire team. First, the study showed that the mood of leaders is transferred to team members. Team members acquire their leaders' mood and are influenced by it. Second, the mood of leaders influences teams' actual performance. Moreover, this study complements previous research by identifying group affective tone as a mediator between leaders' mood and potency. The present study goes beyond previous findings on the effect of team leaders' mood on team members, by studying the effects with a different task in a German sample and by broadening the scope of the potential outcomes of team leaders' mood. The positive mood of a team leader creates consistent, positive affective states within a team, which strengthen a team's confidence in its own abilities. Potency, as a generalized evaluation of team success—irrespective of the task and context, or of being strong in the face of obstacles [82]—can be considered to be a competitive strength of teams, particularly in today's work environments where there are high levels of uncertainty and frequent changes. This study offers practical advice for how team leaders can enhance potency. The findings of the study are in line with predictions from research on emotional contagion [21,25] and the social functions of emotions [58–60].

Although participants were not informed about the leaders' mood, mood was nevertheless induced. One could also consider deliberate attempts to cause mood contagion, which might share links to elements of charismatic leadership. A leader may have the potential to induce team-based emotions, and this influence may be used intentionally—as a way to modify the behavior of team members. Imagine a sports coach who tries to motivate players toward a competitive spirit. In this case, the coach might try to display anger to the players. Such a behavior resembles Machiavellian behavior and requires the leader to know what affective state should be induced to generate the supposed outcome. It should be kept in mind, however, that leaders' mood regulation might be costly in terms of metabolic processes, social perception, and evaluations, and might also inhibit social exchange processes and personal experiences [83]. Further research is needed in order to decide on whether purposeful mood interventions are advisable or not.

As with any study, there are limitations to consider. These limitations could also explain why there was—contrary to expectation—no support for the effect of leaders' mood on goal commitment, and for the mediating role of group affective tone in the leaders' mood-team performance and leaders' mood-goal commitment association, respectively. First, one might question the experimental procedure. In this study, leaders were provided with unique knowledge of the team task [6]. However,

we do not know from this study whether team members' mood was affected differently, or more strongly, by the team leaders' mood rather than by the other team members' mood. An experimental study directly comparing leaders' mood effects with team members' mood effects would help to shed light on this open question. Similarly, although I find that there are mood contagion effects in my German sample, future research should use the exact same experimental procedures in order to be able to directly compare the effect sizes from different countries (e.g., the United States, the Netherlands). As outlined earlier, Germany has higher power distance scores compared to other countries, such as the United States or the Netherlands [26]. Thus, the effect sizes for leaders' mood on team members should be stronger in Germany because employees expect more guidance and structure.

Second, this study explored the unidirectional effects of team leaders' mood on team mood. I found that leaders' mood can affect team members' individual mood, group affective tone, team performance, and potency. However, it is also possible that team members' mood influences team leaders. Although the direction from leaders' to followers is theoretically more likely [10,12,13], future research should investigate reciprocal effects to determine if team members also transmit their mood to leaders, which would add to a more active approach to leadership by subordinates.

A third limitation refers to the duration of team task work in this study. Mood induction and joint task accomplishment was time-limited. Thus, it is even more impressive that mood contagion happens even when mood induction and social interaction time are limited. Nevertheless, it would be important to know more about the duration of mood effects in teams in order to estimate long-term effects of leaders' mood on subordinates. Additionally, the study should be replicated with real work teams, different tasks, and different kinds of mood manipulations. For instance, for other team tasks, such as analytical and complex tasks, and within a different context, leaders' negative mood can be expected to enhance team performance [56,84,85] because negative mood can improve information processing and information recall [86], and increase effort [6]. Future research should also investigate the influence of personality and work characteristics on the effect of leaders' mood in teams. For example, depending on the extent of neuroticism, autonomy, or expertise level, team members might be differently affected by the team leader [87,88]. Future research should examine how these factors influence teams' subsequent mood states and ability to function effectively.

## 6. Conclusions

Leaders' mood influences how team members feel and perform. As leaders have the potential to influence team members, leaders must understand the role of moods in team settings, and their special role in influencing their team members' affect and attitudes toward other team members and tasks. Consequently, leaders should be aware of how their mood can affect other people.

