MS. BETH CLARKSON (Orcid ID : 0000-0002-2237-0964)

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Leadership and the contagion of affective phenomena: A systematic review and mini meta-analysis

Beth G. Clarkson[1]

Christopher R.D. Wagstaff [1]

Calum A. Arthur [2]

Richard C. Thelwell [1]

[1] Department of Sport and Exercise Science, University of Portsmouth, UK

[2] School of Sport, University of Stirling, UK

Corresponding author: Beth Clarkson, Department of Sport and Exercise Science, University of Portsmouth, Cambridge Road, Portsmouth PO1 2ER, UK.

Email: beth.clarkson@port.ac.uk Telephone: 02392 845942

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Corresponding address:

Corresponding author: Beth G. Clarkson, Department of Sport and Exercise Science, University of Portsmouth, Cambridge Road, Portsmouth PO1 2ER, UK. Email: beth.clarkson@port.ac.uk

Telephone: 02392 84592

Abstract

We present a systematic review of literature examining leadership and the contagion of affective phenomena, namely emotion, mood and affect. Specifically, an inductive thematic analysis approach was adopted to synthesize the findings from published studies. In addition, a mini meta-analysis was conducted to quantify reported effects. A rigorous search identified 25 studies that fulfilled the inclusion criteria for further review. Results highlighted important relationships between leadership and contagion aligned with six themes: charismatic and transformational leadership are conducive to contagion of leader and follower positive

affective phenomena; greater contagion effects exists when there is congruence between leader and follower affective states; contagion of leader and follower affective phenomena is directly linked to leader effectiveness and performance; and, individual susceptibility to the contagion of affective phenomena can moderate these relationships. These findings have salient implications for conceptualization and measurement across multiple lines of inquiry and within numerous domains of application.

Leadership and the contagion of affective phenomena: A systematic review and mini meta-analysis

Leadership is one of the most studied concepts in the social sciences, with substantial scholarly effort directed toward understanding the influence of leadership (Wang, Oh, Courtright, & Colbert, 2011). Within this domain, researchers (e.g., Ashkanasy & Tse, 2000; To, Tse, & Ashkanasy, 2015) have favored theories that promote the emotive nature of leaders' behaviors. For example, transformational leadership advocates propose emotions as a key mechanism by which leaders exert their influence (see Ashkanasy & Tse, 2000). Indeed, over the last twenty years there has been a growth in research devoted to how leaders influence the dispersion of emotions, mood, and affect in their followers, with this growth being termed an "affective revolution" (Barsade, Brief, & Spataro, 2003, p. 3). Nevertheless, despite researchers dedicating increasing attention to the associations between leaders and affective processes, there exists no systematic compilation of this literature, and a review taking stock of this body of work is overdue.

According to *The Handbook of Affective Sciences*, "affective phenomena" is a global term encapsulating six phenomena: emotions, feelings, mood, affective style, attitudes, and temperament (Davidson, Sherer, & Goldsmith, 2009). These phenomena reflect both experiential and trait-like constructs, some of which are often viewed as being transferable between individuals (viz. emotions, mood, and affect). While other forms of contagion have been studied (e.g., social contagion, behavioral contagion), transfer of the affective component of such social interactions are the focal concern to the present study. Therefore, we define the contagion of affective phenomena (CAP) as the transference of emotions, moods, or affect between individuals (cf. Barsade, 2001; Hatfield, Bensman, Thornton, & Rapson, 2014; Hatfield, Cacioppo, & Rapson, 1994). In line with this definition, the contagion of affective phenomena might include the study of emotional contagion (e.g., Liang & Chi, 2013), mood contagion (e.g., Bono & Ilies, 2006), mood convergence (e.g., Spoor & Kelly, 2009), and the transfer of affective displays (e.g., Damen, van Knippenberg, & van Knippenberg, 2008a). Researchers may also examine group affective tone (e.g., Chi, Chung, & Tsai, 2011) as this group-level affective construct develops through the process of contagion (cf. Collins, Lawrence, Troth, & Jordan, 2013). Of the various CAP concepts of focus, emotional contagion arguably has received the most theoretical and empirical attention. Emotional contagion has been defined as, "an individual's tendency to mimic and synchronize facial expressions, vocalizations, postures, and movements of those of another person's and, consequently, to converge emotionally" (Hatfield et al., 1994, p.5). Research dedicated to emotional contagion has been fruitful, with researchers reporting evidence of emotional contagion between group members in experimental (e.g., Bono & Ilies, 2006; Damen et al., 2008a; Johnson, 2009) and field settings across organizational (e.g., Chi et al., 2011; Tsai, Chen, & Cheng, 2009), education (e.g., Becker, Goetz, Morger, & Ranellucci, 2014; Johnson, 2008), public service (e.g., Erez, Misangyi, Johnson, LePine, & Halverson,

2008), military (e.g., Liang & Chi, 2013), and sport (e.g. Moll, Jordet, & Pepping, 2010; Totterdell, 2000) domains.

The contagion of *positive* affective phenomena is important as the transfer of positive affective experiences between team members has been associated with human factors such as increased cooperation (e.g., Barsade, 2002), team cohesion (e.g., Anghel, 2010), and communication (e.g., Doherty, Orimoto, Singelis, Hatfield, & Hebb, 1995). Indeed, in a position paper on emotional contagion and its relevance to individual behavior and group processes, Vijayalakshmi and Bhattacharyya (2012) highlighted the spread of emotions as crucial to team effectiveness due to its effect on personal and group outcomes.

Much of the contagion of affective phenomena research focus has been on susceptibility to the emotions, mood, and affect of others, yet the extent to which leaders influence others in group settings is intertwined with this process. For example, certain leadership styles may be more conducive to leader and follower positive affective expressions, such as charismatic leadership where strong emotional links are formed between leaders and their followers (cf. Conger & Kanungo, 1998). Using an experimental design, Bono and Ilies (2006) concluded that even when interaction is brief and informal, leaders' emotional expressions influence follower mood. Their findings also showed that leaders' emotional expressions and follower mood were linked to ratings of leader effectiveness, indicating that leaders' emotional expressions could play a critical role in leader-follower interactions.

A recent narrative review by Tee (2015) concluded that implicit and explicit emotional contagion processes are relevant for influencing organizational leadership outcomes with several pertinent themes for organizational leadership research identified, and the salience of contagion processes for understanding the emotional links between multiple levels of business organizations highlighted. While this review offered a highly informative

integration of some key lines of inquiry, a *systematic* review to synthesize the existing

literature which extends the social contexts of study beyond business organizations is

required for several reasons. First, taking a systematic approach will contribute to the body of

literature beyond previous research by adding to the emerging knowledge in this fast-growing

area, raise awareness of the range of research methods employed, and better inform practice

and future research. Second, a systematic review that brings together and analyzes research

from a diverse range of social contexts such as business, military, and education in addition

to quasi-experimental research will importantly extend our understanding of the leadership-

contagion relationships and associated outcomes across numerous domains of research and

application. This understanding would otherwise not be able to be possible using traditional

full meta-analysis methods, due to the diverse methodologies employed within the literature.

Therefore, the aim of the thematic synthesis presented here was to systematically harvest the

body of research examining leadership and the contagion of affective phenomena, draw

attention to prevalent themes within this body of work, and identify the quantifiable

magnitude of effects between leadership and contagion of affective phenomena where

possible. In doing so, the aim of this review is to contribute a significant and timely resource

to inform research and practice.

Method

Search Strategy

Several strategies were employed to identify peer-reviewed published studies for

inclusion in the review: (a) an online search of computerized databases such as Academic

Search Complete, Business Source Complete, E-Journals, MEDline, PsycARTICLES,

PsycINFO, Psychology and Behavioral Sciences, Google Scholar, and Web of Science; (b)

manual searching of journals (including *Emotion, Journal of Applied Psychology, and The*

Leadership Quarterly); (c) manual searching of key review papers on leadership and emotions literature (e.g., Gooty, Connelly, Griffith, & Gupta, 2010; Humphrey, Burch, & Adams, 2016; Joseph, Dhanani, Shen, McHugh, & McCord, 2015; Rajah, Song, & Arvey, 2011; Tee, 2015; van Knippenberg & van Kleef, 2016); and (d) a manual review of reference lists of included studies for potentially relevant articles that could have been missed during the database search. The decision was made to limit the inclusion criteria to peer-reviewed articles as methodological guidance on grey literature incorporation, analysis, and replication remains unclear (Adams, Smart, & Hoff, 2017). The phrases used for the database search were: *leader* emotion* contagion, leader* emotion* convergence, leader* emotion* transfer*, leader* emotion* linkage, leader* mood contagion, leader* mood convergence, leader* mood transfer*, leader* mood linkage, leader* affect* contagion, leader* affect* convergence, leader* affect* transfer, leader* affect* linkage, manager* emotion* contagion, manager* mood contagion , manager* affect* contagion, manager* emotion* convergence, manager* mood convergence, manager* affect* convergence, manager* emotion* transfer*, manager* mood transfer*, manager* affect transfer*, manager* emotion* linkage, manager* mood linkage, OR manager* affect* linkage*.

Procedure

A total of 4011 articles were identified and subsequently reviewed at title, abstract, and full-text stages to determine their relevance to the research question (see Figure 1). Titles and abstracts of identified studies were critically appraised by the first author to exclude articles which were discernibly outside the scope of the review, with decisions for removal at this stage of the review based on inclusion criteria outlined in Table 1. The majority of studies excluded from the review under the term "study variables" ($n = 3579$) were due to a lack of data pertaining to *both* leader affective phenomena and follower affective phenomena,

which the authors deemed critical to a review of research on leadership and the contagion of affective phenomena. For example, McColl-Kennedy and Anderson's (2002) study on the impact of leadership style and emotions on subordinate performance was excluded at abstract stage as the contagion process (i.e., concerning leader affective phenomena *and* follower affective phenomena) was not directly measured. At full manuscript stage, the exclusion criteria were split into "leadership" (i.e., manuscripts were excluded if leaders were not sampled and/or sampled) and "affective phenomena" (i.e., manuscripts were excluded when the affective experiences of both leaders and followers were not measured and/or manipulated). Full manuscripts were screened by the first author and reviewed by the authoring team to ensure rater agreement.

25 included studies were entered into QSR International's NVivo 10 qualitative data analysis software, and a comprehensive process of data coding and identification of themes was undertaken. Any publication with multiple separate studies (and participants) were analyzed individually. The authors coded data type, form, source, and collection in accordance with Blaikie's (2010) social research design categorizations, as well as the sample size, leadership measure and/or manipulation procedure, measure of affective phenomena and/or manipulation procedure. Additionally, the source of the criterion measure (e.g., self-report, follower-report) was coded to ascertain whether common method bias affected studies using self-report approaches (Joseph et al., 2015).