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## References

1. George, J.M. Emotions and leadership: The role of emotional intelligence. *Hum. Rel.* **2000**, *53*, 1027–1055.
2. McColl-Kennedy, J.R.; Anderson, R.D. Impact of leadership style and emotions on subordinate performance. *Leadersh. Q.* **2002**, *13*, 545–559.
3. Barsade, S.G. The ripple effect: Emotional contagion and its influence on group behaviour. *Adm. Sci. Q.* **2002**, *47*, 644–675.
4. Johnson, S.K. Do you feel what I feel? Mood contagion and leadership outcomes. *Leadersh. Q.* **2009**, *20*, 814–827.
5. Totterdell, P. Catching moods and hitting runs: Mood linkage and subjective performance in professional sport teams. *J. Appl. Psychol.* **2000**, *85*, 848–859.
6. Sy, T.; Côté, S.; Saavedra, R. The contagious leader: Impact of the leader's mood on the mood of group members, group affective tone, and group processes. *J. Appl. Psychol.* **2005**, *90*, 295–305.
7. Chi, N.-W.; Chung, Y.Y.; Tsai, W.C. How do happy leaders enhance team success? The mediating roles of transformational leadership, group affective tone, and team processes. *J. Appl. Soc. Psychol.*, **2011**, *41*, 1421–1545.
8. Van Kleef, G.A.; Homan, A.C.; Beersma, B.; van Knippenberg, D.; van Knippenberg, B.; Damen, F. Searing sentiment or cold calculation? The effects of leader emotional displays on team performance depend on follower epistemic motivation. *Acad. Manag. J.* **2009**, *52*, 562–580.
9. George, J.M. Personality, affect, and behaviour in groups. *J. Appl. Psychol.* **1990**, *75*, 107–116.
10. Johnson, S.K. I second that emotion: Effects of emotional contagion and affect on leader and follower outcomes. *Leadersh. Q.* **2008**, *19*, 1–19.
11. Anderson, C.; Keltner, D.; John, O.P. Emotional convergence between people over time. *J. Personal. Soc. Psychol.* **2003**, *84*, 1054–1068.
12. Connelly, S.; Gaddis, B.; Helton-Fauth, W. A Closer Look at the Role of Emotions in Charismatic and Transformational Leadership. In *Transformational and Charismatic Leadership, 2: The Road Ahead*; Yammarino, F., Avolio, B.J., Eds.; Elsevier: St. Louis, MO, USA, 2002.
13. Bono, J.E.; Iliès, R. Charisma, positive emotions and mood contagion. *Leadersh. Q.* **2006**, *17*, 317–334.
14. Weiss, H.M.; Cropanzano, R. Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. *Res Organ. Behav.* **1996**, *18*, 1–74.
15. Fredrickson, B.L. What good are positive emotions? *Rev. Gen. Psychol.* **1998**, *2*, 300–319.
16. Fredrickson, B.L. The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *Am. Psychol.* **2001**, *56*, 218–226.
17. Abele, A.E.; Petzold, P. How does mood operate in an impression formation task? An information integration approach. *Eur. J. Soc. Psychol.* **1994**, *24*, 173–188.
18. Clark, M.S.; Isen, A.M. Toward Understanding the Relationship between Feeling States and Social Behavior. In *Cognitive Social Psychology*; Hastorf, A., Isen, A.M., Eds.; Elsevier: New York, NY, USA, 1982; pp. 73–108.