Data Extraction and Synthesis

A qualitative synthesis was deemed the most appropriate method of assessment due to the small number of studies (*n*=25) meeting the inclusion criteria and given the lack of conceptual harmony within the literature. Specifically, an inductive thematic synthesis approach was employed. A key strength of this interpretive approach is that a thematic

synthesis includes comparable study designs and organizes the main findings of studies in a structured manner to allow for the identification of themes (Thomas & Harden, 2008). The results sections of each study were manually coded to generate initial categories, which were then organized into meaningful themes. Following the procedure outlined by Thomas and Harden (2008), study findings were taken to be all text under the headings of 'results' or 'findings' in study reports. Themes were coded at a semantic level, where the explicit meanings of the data were analyzed, and not beyond what has been written (Braun & Clarke, 2006). We employed this homogenous method of extracting data in order to provide a fair and balanced account of the literature and avoid drawing unreliable conclusions.

Mini meta-analytical procedure

Where possible, mini meta-analyses were conducted to quantify the magnitude of effect sizes reported in multi-study publications. The random effects approach, outlined by Goh, Hall, and Rosenthal (2016), was followed where an arithmetic average of all of reported effect sizes within studies was calculated and heterogeneity analyzed using a one-sample t-test. Effect sizes were converted into eta-squared values prior to analysis (Cohen, 1988). This approach was favored over the fixed-effects approach (where the mean is weighted) as differing sample sizes and methodology can lead to misleading values (Goh et al., 2016). When effect sizes (i.e., partial eta-squared, Cohen's d) were not reported, correlational data was presented in parentheses as the consistent statistic for comparison.

Results

A summary of the participants, instrumentation, and main findings reported in each manuscript included can be found in Table 2.

Descriptive Characteristics of Studies

The contagion effect has been researched in relation to all of the three main affective phenomena constructs, namely *emotion*, *mood*, and *affect*. That is, the reviewed studies (see Table 2) included investigations of emotional contagion (33.3%), mood contagion (37.5%), mood convergence (8.3%), as well as the transfer of affect (20.8 %), and group affective tone (16.7%). Moreover, despite such distinctions, it was observed that 38.5% of the studies purporting to examine mood contagion, mood convergence, transfer of affect, and group affective tone studies, used emotional contagion as the underpinning theoretical framework. It is worthy of note that in one study by Sy et al. (2005) both group affective tone and mood contagion were investigated, and thus the percentages presented are inclusive of both of these constructs. Researchers have predominantly employed either the Positive Affect and Negative Affect Scale (PANAS: Watson, Clark, & Tellegen, 1988), or the Job Affect Scale (JAS: Brief, Burke, George, Robinson, & Webster, 1988), over the Emotional Contagion Scale (ECS; Doherty, 1997) to investigate the contagion or convergence of mood and/or affect.

Two-thirds of all studies reported findings from experimental investigations (including leader manipulation and/or isolated leader affective experiences and expressions); with the remaining third of studies being conducted in field settings (e.g., Liang & Chi, 2013) in education, organizational, public services, and military domains. In (2) education studies, teachers' emotions significantly predicted student emotions, and school Principal's affect was related to teacher affect (Becker et al., 2014; Johnson, 2008). The findings from (5)

organizational studies all indicated a contagion effect between leaders and followers (e.g.,

Asadullah, Muntaz, Batool, & Hameed, 2016; Chi et al., 2011; Chi & Huang, 2014; Damen

et al., 2008b; Tsai et al., 2009). In public services, firefighters were found to be happier under

the command of a charismatic leader than a non-charismatic leader (Erez et al., 2008). In the

Taiwanese military, transformational leadership indirectly increased follower performance

through follower positive moods (Tsai et al., 2009).

Over half (15) of included studies reported manipulating leader affective phenomena

within scenarios and role-play using a variety of methods: facial expressions, tone of voice,

and body language of trained actors (e.g., Damen et al., 2008a; Sacavém, Martinez, Vieira Da

Cunha, Abreu, & Johnson, 2017; Van Kleef et al., 2009; Visser, van Knippenberg, van Kleef,

& Wisse, 2013), the emotive wording of speeches (e.g., Cherulnik, Donley, Wiewel, &

Miller, 2001; Damen et al., 2008b; Madera & Smith, 2009), winning or losing a gift

certificate (e.g., Johnson, 2009), priming with video clips (e.g., Sy et al., 2005; Sy et al.,

2013; Sy & Choi, 2013), or priming with music clips (e.g., Volmer, 2012). Manipulations

were undertaken via assignment of an individual to lead participants, or manipulations of

leader influence through use of confederates, scenarios, and role-play. All manipulations

were intended to influence short-term behavior and therefore generally lasted for only short

testing periods of 1-3 hours, with no manipulations lasting more than a day.

Theme 1: Charismatic and transformational leadership styles are conducive to
***leader* positive affective expressions.** In 7 (36%) studies, charismatic leaders have

consistently been found to express more positive emotions than their less charismatic

counterpart leaders (see. Table 3). For example, in their field study of firefighters, Bono and

Ilies (2006) found leaders who were rated by subordinates as highly charismatic expressed

more positive emotions in their written and spoken communication than those who were rated

low in charisma. Erez et al. (2008) found that self-rated leader charisma was positively

related to positive expressions and aroused behavior (e.g., "the leader tended to talk with his/her hands a lot", p. 608). Similar results were found in Sacavém et al.'s (2017) scenario experiment of leader delivery styles, mood and performance. Following a simulated task, confederate leaders whose nonverbal affective displays used a mixture of "dynamic hand gestures, an expressive face, fast and loud speaking, relaxed posture, and expansive gestures" and "use of smiles, nods, forward leaning, and body fronting" (p. 27) were positively associated with participants' attributions of charisma. In addition, Damen et al. (2008b) found leader affective displays to be correlated with follower attributions of charisma, with the transfer of positive feelings and arousal mediating this relationship. A similar relationship was observed in Johnson's (2009) study of mood contagion and leadership outcomes in a laboratory setting. That is, leaders expressing positive mood in a recruitment speech task were rated as having greater levels of charismatic leadership by followers who watched their speech in comparison to leaders expressing a negative mood.

In 2 (8%) studies, transformational leadership was conductive to leader positive affective expressions. For example, Cheng, Yen, and Chen (2012) found ratings of transformational leadership by subordinate soldiers in the Taiwan army positively correlated with their leader's emotional contagion ability. Moreover, the positive association between transformational leadership and subordinates' job involvement was moderated by leaders' emotional contagion ability (and subordinates' susceptibility). In a survey of 85 sales teams, Chi et al. (2011) found leader positive mood to be positively associated with transformational leader behaviors.

Data on effect sizes of studies included within Theme 1 between leadership and leader affective phenomena are presented in Table 3. On average, leadership was positively associated with leader affective phenomena with a medium effect size ($M \eta^2 = .42$). Under further examination, only a small effect size was observed between leadership and positive

affective phenomena ($M\ \eta^2 = .14$) with a negligible effect size between leadership and

negative affective phenomena ($M\ \eta^2 = <.01$) detected by Damen et al. (2008). All calculated

effect sizes in this theme were nonsignificant. These findings should be interpreted with

caution for two reasons: firstly, five out of nine studies reported correlational values rather

than effect sizes and thus their reported statistics could not be included in the theme

arithmetic average effect size calculations. Secondly, six out of nine studies did not state the

valence of contagion effects (e.g., positive or negative affective states), limiting the scope of

conclusions that can be taken from this statistic. Nevertheless, the mini meta-analytical

results highlight the strength of the relationship between leadership and leader affective

expressions.

Theme 2: Charismatic and transformational leadership styles are advantageous

to *follower* positive affective expressions. Findings from 12 (48%) studies show leaders to

be a powerful driver of their team's affective experiences (see. Table 4). Specifically, certain

styles of leadership may be more conducive to the transfer of affective phenomena, such as

charismatic and transformational leadership (Cheng et al., 2012; Cherulnik et al., 2001;

Johnson, 2008; 2009). In a laboratory study, Cherulnik et al. (2001) found observers of a

charismatic leaders giving a simulated campaign speech both smiled more and with greater

intensity, looked away from the leader less often, and spent more time looking at the leader

than observers of a non-charismatic leader. Erez et al. (2008) also found that participants in a

group that had a charismatic leader had a significantly higher positive affect after a "lost in

the wilderness" exercise when compared to participants with a non-charismatic leader. In

addition, following group-level regression analyzes, the authors showed ratings of

charismatic leadership to reduce followers' negative affect. Similarly, in a military study,

Liang and Chi (2013) found that transformational leadership was positively correlated to

follower positive emotions. Furthermore, employee positive moods positively mediate the

relationship between transformational leadership and employee task performance (Tsai et al., 2009). Nevertheless, despite these promising findings, the uni- or multi-directionality of the relationship between transformational leadership and follower affective phenomena has yet to be confirmed. For instance, Becker et al. (2014) presented illuminating results from an education setting showing students' mood to correlate with how teacher instructions were perceived. Also in the education context, Johnson's (2008) survey of teachers and school principals found follower positive affect at work to be positively related to attributions of charismatic leadership. Johnson (2009) later extended these findings via an experimental examination of the role of mood and mood contagion in a leadership situation, and found follower positive (and negative) mood partially mediated the relationship between leader mood and follower ratings of charismatic leadership. Hence, the extant research demonstrates links between leadership style and follower positive affect, but future research is required to explore any causal relationships between such phenomena.

Data on effect sizes of studies included within Theme 2 between leadership and follower affective phenomena are presented in Table 4. Eight out of 12 studies within this theme reported effect sizes and were included in the mini meta-analysis. On average, a stronger effect size was revealed between leadership and negative follower affective phenomena ($M \eta^2 = .27$) than between leadership and positive follower affective phenomena ($M \eta^2 = .19$). However only the effect size between leadership and positive follower affective phenomena was significant ($t(6) = 6.23$, $p = .00$, two-tailed). Other studies not included in the mini meta-analysis reported positive correlational values between leadership and positive follower affective phenomena (Chi et al., 2011) and negative correlations between leadership and negative follower affective phenomena (Johnson, 2009).

Theme 3: Contagion effects are greater when there is congruence between leader and follower affective states. 17 (68%) studies featured within this theme indicating the contagion effect to be greater when a congruence exists between the leader's mood and team members' mood (see. Table 5). 11 (44%) studies were conducted using experimental designs. To elaborate, followers' positive mood increases after interacting with a leader in a positive mood (see Sy & Choi, 2013; Sy, Choi, & Johnson, 2013; Johnson, 2009; Volmer, 2012). For example, Johnson (2009) provided leaders with a small gift to evoke a positive mood before they were asked to prepare and deliver an instructional speech in a simulated recruitment task. During this task, leaders expressing positive mood elicited more positive mood and less negative mood from followers than leader expressing negative mood. In addition, Sy and Choi (2013) manipulated leader mood by showing either a positive video clip (i.e., a humorous clip of a talk show host) or a negative video clip (i.e., a social injustice documentary clip), and found that followers who watched the positive video clip rated themselves to be in a more positive mood after interacting with a leader in a positive mood than before this prime. The leaders in this study who were also primed via video clips, similarly reporting feeling in a more positive mood after interacting with followers in the exercise. Tee et al. (2013) also observed a leader's mood can be influenced by followers' expressed moods. Such findings indicate that it is potentially challenging to discern the directionality of the mood transfer.

Researchers (e.g., Johnson, 2009; Sy, Côté, & Saavedra, 2005; Sy et al., 2013) have also noted followers' negative moods tend to increase after interacting with a leader perceived to be in a negative mood, with similar findings being demonstrated in both individual and group samples (see Volmer, 2012). Further, Spoor and Kelly (2009) examined dyads interacting during a winter survival task and showed the experience of negative moods within these pairs became more similar than did positive moods. In interpreting these

findings, Spoor and Kelly argued that negative affective states have the potential to catalyze toxic atmospheres and that dyads and groups may be more sensitive to negative than positive moods.

In addition to mood convergence, leader positive affect has been found to be associated with follower affect (Erez et al., 2008; Damen et al., 2008b). In Damen et al.'s (2008b) communication management experiment, participants listened to a leader's speech announcing quarterly results in either an enthusiastic, relaxed, angry, or sad manner, and were then assessed via questionnaires on their reactions to their leader. Enthusiastic leaders were shown to transfer more positive affect than angry, sad, or relaxed leaders, and followers in the enthusiastic speech group also reported significantly less negative affect. Damen et al. (2008b) also replicated these findings in a field setting surveying leadership in organizations, with employees rating their direct leader. Mediational analyzes revealed the transfer of positive feelings as a mediator of the relationship between leader enthusiasm and follower attributions of charisma.

The body of extant research reviewed here collectively shows a significant relationship between a leader's emotions and followers' emotions (Asadullah et al., 2016; Becker et al., 2014; Eberly & Fong, 2013). Specifically, the ability of the leader to influence the affective states of group members (the contagion ability) has typically been operationalized as a leader's emotion display and/or emotional expressions (e.g., Eberly & Fong, 2013; Visser et al., 2013), with only Cheng et al. (2012) directly measuring leaders' contagion ability. In Madera and Smith's (2009) quasi-experimental product recall study, leader expressions of anger lead to more participant negative affect compared with a leader expressing sadness. Using a laboratory design, Eberly and Fong (2013) examined whether followers made positive attributions regarding the sincerity of their leader's intentions when they shared the leader's emotions. The researchers found that followers who interacted with

leaders expressing positive emotions reported experiencing more positive feelings and perceived the leader to be sincerer than those followers who interacted with a leader who expressed negative emotions. In Asadullah et al.'s (2016) survey of hospitality leader-follower dyads, leader's positive emotions were positively associated with followers' positive emotions in the workplace, which mediated the relationship between leader positive emotions and leader effectiveness.

Data on effect sizes of studies included within Theme 3 between leader affective phenomena and follower affective phenomena are presented in Table 5. A medium effect size was calculated for the relationship between leader affective phenomena and follower affective phenomena ($M \eta^2 = .30$) in five out of 17 studies where the valence of contagion effects was not given. On average, stronger effect sizes were reported when leader affective phenomena and follower affective phenomena were congruent. Specifically, a larger average effect size was observed in the relationship between a leader in a negative affective state and a follower in a negative affective state ($M \eta^2 = .13$), than between a leader in a negative affective state and a follower in a positive affect state ($M \eta^2 = .02$). As no data on effect sizes were not reported in the two studies that measured the relationship between leader positive affective states and follower negative affective states, the importance of congruence between leader and follower positive affective states could not be statistically discerned. A small significant effect size was observed between a leader in a positive affective state and a follower in a positive affect state ($M \eta^2 = .28$, $t(7) = 2.56$, $p = .04$, two-tailed). All other calculated effect sizes were nonsignificant as indicated by one-sample t-tests.

Theme 4: Direct relationships exist between perceptions of leader effectiveness and leader and follower affective experiences. The findings from the 7 (29%) studies within this theme collectively indicate the existence of a relationship between the experience of affective phenomena (both leader and follower) and perceptions of leader effectiveness

(see. Table 6). That is, leaders who express positive emotions rather than neutral or negative emotions are generally perceived by followers to be more effective (e.g., Asadullah et al., 2016; Bono & Ilies, 2006; Eberly & Fong, 2013; Tee et al., 2013; Visser et al., 2013). Tee et al. (2013) tested whether leader mood and leader behavior could be influenced by their followers' mood during a "lego leadership" exercise, wherein groups were instructed to build a model car. Followers were told to express positive, negative, or neutral mood when interacting with their leader, and leaders were informed that only they possessed the critical instructions, and were unaware the followers had previously built the model car. The authors cross-validated ratings of leader mood using three sources (leader, follower, and observer) and found leaders were judged as more effective by followers in the positive mood condition than followers in the negative mood condition. In another example, Sy et al. (2013) used intact groups with existing norms and interaction histories to conduct a three-week experimental study into group mood, perceptions of leader effectiveness, and group perceptions of leader charisma. Leader and group moods were manipulated by a video clip (see also Sy et al., 2005) and leaders then interacted with their groups, during a one-hour tent exercise. The data indicated that group mood influenced immediate perceptions of leader effectiveness, and subsequent (1 week later) ratings of leader charisma. Leader effectiveness also mediated the relationship between (positive and negative) group mood and leader charisma. Madera and Smith (2009) used vignettes if a leader addressing a failed product that led to product recall in a quasi-experimental study of leader negative emotions on evaluations of leadership in a crisis situation. Employees from various organizations and occupations (e.g., accountant, lawyer, teacher) were presented with a hypothetical news clipping detailing a synopsis of the recall and an interview with the leader. Participants were asked to rate their feelings towards the leader, to evaluate the leader's response, and to rate the emotion expressed by the leader in the interview, which had been manipulated to reflect either angry,

sad, or angry and sad. The results showed that expressions of both anger and sadness or sadness alone were evaluated as more effective by followers than a leader expressing anger. In sum, the findings of the studies within this theme indicate that the mood and/or emotions of both the leader and group members can impact perceptions of leader effectiveness.

Data on effect sizes of studies included within Theme 4 between affective phenomena and leader affective phenomena are presented in Table 6. Five out of seven studies included in this theme reported effect sizes and were included in the mini meta-analyses. In studies where the valence of contagion effects was not stated, the relationship between leader affective phenomena and leader effectiveness ($M \eta^2 = .21$) was stronger than compared to the relationship between follower affective phenomena and leader effectiveness ($M \eta^2 = .10$). In addition, there was a stronger effect size between leader effectiveness and leader positive affective states ($M \eta^2 = .10$) than compared to the relationship between leader effectiveness and leader negative affective states ($M \eta^2 = .02$). These results should, however, be interpreted with caution due to the limited availability of reported effect sizes within the studies included in the analysis.

Theme 5: Leader-influenced group members' positive affective states can increase performance. Leader-influenced group members' positive affective states have been found to be associated with increased follower performance in the 10 (40%) studies within this theme (see. Table 7). Specifically, in several (5) experimental studies followers with a leader in a positive mood have been shown to perform better than those with a leader in a negative mood (e.g., Johnson, 2009; Visser et al., 2013; Volmer, 2012). For example, in their study of emotional contagion and creative versus analytical performance, Visser et al. (2013) found that participants scored higher on either creative (idea generation) or analytical (Sudoku) tasks depending on the type of affective display from the leader. Followers scored higher on creative tasks than analytical tasks when their leader displayed happiness.

Conversely, when their leader displayed sadness, participants scored higher on analytical tasks rather than creative tasks. In another task-based experimental study of leader mood and performance, Volmer (2012) found that teams performed better when their leader was in a positive mood than in a negative mood. The study revealed the relationship between leader mood and potency, defined as an "evaluation of team success" (p. 214), to be mediated by group affective tone. A significant relationship between leader mood and performance was also found in the first phase of Johnson's (2009) recruitment scenario speech study. Nevertheless, when the videoed leader speeches were transcribed and participants read the speeches (rather than watching a videotape), leaders expressing positive mood did not elicit better follower performance when compared to leaders expressing negative mood. Such findings indicate the significant relationship between leader mood and follower performance is likely attributable to the *delivery* of leadership speech, and thus, some element of behaviourally-influenced contagious transfer, and not the content of the speech.

Van Kleef et al. (2009) proposed that the effects of leader affective displays on performance to be moderated by followers' epistemic motivation (the motivation to engage in deep thinking) and follower affective reactions. In a military computer simulation task, followers worked together, coached by a confederate leader expressing either happiness or anger conditions, to protect restricted airspace by detecting, identifying and disabling enemy intruders whilst avoiding disabling friendly forces. The authors found that when teams had high epistemic motivation, leader displays of anger led to better task performance than did leader displays of happiness. Conversely, leader displays of happiness led to better performance that did leader displays of anger when teams were low in epistemic motivation and high in affective reactions. In another example, Tsai et al. (2009) conducted a longitudinal study of 10 supervisors and 282 employees in an insurance firm to examine the mediating role played by employee positive moods in the transformational leadership-group

outcome relationship. Sales agents were asked to recall and evaluate their own moods and rate the leader's transformational behaviors during the last week. Supervisors also rated their employees' task performance and co-worker helping behaviors. The data revealed that transformational leader behaviors were positively related to increased employees' positive moods, which in turn, accounted for a 25% increase in task performance. Similar findings were found in Chi and Huang's (2014) survey of transformational leader behaviours, group affective tone and performance in 32 Taiwanese technology firms. The findings indicated that transformational leadership influenced the group affective tone via team goal orientations, and that positive group affective tone was positively related to higher levels of team performance than negative group affective tone.