19. Clore, G.L.; Schwarz, N.; Conway, M. Affective Causes and Consequences of Social Information Processing. In *Handbook of Social Cognition*; Wyer, R.S., Srull, T.K., Eds.; Erlbaum: Hillsdale, NJ, USA, 1994; pp. 323–417.
20. Kelly, J.R.; Barsade, S.G. Moods and emotions in small groups and work teams. *Org. Beh. Hum. Dec. Proc.* **2001**, *86*, 99–130.
21. Hatfield, E.; Cacioppo, J.T.; Rapson, R.L.; Clark, M.S. *Primitive Emotional Contagion*; Sage Publications: Thousand Oaks, CA, USA, 1992.
22. Neumann, R.; Strack, F. “Mood contagion”: The automatic transfer of mood between persons. *J. Personal. Soc. Psychol.* **2000**, *79*, 211–223.
23. Chartrand, T.L.; Bargh, J.A. The chameleon effect: The perception-behavior link and social interaction. *J. Personal. Soc. Psychol.* **1999**, *76*, 893–910.
24. Lakin, J.L.; Jefferis, V.E.; Cheng, C.M.; Chartrand, T.L. The chameleon effect as social glue: Evidence for the evolutionary significance of nonconscious mimicry. *J. Nonverbal Behav.* **2003**, *27*, 145–162.
25. Parkinson, B.; Simons, G. Affecting others: Social appraisal and emotion contagion in everyday decision making. *Personal. Soc. Psychol. B* **2009**, *35*, 1071–1084.
26. Brodbeck, F.C.; Chhokar, J.S.; House, R.J. *Culture and Leadership in 25 Societies: Integration, Conclusions, and Future Directions*; Lawrence Erlbaum Associates: Mahwah, NJ, USA, 2008.
27. Hofstede, G. *Culture’s Consequences: International Differences in Work Related Values*; Sage: Beverly Hills, CA, USA, 1980.
28. Hofstede, G. *Culture’s Consequences: Comparing Values, Behaviors, Institutions, and Organizations across Nations*; Sage: Newbury Park, CA, USA, 2001.
29. Szabo, E.; Brodbeck, F.C.; Den Hartog, D.N.; Reber, G.; Weibler, J.; Wunderer, R. The Germanic Europe cluster: Where employees have a voice. *J. World Bus.* **2002**, *37*, 55–68.
30. Hoppe, M.H.; Bhagat, R.S. Leadership in the United States of America: The Leader as Cultural Hero. In *Culture and Leadership in 25 Societies: Integration, Conclusions, and Future Directions*; Brodbeck, F.C., Chhokar, J.S., House, R.J., Eds.; Lawrence Erlbaum Associates: Mahwah, NJ, USA, 2008; pp. 475–543.
31. Dickson, M.W.; Den Hartog, D.N.; Mitchelson, J.K. Research on leadership in a cross-cultural context: Making progress, and raising new questions. *Leadersh. Quart.* **2003**, *14*, 729–768.
32. Locke, E.A.; Latham, G.P. *A Theory of Goal Setting and Task Performance*; Englewood Cliffs: Prentice-Hall, NJ, USA, 1990.
33. Bandura, A. Self-efficacy mechanism in human agency. *Am. Psychol.* **1982**, *37*, 122–147.
34. Shea, G.P.; Guzzo, R.A. Groups as human resources. *Res. Personal. Hum. Res. Manag.* **1987**, *5*, 323–356.
35. Stajkovic, A.D.; Lee, D.; Nyberg, A.J. Collective efficacy, group potency, and group performance: Meta-analyses of their relationships, and test of a mediation model. *J. Appl. Psychol.* **2009**, *94*, 814–828.
36. Hollenbeck, J.R.; Klein, H.J.; O’Leary, A.M. Investigation of the construct validity of a self-report measure of goal commitment. *J. Appl. Psychol.* **1989**, *74*, 951–956.
37. Locke, E.A.; Shaw, K.N.; Saari, L.M.; Latham, G.P. Goal setting and task performance: 1969–1980. *Psychol. Bull.* **1981**, *90*, 125–152.



38. Latham, G.P. Goal setting: A five-step approach to behaviour change. *Organ Dyn.* **2003**, *32*, 309–318.
39. Hu, J.; Liden, R.C. Antecedents of team potency and team effectiveness: An examination of goal and process clarity and servant leadership. *J. Appl. Psychol.* **2011**, *96*, 851–862.
40. Barsade, S.G.; Brief, A.P.; Spataro, S.E. The Affective Revolution in Organizational Behavior: The Emergence of A Paradigm. In *Organizational Behavior the State of the Science*; Greenberg, J., Ed.; Lawrence Erlbaum: Hillsdale, NJ, USA, 2003; Volume 2, pp. 3–52.
41. Lewis, K.M. When leaders display emotion: How followers respond to negative emotional expression of male and female leaders. *J. Organ Behav.* **2000**, *21*, 221–234.
42. George, J.M. Group Affective Tone. In *Handbook of Work Group Psychology*; West, M., Ed.; Wiley: New York, NY, USA, 1996; pp. 77–93.
43. Abele, A.E. Positive versus negative mood influences on problem solving. A review. *Pol. Psychol. Bull.* **1992**, *23*, 187–202.
44. Amabile, T.M.; Barsade, S.G.; Mueller, J.S. Affect and creativity at work. *Adm. Sci. Q.* **2005**, *50*, 367–403.
45. Baas, M.; DeDreu, C.K.W.; Nijstad, B.A. A meta-analysis of 25 years of mood—Creativity research: Hedonic tone, activation, or regulatory focus? *Psychol. Bull.* **2008**, *134*, 779–806.
46. Baron, R.A. Environmentally induced positive affect: Its impact on self-efficacy, task performance, negotiation, and conflict. *J. Appl. Soc. Psychol.* **1990**, *20*, 368–384.
47. Carnevale, P.J.; Isen, A.M. The influence of positive affect and visual access on the discovery of integrative solutions in bilateral negotiation. *Organ. Behav. Hum. Decis.* **1986**, *37*, 1–13.
48. Forgas, J.P. On feeling good and getting your way: Mood effects on negotiator cognition and bargaining strategies. *J. Personal. Soc. Psychol.* **1986**, *74*, 565–577.
49. Brief, A.P.; Motowidlo, S.J. Prosocial organizational behaviors. *Acad. Manag. Rev.* **1986**, *11*, 710–725.
50. Elfenbein, H.A. Emotions in organizations: A review and theoretical integration. *Acad. Manag. Ann.* **2007**, *1*, 371–457.
51. Schwarz, N.; Clore, G.L. Mood, misattribution and judgments of well-being: Informative and directive functions of affective states. *J. Personal. Soc. Psychol.* **1983**, *45*, 513–523.
52. Thelwell, R.C.; Lane, A.M.; Weston, N.J.V. Mood states, self-set goals, self-efficacy and performance in academic examinations. *Personal. Individ. Differ.* **2007**, *42*, 573–583.
53. Cialdini, R.B. *Influence*; William Morrow and Company: New York, NY, USA, 1984.
54. George, J.M.; Brief, A.P. Motivational Agendas in the Workplace: The Effects of Feelings on Focus of Attention and Work Motivation. In *Research in Organizational Behavior: An Annual Series of Analytical Essays and Critical Reviews*; Staw, B.M., Cummings, L.L., Eds.; JAI Press, Inc.: Greenwich, CT, USA, 1996, pp. 75–109.
55. George, J.M.; Bettenhausen, K. Understanding prosocial behavior, sales performance, and turnover: A group level analysis in a service context. *J. Appl. Psychol.* **1990**, *75*, 698–709.
56. Klep, A.; Wisse, B.; van der Flier, H. Interactive affective sharing versus non-interactive sharing in work groups: Comparative effects of group affect on work group performance and dynamics. *Eur. J. Soc. Psychol.* **2011**, *41*, 312–323.

57. Guzzo, R.A.; Yost, P.R.; Campbell, R.J.; Shea, G.P. Potency in groups: Articulating a construct. *Br. J. Soc. Psychol.* **1993**, *32*, 87–106.
58. Keltner, D.; Haidt, J. Social functions of emotions at four levels of analysis. *Cogn. Emot.* **1999**, *13*, 505–521.
59. Van Kleef, G.A. How emotions regulate social life: The emotions as social information (EASI) model. *Curr. Dir. Psychol. Sci.* **2009**, *18*, 184–188.
60. Côté, S.; Hideg, I. The ability to influence others via emotion displays: A novel dimension of emotional intelligence. *Organ. Psychol. Rev.* **2001**, *1*, 53–71.
61. Bandura, A. *Self-Efficacy: The Exercise of Control*; Freeman: New York, NY, USA, 1997.
62. Gully, S.M.; Incalcaterra, K.A.; Joshi, A.; Beaubien, J.M. A meta-analysis of team-efficacy, potency, and performance: Interdependence and level of analysis as moderators of observed relationships. *J. Appl. Psychol.* **2002**, *87*, 819–832.
63. Kanfer, R.; Ackerman, P.L.; Elliot, A.J.; Dweck, C.S. Work Competence: A Person-Oriented Perspective. In *Handbook of Competence and Motivation*; Elliot, A.J., Dweck, C.S., Eds.; Guilford Publications: New York, NY, USA, 2005; pp. 336–353.
64. Klein, H.J.; Kim, J.S. A field study of the influence of situational constraints, leader member exchange, and goal commitment on performance. *Acad. Manag. J.* **1998**, *41*, 88–95.
65. George, J.M. Leader positive mood and group performance: The case of customer service. *J. Appl. Psychol.* **1995**, *25*, 778–794.
66. Brown, J.D.; Mankowski, T.A. Self-esteem, mood, and self-evaluation: Changes in mood and the way you see you. *J. Personal. Soc. Psychol.* **1993**, *64*, 421–430.
67. Forgas, J.P. On being happy and mistaken: Mood effects on the fundamental attribution error. *J. Personal. Soc. Psychol.* **1998**, *75*, 318–331.
68. Schwarz, N. Feelings as Information: Informational and Motivational Functions of Affective States. In *Handbook of motivation and cognition*; Sorrento, R.M.; Higgins, E.T. Eds.; Guilford Press: New York, NY, USA, 1990; Volume 2, pp. 521–561.
69. Custers, R.; Aarts, H. Positive affect as implicit motivator: On the nonconscious operation of behavioral goals. *J. Personal. Soc. Psychol.* **2005**, *89*, 129–142.
70. Orehek, E.; Bessarabova, E.; Chen, X.; Kruglanski, A.W. Positive affect as informational feedback in goal pursuit. *Motiv. Emot.* **2011**, *35*, 44–51.
71. Beethoven, L.V. Ode an die Freude [Recorded by Choir, W.; Orchestra, P.; Muti, R.]. In *Ode An Die Freude/Ode to Joy—Best of Beethoven* [MP3]; EMI Classics: Paris, France, 2009.
72. Prokofiev, A.N. The Field of Death [Recorded by Stokowski, L.]. In *On Prokofiev's Classics* [CD]; Future Noise Music Ltd.: London, UK. 2008.
73. Etzel, J.; Johnsen, E.L.; Dickerson, J.; Tranel, D.; Adolphs, R. Cardiovascular and respiratory responses during musical mood induction. *Int. J. Psychophysiol.* **2006**, *61*, 57–69.
74. Gendolla, G.H.E.; Krüsken, J. The impact of mood state on cardiovascular response in active coping with an affect-regulative challenge. *Int. J. Psychophysiol.* **2001**, *41*, 169–180.
75. Watson, D.; Clark, L.A.; Tellegen, A. Development and validation of brief measures of positive and negative affect: The PANAS scales. *J. Personal. Soc. Psychol.* **1988**, *54*, 1063–1070.
76. Matthews, G.; Jones, D.M.; Chamberlain, A.G. Refining the measurement of mood: The UWIST mood adjective checklist. *Br. J. Psychol.* **1990**, *81*, 17–42.