In an experimental study, Damen et al. (2008a) proposed "leader emotional displays to be more effective when there is a better 'affective match' between leader affective display and follower affective state" (p.869). This was characterized by whether participants processed more orders relative to an affective match (e.g., an angry leader with followers low in positive affect) or affective mismatch (e.g., an enthusiastic leader with followers low in positive affect). The researchers found that when there was an affective match between leaders and followers (e.g., an enthusiastic leader with followers high in positive affect), follower performance increased. Unlike previous studies of leader and follower affect, Damen et al. (2008a) argued that the contagion of affective phenomena is independent on leader affect. Specifically, if follower affect has the potential to moderate the effectiveness of a leader's affective display, a leader affect might not 'cause' follower affect.

Data on effect sizes of studies included within Theme 5 between affective phenomena and performance are presented in Table 7. Eight out of 10 studies comprising this theme reported effect sizes and were included in the mini meta-analysis. Consistent with thematic findings, follower positive affective states had a small positive effect on performance ($M \eta^2 =$

.10). A larger effect size was observed between positive group affective tone and performance (M η^2 = .34) than compared to follower positive affective phenomena and performance (M η^2 = .11), suggesting the importance of group members' collective affective states in shaping performance. In addition, negative group affective tone was observed to have a larger effect size on performance (M η^2 = .36) than compared to the relationship between positive group affective tone and performance (M η^2 = .34). Where the valence of contagion effects was not reported, the average effect size was greater between leader affective phenomena (M η^2 = .19) than compared to follower affective phenomena (M η^2 = .03), indicating the leader as an important influencer on performance.

Theme 6: **Individual susceptibility to contagion explains the contagion effect between leaders and followers.** In 4 (16%) studies (see. Table 8), susceptibility to emotional contagion has been characterized as an individual difference variable and measured using the self-rated Emotional Contagion Scale (ECS; Doherty, 1997). The initial evidence from this line of inquiry shows a relationship between susceptibility to emotional contagion and negative (rather than positive) group mood. That is, Sy and Choi (2013) found the emotional contagion susceptibility of group members increased mood convergence for negative moods only. This finding is consistent with other research that has shown negative moods to be more contagious than positive moods (e.g., Spoor & Kelly, 2009).

Using a survey design with 42 military dyads, Liang and Chi (2013) examined whether follower experiences of positive emotion was a mediator of the transformational leadership-performance relationship, in addition to whether susceptibility to positive emotions was a moderator of such a relationship. The mediated-moderation results showed follower positive emotions mediated the relationship between follower perceptions of transformational leadership and task performance, with this relationship being stronger when followers were higher in susceptibility to positive emotions than when they were lower in

susceptibility to positive emotions. In another example, Johnson's (2008) study of principal and teacher affect at work found that the positive relationship between leader positive affect and follower positive affect increased as follower susceptibility to emotional contagion increased. Johnson contested that in weaker, more complex environments (i.e., outside of strong controlled laboratory conditions) than previous laboratory studies, the likelihood of emotional contagion occurring was dependent on followers' susceptibility to contagion.

Cheng et al.'s (2012) field study of Taiwanese leaders and subordinates remains the only study included in the review to separately analyze both leaders' emotional contagion ability and followers' susceptibility to emotions as moderators of the leadership process. The survey revealed that leaders' ability and followers' susceptibility collectively was a significant moderator of the transformational leadership – job involvement relationship, however two-way interactions were not significant, and these variables did not act as independent moderators. Collectively, initial findings within this theme indicate that susceptibility to contagion of affective phenomena moderates the effectiveness of transformational leader behaviors.

Data on effect sizes of studies included within Theme 6 between susceptibility to contagion of affective phenomena and either leadership or affective phenomena are presented in Table 8. Effect sizes were reported in only one of three studies included within this theme. Studies reporting correlational data suggest a positive association between susceptibility to contagion and follower positive affective phenomena (Liang & Chi, 2013) and a negative association between susceptibility to contagion and follower negative affective phenomena (Sy & Choi, 2013). Similarly, Johnson (2008) reported a large effect size on susceptibility to contagion for follower positive affective states ($\eta^2 = .71$) than compared to negative affective states ($\eta^2 = .43$). This seems to contradict thematic findings that a relationship between susceptibility to emotional contagion and negative group mood as stronger than with positive

group moods, indicating that further investigation is required to clarify the valence of contagion susceptibility.

Discussion

The aim of this systematic review was to synthesize the body of research examining leadership and the contagion of affective phenomena. The findings, supported by mini meta-analyses, indicate multiple, consistent relationships from research that employ a range methodological and conceptual approaches across multiple scholarly domains. The six themes observed within the extant literature indicate a number of salient messages: 1) that charisma and transformational leadership styles are conducive to leader positive affective expressions; 2) that charisma and transformational leadership styles are advantageous to follower positive affective expressions; 3) contagion effects are greater when there is congruence between leader and follower affective states; 4) a direct relationship exists between perceptions of leader effectiveness and leader and follower affective experience; 5) group members' positive affective states can increase performance, especially when there is a congruence between leaders' and followers' affective states, and finally; 6) individual susceptibility to contagion is a possible explanatory mechanism of the contagion effect between leaders and followers.

Theoretical Considerations

This review brings to attention a fundamental limitation of the existing literature on contagion regarding the lack of conceptual clarity and alignment. That is, in over a quarter of the reviewed studies, researchers investigated and measured mood contagion, but used *emotional* contagion as the conceptual foundation. While emotional contagion has generally been employed as the umbrella term for the research reviewed here, using this term as rubric

is a misnomer, particularly as it has been the contagion of mood and affect, and not emotion, which has most often been researched. While we seek to bring together the siloed research in these areas, in the pursuit of conceptual clarity, we would encourage researchers to use more accurate terminology and ensure that their work aligned with the most appropriate conceptual body of work. Where conceptual foundations are not present for a given research question (i.e., a study on mood convergence drawing from emotion convergence), we would recommend the use of the general rubric of "contagion of affective phenomena".

The research reviewed here indicates that moods align between leaders and followers (e.g., Volmer, 2012) and that the moods experienced by dyads become more similar over time (e.g., Spoor & Kelly, 2009). Nevertheless, it remains to be confirmed whether interpersonal affective transfer is a result of contagion or convergence. For example, Tee et al. (2013) concluded that contagion was a plausible explanation of the transfer of mood from followers to leaders but presented no empirical evidence for this causality. At present, it is unclear whether these two respective explanations of shared affective experience are inter-twined or distinctive processes. For instance, one explanation may be that group members infect one another (i.e., contagion), which contributes to a convergence in affective experiences (cf. Anderson, Keltner, & John, 2003). This multi-mechanistic perspective has recently been challenged by Aguilar (2013), who argued that contagion and convergence are distinctive explanations of emotional assimilation in groups. Aguilar proposed that emotional convergence is the result of multiple social processes (e.g., normative emotional influence, adherence of others' emotional states), and outlined subtle differences between the mechanisms of convergence and contagion based on a pilot experimental investigation. Following a prime to either a happy or sad norm, participants watched a confederate's positive or negative response to a series of ambiguous video clips they had previously viewed. Confederate and participant emotional expressions were rated using split-screen

video recordings. Having been primed to a sad norm and after watching a confederate's positive response, participants positive affect rating conformed to the positive stimulus. Aguilar stated that assimilation to the confederate's positive emotional state did not result from the mimicry of emotional behavior, and thus, alternative mechanisms may explain the affective transfer. Further investigation is recommended to better understand the conditions under which these processes occur, and whether shared affective experiences are intertwined or distinctive.

A number of studies reviewed here focused on the role of *positive* affective phenomena (e.g., Bono & Ilies, 2006; Tsai et al., 2009). This is not surprising given the broader literature of affectivity indicating positive affect associated with greater cognitive flexibility and improved creative problem solving in a range of contexts (cf., Isen, 1999). Nevertheless, the extant body of work has generally elided the study of contagion of *negative* affective phenomena. This is somewhat surprising given there is evidence to suggest that negative moods are more contagious (e.g., Sy & Choi, 2013), are a stronger determinant of leader perceptions (e.g., Dasborough, 2006) and are related to greater task exertion (Sy et al., 2005). Moreover, the mini meta-analysis revealed a stronger effect size between leadership and follower negative affective phenomena compared to positive affective phenomena. The contagion of negative affective phenomena has also been found to have some group benefits, such as stimulating persistence in task performance (Damen et al., 2008a; Sy et al., 2005) and increasing creativity in specific circumstances (George & Zhou, 2002). Moreover, it has been indicated that frequent, prolonged negative emotional displays can have negative group consequences (e.g., Sy et al., 2005), and as such it would be valuable to examine whether leader negative affective displays of a short duration, and which relay negative information or feedback in a constructive manner, influence subsequent follower performance.

Our findings suggest that when there is congruence between a sender's and receiver's affective states, the contagion effect is greater (e.g., Sy & Choi, 2013; Sy et al., 2013; Volmer, 2012). The mini meta-analysis indicated two significant effect sizes, between leadership and follower positive affective phenomena (Theme 2) as well as between leader positive affective phenomena and follower positive affective phenomena (Theme 3). Nevertheless, there may be circumstances wherein negative affective displays are advantageous for high performance. Damen et al. (2008a) speculated that in times of organizational crisis and change (as opposed to stable periods), the display of negative emotions by leaders is more effective. The activation of an opposing mood in others to the mood expressed by an individual is referred to as "discordant" contagion (Hatfield et al., 1994). This area lacks understanding; for example, it is unclear whether there are conditions where a leader's negative affective display might be more influential on performance than positive affective displays.

Methodological Considerations

A diverse array of measures has been used to examine the contagion of affective phenomena. Given the majority of the literature employs emotional contagion as the conceptual foundation, it is surprising that the Emotional Contagion Scale has been utilized so sparingly by researchers, especially as the ECS is the only psychometrically validated questionnaire specifically measuring individual differences in susceptibility to the contagion of basic emotions (viz. anger, fear, sadness, love and happiness). It is our assumption that the ECS may be deemed by researchers as an inappropriate measure of affective states (e.g., contagion of mood) given the target-centric, intense, and short lived nature of emotions in comparison to moods (cf. Forgas, 1995). While researcher preferences and the conceptual nuances of these affective experiences (i.e., tendency of studies reviewed to focus on broad,

dichotomous classifications of emotion) may explain why the PANAS and JAS have been administered instead of the ECS, neither the PANAS nor the JAS are designed to measure the *transfer* of affective phenomena. As such, the ECS remains the only measure of the contagion of affective phenomenon, and it is specifically designed to measure emotion. The consistent measurement use by researchers of a contagion instrument is also likely to increase the comparative value of effect sizes and meta-analytical procedures to summarize them. In sum, the development of valid measurement instruments for contagion processes is imperative to progress our understanding of interpersonal relationships, and we call on researchers to address the need for psychometric advancement.

Another key finding from our review was that leader affective states were manipulated in (13/25) experimental or quasi-experimental studies in laboratory settings. While we acknowledge that there is debate regarding the theory of emotion, according to Ekman (1999), there are an array of primary discrete emotions that are experienced by individuals. Therefore, it could be argued that our current understanding of leader emotional contagion in the complexity of the real world is restricted due to the limited number of affective conditions in laboratory settings. In addition, the span of all studies involving manipulations of leadership and/or affective experiences took place within one day, where the examination of true behavior is time constrained. As a result of our observations, our recommendation would be for researchers to increase understanding of how leaders influence the spread of emotions in field settings. Researchers might also seek scenario and field data (e.g., Bono & Ilies, 2006; Damen et al., 2008b) to give a richer insight into the contagion process across domains.

A number of studies (e.g., Erez et al., 2008; Sy & Choi, 2013; Sy et al., 2005) have examined artificial group interaction, where participants were randomly assigned leader and follower roles and set elaborate laboratory group scenarios. Because of the delicate status as

leader in artificial group settings coupled with a potential lack of assumed adequate skills and

qualities, leaders may be perceived as emotionally ineffectual by their randomly assigned

followers. Natural work groups have a shared history, exposure to common events and

external stimuli, similar emotional culture and trait affective dispositions (owing to their

long-standing groups), and are thus more likely to react and interact in similar ways (cf.

Barsade & Knight, 2015). One alternative solution may be for researchers to create

conditions that allow an individual to emerge as leader prior to experimentation, rather than

an artificial assignation of a leader. Research on emergent group leaders has stemmed from a

rise in self-managing work teams and as such a need for leaders to emerge within the group,

proposed to represent the "emotional manager" (Pescosolido, 2002). As suggested by Tsai et

al. (2009), another solution may be for researchers to statistically control for followers' or

observers' familiarity with the leader within their investigations. In addition, a leader may

regulate their emotions depending on the social situation (Ekman & Friesen, 1975), and thus,

researchers should be cognizant of the influence of social role expectations on participants.

Recommendations for future research

Overall, this review has presented salient insights regarding leadership and the

contagion of affective phenomena from experimental, organizational, education, public

services, and military contexts. The review findings strongly indicate that leaders and

followers can be affected by emotions, mood, and affect, such that contagion can flow

between followers and leaders. One fruitful avenue for future research may be the reciprocal

effects between individual's contagion *ability* and individual *susceptibility* to the contagion of

affective experiences in respect to both leaders and followers. Given the interaction between

followers and leaders observed within the body of research, the directionality of such

influence is difficult to discern, and thus it would be prudent to control for a leader's ability

to influence the spread of emotions, and followers' dispositional susceptibility to emotion. Some leadership styles (e.g., transformational, charismatic) appear to be reliant of the conveyance of emotion in order to be effective. Nevertheless, the relationship between a leader's contagion ability and emotional expressivity remains unclear, and therefore consideration of these personality variables is recommended. Given leaders can be susceptible to the contagion of affective experiences (e.g., Tee et al., 2013), it might also be prudent to consider the affective abilities (e.g., emotional intelligence) or personality (e.g., alexithymia) of followers. In terms of susceptibility, the majority of the studies within the present review have examined contagion from the leader's perspective. It is likely that group members will differentially react to a leader's emotional expressions, given that individuals vary in their *susceptibility* to contagion (Doherty, 1997). For instance, highly susceptible followers are more likely to be influenced by a leader's emotional expressions than followers low in susceptibility. Therefore, we recommend that researchers consider a follower-centric approach to leadership by further investigating followers' contagion susceptibility, while also considering the need to control for this variable in contagion studies.

Further investigation of the nuances and complex interplay between different emotion processes is required to fully understand *how* emotional contagion occurs between leaders and followers. The broad classification of affective phenomena as either positive or negative valence within the presented studies presently limits our understanding of these complex linkage mechanisms. Conceptualising emotion based on appraisal patterns and action tendencies rather than valence might develop better understanding of the nuances and interplay between discrete emotional states, rather than diffuse mood states, in social interactions (Elfenbein, 2014). For example, in everyday life individuals experience a blend of emotions. An elite athlete might feel happy about their individual performance despite experiencing sadness at their team's loss and frustration with the coach's inability to manage

the team strategy. How these mixed affective states are transferred in social interactions is an area that requires further research. Researchers may wish to frame such investigations using the socio-functional approach to emotions in Van Kleef's (2009) Emotions as Social Information (EASI) model.

All studies within this review examined interpersonal-level relationships between followers and their immediate leader or supervisor. Nevertheless, as contagion has been outlined as the 'emotional links' across multiple levels in organizations (cf. Tee, 2015), we recommend researchers consider using multilevel investigations in research designs. For example, researchers might examine different power relationships that exist within multilevel organizations or leaders at multiple levels of an organization's hierarchy, which could impact the leader's influence over their followers. Further methodological consideration may also be warranted within the leadership and emotional contagion literature given the calls for research to tackle problems associated endogeneity (e.g., Antonakis, Bendaham, Jacquart, & Lalive, 2010; Arthur, Bastardoz, & Eklund, 2017). Antonakis et al. (2010) identify seven endogeneity-related issues that threaten the validity of leadership research. These are, omitted variables, omitted selection, simultaneity, measurement error, common-method variance, inconsistent inference, and model misspecification. When researchers are designing studies in relation to leadership and emotional contagion it would be prudent to consult with papers such as Antonakis et al. (2010) in an endeavour to minimise threats to validity that are associated with endogeneity.

Limitations

Limitations of this systematic review should be acknowledged. Firstly, this review included a small number of studies (n=25) upon which the thematic results are based. In addition, the themes identified were limited by largely descriptive grouping. It should be noted, however that although some areas of the synthesis are based on more studies than others, it does not necessarily mean that these areas are more trustworthy or should be given greater weight (Thomas, O'Mara-Eves, Harden, & Newman, 2012). The analytic themes we have presented offer a higher level of conceptual, theoretical and methodological considerations applicable across contexts.

Compared to traditional systematic reviews, the thematic synthesis approach does not include a quality assessment stage, and so the included studies were not judged on their ability to answer their research question. As noted by qualitative researchers (e.g., Dixon-Woods et al., 2006; Thomas & Harden, 2008), empirically-tested methodology for excluding studies based on quality does not, at present, exist. We instead present comprehensive details about the primary studies to allow the reader to judge the quality for themselves.

We conducted mini meta-analyses firstly when an included manuscript conducted more than one study within their publication, and secondly with all available effect sizes from studies included within each theme. Correlations were reported when effect sizes were not given as this was the consistent statistic for comparison. Only two effect sizes analyzed using one-sample t-tests were significant, which perhaps could have been due to a limited availability of reported effect sizes for each theme. It is surprising to the authors that a number of manuscripts in review did not report effect sizes when they had undertaken quantitative studies. Researchers in this domain should endeavor to report effect sizes in future work so that full meta-analytic procedures can be conducted and heterogeneity and magnitude of findings can be summarized.

Conclusion

In sum, this systematic review has synthesized the body of research examining leadership and

the contagion of affective phenomena from multiple domains. The findings provide a salient

insight into the diverse arrange of relationships observed in the extant literature and offer rich

theoretical, methodological, and future research implications.

References

References marked with an asterisk indicate studies included in the synthesis

Adams, R. J., Smart, P., & Huff, A. S. (2017). Shades of grey: guidelines for working with

the grey literature in systematic reviews for management and organizational

studies. *International Journal of Management Reviews*, *19*(4), 432-454.

Aguilar, M. (2013). *Emotional Contagion or Emotional Convergence? An Analysis of Two*

Explanations for Emotional Assimilation in Groups (Doctoral dissertation).

Anderson, C., Keltner, D., & John, O. P. (2003). Emotional convergence between people

over time. *Journal of Personality and Social Psychology*, *84*(5), 1054-1068.

http://psycnet.apa.org/doi/10.1037/0022-3514.84.5.1054

Anghel, A. (2010). Emotional contagion in a cohesive rugby team. *Sport Science Review*,

19(3-4), 165-178. https://doi.org/10.2478/v10237-011-0024-9

Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. (2010). On making causal claims: A

review and recommendations. *The Leadership Quarterly*, *21*(6), 1086-1120.

https://doi.org/10.1016/j.leaqua.2010.10.010

Arthur, C. A., Bastardoz, N., & Eklund, R. (2017). Transformational leadership in sport:

Current status and future directions. *Current Opinion in Psychology*, *16*, 78-83.

https://doi.org/10.1016/j.copsyc.2017.04.001

*Asadullah, M. A., Mumtaz, M., Batool, Z., & Hameed, I. (2016). Emotions, helping

behavior and leaders' effectiveness: a serial mediation model. *South Asian Journal of*

Global Business Research, *5*(3), 323-340. https://doi.org/10.1108/SAJGBR-01-2016-

0003

Ashkanasy, N. M., & Tse, B. (2000). Transformational leadership as management of

emotion: A conceptual review. In N. M. Ashkanasy, & Zerbe, W. J. (Eds). *Emotions*

in the work place: Research, theory and practice. Stamford, CT, United States:

Greenwood Publishing Group.

Barsade, S. G. (2002). The ripple effect: Emotional contagion and its influence on group

behavior. *Administrative Science Quarterly*, *47*(4), 644-675.

https://doi.org/10.2307%2F3094912

Barsade, S., Brief, A. P., Spataro, S. E., & Greenberg, J. (2003). The affective revolution in

organizational behavior: The emergence of a paradigm. In J. Greenberg (Ed).

Organizational behavior: The state of science. Mahwah, NJ, United States: Lawrence

Erlbaum Associates Publishers.

Barsade, S. G., & Knight, A. P. (2015). Group affect. *Annual Review of Organisational*

Psychology and Organisational Behavior, *2*(1), 21-46.

https://doi.org/10.1146/annurev-orgpsych-032414-111316

*Becker, E. S., Goetz, T., Morger, V., & Ranellucci, J. (2014). The importance of teachers'

emotions and instructional behavior for their students' emotions–An experience

sampling analysis. *Teaching and Teacher Education*, *43*, 15-26.

https://doi.org/10.1016/j.tate.2014.05.002

Blaikie, N. (2010). *Designing social research: The logic of anticipation (2nd edition).*

Cambridge, U.K.: Polity Press.