77. James, L.R.; Demaree, R.G.; Wolf, G. Estimating within-group interrater reliability with and without response bias. *J. Appl. Psychol.* **1989**, *69*, 85–98.
78. Bortz, J.; Schuster, C. *Statistik für Human- und Sozialwissenschaftler*, 7th ed.; Springer: Heidelberg, Germany, 2010.
79. Raudenbush, S.W.; Bryk, A.; Cheong, Y.F.; Congdon, R. *HLM 6: Hierarchical Linear and Nonlinear Modeling*; Scientific Software International: Chicago, IL, USA, 2004.
80. Baron, R.M.; Kenny, D.A. The moderator-mediator variable distinction in social psychological research. Conceptual, strategic, and statistical considerations. *J. Personal. Soc. Psychol.* **1986**, *51*, 1173–1182.
81. Sobel, M.E. Asymptotic Intervals for Indirect Effects in Structural Equations Models. In *Sociological Methodology*; Leinhardt, S. Ed.; Jossey-Bass: San Francisco, CA, USA, 1982; pp. 290–312.
82. Gully, S.M.; Incalcaterra, K.A.; Joshi, A.; Beaubien, J.M. A meta-analysis of team-efficacy, potency, and performance: Interdependence and level of analysis as moderators of observed relationships. *J. Appl. Psychol.* **2002**, *87*, 819–832.
83. Saavedra, R. Kindling Fires and Extinguishing Candles: The Wind of Mood Contagion in Work Groups. In *Research Companion to Emotion in Organizations*; Ashkanasy, N.M., Cooper, C.L., Eds.; Edward Elgar Publishing: Cheltenham, UK, 2008; pp. 423–440.
84. George, J.M.; Zhou, J. Understanding when bad moods foster creativity and good ones don't: The role of context and clarity of feelings. *J. Appl. Psychol.* **2002**, *87*, 687–697.
85. Kooij-de Bode, H.J.M.; van Knippenberg, D.; van Ginkel, W.P. Good effects of bad feelings: Negative affectivity and group decision making. *Br. J. Manag.* **2010**, *21*, 375–392.
86. Storbeck, J.; Clore, G.L. Affect influences false memories at encoding: Evidence from recognition data. *Emotion* **2011**, *11*, 981–989.
87. Sonnentag, S.; Volmer, J. Individual-level predictors of task-related teamwork processes: The role of expertise and self-efficacy in team meetings. *Group Organ. Manag.* **2009**, *34*, 37–66.
88. Volmer, J.; Spurk, D.; Niessen, C. Leader-member exchange (LMX), job autonomy, and creative work involvement. *Leadersh. Q.* **2012**, *23*, 456–465.