*Bono, J. E., & Ilies, R. (2006). Charisma, positive emotions and mood contagion. *The Leadership Quarterly*, *17*(4), 317-334. https://doi.org/10.1016/j.leaqua.2006.04.008

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Brief, A. P., Burke, M. J., George, J. M., Robinson, B. S., & Webster, J. (1988). Should negative affectivity remain an unmeasured variable in the study of job stress? *Journal of Applied Psychology*, *73*(2), 193-198.

Burke, M. J., Brief, A. P., George, J. M., Roberson, L., & Webster, J. (1989). Measuring affect at work: Confirmatory analysis of competing mood structures with conceptual linkage to cortical regulatory systems. *Journal of Personality and Social Psychology*, 57, 1091–1102.

*Cheng, Y. N., Yen, C. L., & Chen, L. H. (2012). Transformational leadership and job involvement: The moderation of emotional contagion. *Military Psychology*, *24*(4), 382. https://doi.org/10.1080/08995605.2012.695261

*Cherulnik, P. D., Donley, K. A., Wiewel, T. S. R., & Miller, S. R. (2001). Charisma is contagious: The effect of leaders' charisma on observers' affect. *Journal of Applied Social Psychology*, *31*(10), 2149-2159. https://doi.org/10.1111/j.1559-1816.2001.tb00167.x

*Chi, N. W., Chung, Y. Y., & Tsai, W. C. (2011). How do happy leaders enhance team success? The mediating roles of transformational leadership, group affective tone, and Team processes. *Journal of Applied Social Psychology*, *41*(6), 1421-1454. https://doi.org/10.1111/j.1559-1816.2011.00767.x

*Chi, N. W., & Huang, J. C. (2014). Mechanisms linking transformational leadership and team performance: The mediating roles of team goal orientation and group affective

tone. *Group & Organization Management*, *39*(3), 300-325.

https://doi.org/10.1177%2F1059601114522321

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd edition).

Hillsdale, NJ: Erlbaum.

Collins, A. L., Lawrence, S. A., Troth, A. C., & Jordan, P. J. (2013). Group affective tone: A

review and future research directions. *Journal of Organizational Behavior*, *34*(S1).

https://doi.org/10.1002/job.1887

Conger, J. A., & Kanungo, R. N. (1998). *Charismatic leadership in organizations*. Thousand

Oaks, CA: Sage Publications.

*Damen, F., Van Knippenberg, B., & Van Knippenberg, D. (2008a). Affective match in

leadership: Leader emotional displays, follower positive affect, and follower

performance. *Journal of Applied Social Psychology*, *38*(4), 868-902.

https://doi.org/10.1111/j.1559-1816.2008.00330.x

*Damen, F., Van Knippenberg, D., & Van Knippenberg, B. (2008b). Leader affective

displays and attributions of charisma: The role of arousal. *Journal of Applied Social

Psychology*, *38*(10), 2594-2614. https://doi.org/10.1111/j.1559-1816.2008.00405.x

Dasborough, M. T. (2006). Cognitive asymmetry in employee emotional reactions to

leadership behaviors. *The Leadership Quarterly*, *17*(2), 163-178.

https://doi.org/10.1016/j.leaqua.2005.12.004

Davidson, R. J., Sherer, K. R., & Goldsmith, H. H. (2009). *Handbook of affective sciences*.

Oxford University Press.

Dixon-Woods M., Bonas S., Booth A., Jones D. R., Miller T., Sutton A. J., Shaw R. L.,

Smith J. A., & Young B. (2006). How can systematic reviews incorporate qualitative

research? A critical perspective. *Qualitative Research*, *6* (1) 27-44.

Doherty, R. W. (1997). The emotional contagion scale: A measure of individual differences. *Journal of Nonverbal Behavior*, *21*(2), 131-154. https://doi.org/10.1023/A:1024956003661

Doherty, R. W., Orimoto, L., Singelis, T. M., Hatfield, E., & Hebb, J. (1995). Emotional contagion gender and occupational differences. *Psychology of Women Quarterly*, *19*(3), 355-371. https://doi.org/10.1111%2Fj.1471-6402.1995.tb00080.x

*Eberly, M. B., & Fong, C. T. (2013). Leading via the heart and mind: The roles of leader and follower emotions, attributions and interdependence. *The Leadership Quarterly*, *24*(5), 696-711. https://doi.org/10.1016/j.leaqua.2013.05.003

Ekman, P. (1999). Basic emotions. In T. Dalgleish, & M. J. Power (Eds.) *Handbook of cognition & emotion*. Chichester, England: John Wiley & Sons.

Ekman, P., & Friesen, W. V. (1975). *Unmasking the face: A guide to recognizing emotions from facial cues.* Englewood Cliffs, NJ: Prentice Hall.

Elfenbein, H. A. (2014). The many faces of emotional contagion: An affective process theory of affective linkage. *Organizational Psychology Review*, 4(4), 326-362. https://doi.org/10.1177%2F2041386614542889

*Erez, A., Misangyi, V. F., Johnson, D. E., LePine, M. A., & Halverson, K. C. (2008). Stirring the hearts of followers: charismatic leadership as the transferal of affect. *Journal of Applied Psychology*, *93*(3), 602. https://doi.org/10.1037/0021-9010.93.3.602

Forgas, J. P. (1995). Mood and judgment: the affect infusion model (AIM). *Psychological Bulletin*, *117*(1), 39-66. http://psycnet.apa.org/doi/10.1037/0033-2909.117.1.39

Friedman, H. S., Prince, L. M., Riggio, R. E., & DiMatteo, M. R. (1980). Understanding and assessing nonverbal expressiveness: The Affective Communication Test. *Journal of Personality and Social Psychology, 39*(2), 333-351.

George, J. M., & Zhou, J. (2002). Understanding when bad moods foster creativity and good ones don't: the role of context and clarity of feelings. *Journal of Applied Psychology*, *87*(4), 687-697. http://psycnet.apa.org/doi/10.1037/0021-9010.87.4.687

Goh, J. X., Hall, J. A., & Rosenthal, R. (2016). Mini meta-analysis of your own studies: Some arguments on why and a primer on how. *Social and Personality Psychology Compass*, *10*(10), 535-549.

Gooty, J., Connelly, S., Griffith, J., & Gupta, A. (2010). Leadership, affect and emotions: A state of the science review. *The Leadership Quarterly*, *21*(6), 979-1004. https://doi.org/10.1016/j.leaqua.2010.10.005

Hackman, J. R. (1982). *A set of methods for research on work groups* (Tech. Rep. No. 1). New Haven, CT: Yale University, Group Effectiveness Research Project, School of Organization and Management.

Hatfield, E., Bensman, L., Thornton, P. D., & Rapson, R. L. (2014). New perspectives on emotional contagion: a review of classic and recent research on facial mimicry and contagion. *Interpersona*, *8*(2), 159. doi:10.5964/ijpr.v8i2.162

Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1994). *Emotional contagion*. New York: Cambridge University Press.

Humphrey, R. H., Burch, G. F., & Adams, L. L. (2016). The benefits of merging leadership research and emotions research. *Frontiers in Psychology*, *7*, 1022. https://doi.org/10.3389/fpsyg.2016.01022

Isen, A. M. (1999). On the relationship between affect and creative problem solving. In S. Russ (Ed). *Affect, creative experience, and psychological adjustment*. London, UK: Brunner/Mazel.

*Johnson, S. K. (2008). I second that emotion: Effects of emotional contagion and affect at work on leader and follower outcomes. *The Leadership Quarterly*, *19*(1), 1-19. https://doi.org/10.1016/j.leaqua.2007.12.001

*Johnson, S. K. (2009). Do you feel what I feel? Mood contagion and leadership outcomes. *The Leadership Quarterly*, *20*(5), 814-827. https://doi.org/10.1016/j.leaqua.2009.06.012

Joseph, D. L., Dhanani, L. Y., Shen, W., McHugh, B. C., & McCord, M. A. (2015). Is a happy leader a good leader? A meta-analytic investigation of leader trait affect and leadership. *The Leadership Quarterly*, *26*(4), 557-576. https://doi.org/10.1016/j.leaqua.2015.04.001

*Liang, S. G., & Chi, S. C. S. (2013). Transformational leadership and follower task performance: The role of susceptibility to positive emotions and follower positive emotions. *Journal of Business & Psychology*, *28*(1), 17-29. https://doi.org/10.1007/s10869-012-9261-x

* Madera, J. M., & Smith, D. B. (2009). The effects of leader negative emotions on evaluations of leadership in a crisis situation: The role of anger and sadness. *The Leadership Quarterly*, *20*(2), 103-114. https://doi.org/10.1016/j.leaqua.2009.01.007

McColl-Kennedy, J. R., & Anderson, R. D. (2002). Impact of leadership style and emotions on subordinate performance. *The Leadership Quarterly*, *13*(5), 545-559. https://doi.org/10.1016/S1048-9843(02)00143-1

Moll, T., Jordet, G., & Pepping, G. J. (2010). Emotional contagion in soccer penalty shootouts: Celebration of individual success is associated with ultimate team success. *Journal of Sports Sciences*, *28*(9), 983-992. https://doi.org/10.1080/02640414.2010.484068

Pescosolido, A. T. (2002). Emergent leaders as managers of group emotion. *The Leadership Quarterly*, *13*(5), 583-599. https://doi.org/10.1016/S1048-9843(02)00145-5

Rajah, R., Song, Z., & Arvey, R. D. (2011). Emotionality and leadership: Taking stock of the past decade of research. *The Leadership Quarterly*, *22*(6), 1107-1119. https://doi.org/10.1016/j.leaqua.2011.09.006

*Sacavém, A., Martinez, L. F., da Cunha, J. V., Abreu, A. M., & Johnson, S. K. (2017). Charismatic Leadership: A Study on Delivery Styles, Mood, and Performance. *Journal of Leadership Studies*, *11*(3), 21-38. https://doi.org/10.1002/jls.21519

*Spoor, J. R., & Kelly, J. R. (2009). Mood convergence in dyads: Effects of valence and leadership. *Social Influence*, *4*(4), 282-297. https://doi.org/10.1080/15534510902805366

*Sy, T., & Choi, J. N. (2013). Contagious leaders and followers: Exploring multi-stage mood contagion in a leader activation and member propagation (LAMP) model. *Organizational Behavior and Human Decision Processes*, *122*(2), 127-140. https://doi.org/10.1016/j.obhdp.2013.06.003

*Sy, T., Choi, J. N., & Johnson, S. K. (2013). Reciprocal interactions between group perceptions of leader charisma and group mood through mood contagion. *The Leadership Quarterly*, *24*(4), 463-476. https://doi.org/10.1016/j.leaqua.2013.02.002

*Sy, T., Côté, S., & Saavedra, R. (2005). The contagious leader: impact of the leader's mood on the mood of group members, group affective tone, and group processes. *Journal of Applied Psychology*, *90*(2), 295. https://doi.org/10.1037/0021-9010.90.2.295

Tee, E. Y. (2015). The emotional link: Leadership and the role of implicit and explicit emotional contagion processes across multiple organizational levels. *The Leadership Quarterly*, *26*(4), 654-670. https://doi.org/10.1016/j.leaqua.2015.05.009

*Tee, E., Ashkanasy, N. M., & Paulsen, N. (2013). The influence of follower mood on leader mood and task performance: An affective, follower-centric perspective of leadership. *The Leadership Quarterly*, *24*(4), 496-515. https://doi.org/10.1016/j.leaqua.2013.03.005

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, *8*(1), 8-45. https://doi.org/10.1186/1471-2288-8-45

Thomas, J., O'Mara-Eves, A., Harden, A., & Newman, M. (2012). Synthesis methods for combining and configuring textual or mixed methods data. In D. Gough, S. Oliver, & J. Thomas (Eds). *An introduction to systematic reviews*. London, UK: Sage.

To, M. L., Herman, H. M., & Ashkanasy, N. M. (2015). A multilevel model of transformational leadership, affect, and creative process behavior in work teams. *The Leadership Quarterly*, *26*(4), 543-556. https://doi.org/10.1016/j.leaqua.2015.05.005

Totterdell, P. (2000). Catching moods and hitting runs: mood linkage and subjective performance in professional sport teams. *Journal of Applied Psychology*, *85*(6), 848-859. http://psycnet.apa.org/doi/10.1037/0021-9010.85.6.848

*Tsai, W. C., Chen, H. W., & Cheng, J. W. (2009). Employee positive moods as a mediator linking transformational leadership and employee work outcomes. *The International Journal of Human Resource Management*, *20*(1), 206-219. https://doi.org/10.1080/09585190802528714

Van Kleef, G. A. (2009). How emotions regulate social life: The emotions as social information (EASI) model. *Current Directions in Psychological Science*, *18*(3), 184-188. https://doi.org/10.1111%2Fj.1467-8721.2009.01633.x

Van Kleef, G. A., Homan, A. C., Beersma, B., & van Knippenberg, D. (2010). On angry leaders and agreeable followers: How leaders' emotions and followers' personalities

shape motivation and team performance. *Psychological Science*, 21(12), 1827-1834. https://doi.org/10.1177%2F0956797610387438

*Van Kleef, G. A., Homan, A. C., Beersma, B., Van Knippenberg, D., Van Knippenberg, B., & Damen, F. (2009). Searing sentiment or cold calculation? The effects of leader emotional displays on team performance depend on follower epistemic motivation. *Academy of Management Journal*, *52*(3), 562-580. https://doi.org/10.5465/amj.2009.41331253

van Knippenberg, D., & van Kleef, G. A. (2016). Leadership and affect: Moving the hearts and minds of followers. *The Academy of Management Annals*, *10*(1), 799-840. https://doi.org/10.1080/19416520.2016.1160515

van Knippenberg, B., & van Knippenberg, D. (2005). Leader self-sacrifice and leader effectiveness: The moderating role of leader prototypicality. *Journal of Applied Psychology, 90*, 25–37. https://doi.org/10.1037/0021-9010.90.1.25

Vijayalakshmi, V., & Bhattacharyya, S. (2012). Emotional contagion and its relevance to individual behavior and organizational processes: A position paper. *Journal of Business and Psychology*, *27*(3), 363-374. https://doi.org/10.1007/s10869-011-9243-4

*Visser, V. A., van Knippenberg, D., van Kleef, G. A., & Wisse, B. (2013). How leader displays of happiness and sadness influence follower performance: Emotional contagion and creative versus analytical performance. *The Leadership Quarterly*, *24*(1), 172-188. https://doi.org/10.1016/j.leaqua.2012.09.003

*Volmer, J. (2012). Catching leaders' mood: Contagion effects in teams. *Administrative Sciences*, *2*(3), 203-220. https://doi.org/10.3390/admsci2030203

Wang, G., Oh, I. S., Courtright, S. H., & Colbert, A. E. (2011). Transformational leadership and performance across criteria and levels: A meta-analytic review of 25 years of

research. *Group & Organization Management*, *36*(2), 223-270.

10.1177/1059601111401017

Watson, D., & Clark, L. A. (1994). The PANAS-X. *Manual for the positive and negative affect schedule—Expanded form*. The University of Iowa.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063-1070.
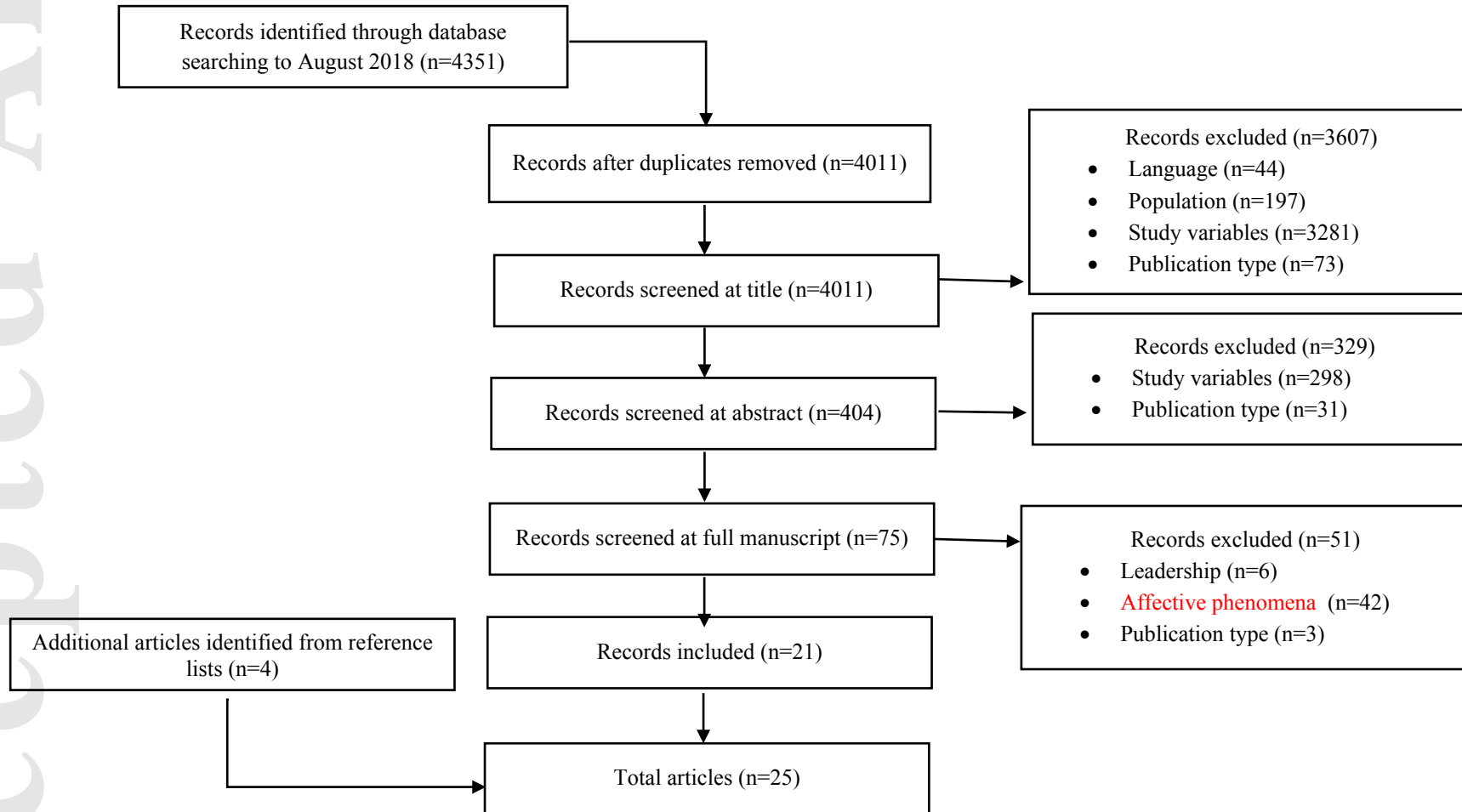
"""""""""""""Figure 1. Article search and selection process.

Records identified through database searching to August 2018 (n=4351)

Records after duplicates removed (n=4011)

Records excluded (n=3607)
- Language (n=44)
- Population (n=197)
- Study variables (n=3281)
- Publication type (n=73)

Records screened at title (n=4011)

Records excluded (n=329)
- Study variables (n=298)
- Publication type (n=31)

Records screened at abstract (n=404)

Records screened at full manuscript (n=75)

Records excluded (n=51)
- Leadership (n=6)
- Affective phenomena (n=42)
- Publication type (n=3)

Additional articles identified from reference lists (n=4)

Records included (n=21)

Total articles (n=25)

Table 1. Inclusion criteria.

	Inclusion Criteria
Population	Adult population
Research design	Quantitative
	Qualitative
	Mixed methods
Leadership	Measurement and/or manipulation
Affective phenomena	Measurement and/or manipulation
Study variables	Data pertaining to both leader and follower affect, mood or emotion
Language restriction	English
Type of studies	Peer reviewed articles (editorial, position and review articles were excluded).

Table 2. Studies included in the review.

Study	Study Design	Participant Information	Instrumentation	Main Findings
Asadullah et al. (2016)	Cross-sectional field study of hospitality workers	154 supervisors and 400 subordinates (gender ratio and mean age not reported) from hotels and restaurants in Pakistan	Happiness subscale from the Emotional Contagion Scale, love subscale from Dispositional Positive Emotion Scale, 7-item scale to measure leaders' helping behavior, performance management behavior questionnaire.	Followers' positive emotions positively mediated the relationship between leaders' positive emotions and leaders' effectiveness. Followers' emotions were positively related to their leaders' helping behavior.
Becker et al. (2014)	Experience sampling quantitative study of teachers and students	149 (93 M, 56 F) school students (mean age = 15.63 years)	Academic Emotions Questionnaire, Inventory of Perceived Study Environment.	Perceived teachers' emotions and instructional behavior significantly predicted students' emotions.
Bono & Ilies (2006)	Natural work setting (studies 1 and 2), and quasi-experimental setting (studies 3 and 4)	133 (41 M, 92 F) students (mean age not reported)	Positive affect sub-scale from the Positive Affect and Negative Affect Scale, 5-item scale to measure leader effectiveness.	Leader's positive emotional expressions were linked to mood states of simulated followers. Leader's positive emotional expressions and follower mood influenced ratings of leader effectiveness and attraction to leader.
Cheng et al. (2012)	Cross-sectional field study of the Taiwan army	210 (210 M, 0 F) military personnel (mean age = 22.23 years)	Multifactor Leadership Questionnaire-5X, Affective Communication Test, ECS, 10-item scale to measure job involvement.	The influence of transformational leadership on subordinates' job involvement was moderated by leaders' emotional contagion and subordinates' susceptibility.
Cherulnik et al. (2001)	Quasi-experimental study	6 (4 M, 2 F) student leaders and 20 (11 M,	Behavioural measures assessing nonverbal	Observers of a charismatic leaders giving a simulated campaign speech gave more smiles, more intense smiles, looked away from the

		9 F) student observers	charismatic leadership: facial expressions, intensity of positive expressions, consistency of gaze towards the camera.	leader less often, and more time looking at the leader than observers of a noncharismatic leader.
Chi et al. (2011)	Cross-sectional field study of insurance firms	365 (142 M, 223 F) employees and 85 leaders (mean age = 31.5 years)	PANAS, MLQ-5X, 7-item scale to measure team goal commitment, 3-item scale to measure team satisfaction, 3-item scale to measure team helping behaviors, 4-item scale to measure subjective performance.	Team leaders who experienced positive moods were more likely to engage in transformational leadership explicitly and influence positive affective tone of their teams implicitly, which, in turn, enhanced team performance.
Chi & Huang (2014)	Cross-sectional field study of research and development firms	61 team leaders (54 M, 7 F) (mean age = 36.11 years) and 263 team members (168 M, 95F) (mean age = 31.08 years)	MLQ, PANAS, 9-item scale to measure team goal orientation, 5-item scale to measure team performance.	Transformational leadership positively predicted positive group affective tone through team learning goal orientation but negatively predicted negative group affective tone via team avoiding goal orientation. Positive group affective tone was associated with positive team performance, whereas negative group affective tone was negatively associated with team performance.
Damen et al. (2008a)	Quasi-experimental study	47 (26 M, 21 F) students (mean age = 20.47 years)	Positive affect subscale from the PANAS, simulation to measure task performance, extra-role compliance manipulations.	Leader display of emotions had more positive effects on follower behavior if the match between the valence of leader emotion and follower positive affect was strong rather than weak.
Damen et al. (2008b)	Scenario experiment	71 (gender not reported) employees from three organizations (mean age = 38.3 years)	The authors developed the following scales to measure: leader affect (single-item), perceived charisma (5-items), transfer of arousal (2-items), transfer of positive feelings (2-items).	The transfer of positive feelings to followers mediated the effect of leader displays of enthusiasm on follower attributions of charisma. High arousal increased the influence of leader positive affect.
Eberly & Fong (2013)	Quasi-experimental study	167 (102 M, 65 F) students (mean age not reported)	PANAS-X, 5-items from intentions scale, 5-items from interdependence	Followers shared their leaders' emotions, and made attributions about the sincerity of their leaders' intentions. These attributions affected their perceptions of their leader's effectiveness.

			scale, 5-items from leadership effectiveness scale.	
Erez et al. (2008)	Quasi-experimental (study 1), and cross-sectional field investigation (study 2)	264 (251 M, 13 F) firefighters and 48 officers (mean age = 34.4 years)	Affect Balance Scale, charisma subscale of the MLQ, positive affect subscale of the PANAS.	Leaders' positive affect and positive expressiveness were positively related to follower's positive affect. Leaders' positive affect was negatively related to followers' negative affect.
Johnson (2008)	Cross-sectional field study of teachers and principals	112 (19 M, 91 F) teachers and 16 principals (3 M, 13 F) (mean ages = not reported)	Job Affect Scale, PANAS, MLQ-5X, ECS, 15-item measure developed to assess organizational citizenship behavior.	Leader positive and negative affect at work related to follower positive affect at work via emotional contagion.
Johnson (2009)	Quasi-experimental study	200 (80 M, 120 F) students (mean age = 23.84 years)	MLQ-5X Short, JAS.	Followers in positive mood condition had higher levels of positive mood and lower levels of negative mood, rated their leaders as more charismatic, and performed better than followers in a negative mood.
Liang & Chi (2013)	Cross-sectional field study of the Taiwan army	304 (228 M, 76 F) military subordinates and immediate supervisors (mean age = not reported)	MLQ-5X Short, JAS, ECS, 7-item measure of followers' task performance.	Follower positive emotions mediated the relationship between follower perceptions of transformational leadership and task performance. This mediated relationship was stronger when followers were higher in susceptibility to positive emotions than when followers were lower in susceptibility.
Madera & Smith (2009)	Quasi-experimental study	322 (161 M, 157 F, 4 unknown) employees from various organizations and occupations (mean age = 34 years)	4-item scale to measure perceived leader competence, 3-item scale to measure attributions of leader legitimacy, a Linguistic Inquiry and Word Count program to assess follower affect.	Follower affect was a mechanism by which the leader's emotion influenced the follower's evaluation of the leader. A leader expressing anger led to more follower negative affect compared to a leader expressing sadness and both anger and sadness.
Sacavém et al. (2017)	Laboratory experiment	112 (38 M, 74 F) students (mean age = 25.33 years)	PANAS, JAS, MLQ-5X, 5-item scale to measure perceptions of leader charisma.	Followers' positive affect mediated between leaders' nonverbal delivery styles (e.g., facial expressions, gestures, eye contact) and followers' performance.
Spoor & Kelly (2009)	Quasi-experimental study	118 (77 M, 41 F) students (mean age = 19.51 years)	Instrument designed to measure mood ratings, and another to assess leadership manipulation	After manipulating of dyads' moods, negative moods showed stronger convergence than positive moods. Contrary to predictions, leaders' mood showed more mood convergence than those of subordinates.

			effectiveness.	
Sy & Choi (2013)	Quasi-experimental study	367 (147 M, 220 F) undergraduate students (mean age = 21.45 years)	ECS, JAS, a measure of extroversion (8-items) and neuroticism attribute diversity (8-items), 3-item scale to measure interpersonal attraction.	Group mood contagion began with leaders as a source of mood contagion, followed by mutual mood contagion among members. Negative moods were more contagious than positive moods.
Sy et al. (2013)	Longitudinal experimental study	421 (gender not reported) students (mean age = not reported)	Affective Communication Test, charisma subscale of the MLQ, JAS, 4-item scale to measure group perceptions of leader effectiveness.	Leader expressivity fostered the transfer of positive and negative moods to group members. Group perceptions of leader charisma mediated the relationship between leader expressivity and positive group mood.
Sy et al. (2005)	Quasi-experimental study	189 (82 M, 107 F) students (mean age = not reported)	JAS, 9-item scale to measure observer-rated group effort, co-ordination and task strategy, a 7-point rating of group performance.	Leaders' moods were transferred to other group members. Individuals with leaders in a positive mood experienced more positive moods and less negative moods after interacting with the leader than did individuals with leaders in a negative mood.
Tee et al. (2013)	Laboratory experiment	288 (gender not reported) students (mean age = not reported)	PANAS, 4-item scale developed to measure followers' portrayed moods, 6-item measure developed to assess leaders' task effectiveness, 3-item scale to control for followers' and observers' familiarity with the leader.	Leaders experienced more positive mood when interacting with followers who were displaying positive moods, and experienced more negative mood when directing followers displaying negative mood. Leaders of positive mood followers were judged to have performed more expediently than leaders of followers who expressed negative mood states.
Tsai et al. (2009)	Longitudinal survey-based study	282 (97 M, 185 F) sales agents (mean age = not reported) and 156 (65 M, 91 F) leaders (mean age = 41.03 years)	Adapted MLQ-5X, 4 indicators to measure employee positive moods, 7-item scale to measure employee task performance, 4-item scale to measure helping	Transformational leadership (directly and) indirectly increased employee task performance and helping coworker behavior, through employee positive moods.

				co-worker behavior.
Van Kleef et al. (2009)	Laboratory experiment	140 (53 M, 87 F, 1 unknown) students (mean age = 21 years)	11-item scale to measure assessment of epistemic motivation, point based software task to measure performance, instruments developed to measure affective reactions, inferences regarding quality of performance, and leader emotional display.	The effectiveness of leader displays (anger vs happiness) depended on the team's motivation to consider the meaning and implications of its leader's emotions (epistemic motivation) in the context of task performance. In addition, leader emotional displays significantly predicted follower affective reactions, which in turn predicted team performance when epistemic motivation was low.
Visser et al. (2013)	Laboratory experiment	161 (110 M, 61 F) students (mean age = 20.04 years)	Instruments developed to measure leader affect, and leader happiness. Follower affect measured by combining process and outcome measures of emotional contagion.	Leaders' affective displays influenced both followers' performance and leadership effectiveness through follower affect.
Volmer (2012)	Quasi-experimental study	20 (15 M, 5 F) students (mean age = 24.05 years)	PANAS, UWIST Mood Adjective Checklist, 8-item scale to assess team members' potency, 8-item scale to measure goal commitment.	Team members with a leader in a positive mood experienced a more positive mood than team members with a leader in a negative mood. Leaders' mood affected team members' individual mood, group affective tone, team performance and potency.

Table 3. Data on effect sizes between leadership and leader affective phenomena (Theme 1).

Study	Measure of affective phenomena	Leader affective phenomena		
		NS	Positive	Negative
Becker et al. (2014)	Academic emotions questionnaire		(.29***)	(-.12***)
Bono & Ilies (2006)	PANAS	.13[b]		
Cheng et al. (2012)	ACT	(.41***)		
Chi et al. (2011)	PANAS		.14	
Damen et al. (2008b)	2-item measure	(.53**)	.14[b]	<.01
Erez et al. (2008)	PANAS	(.17[b])		
Johnson (2009)	JAS	(.32[b])		
Sacavém et al. (2017)	PANAS	.70		
Sy et al. (2013)	ACT	(.30[b])		
Average effect size		.42	.14	<.01

NS = not stated, [a] = no appropriate data presented, [b] = calculated by mini meta-analysis, correlations in parentheses when effect sizes not

reported, * = p<.05, ** = p<.01, *** = p<.001

Table 4. Data on effect sizes between leadership and follower affective phenomena (Theme 2)

Study	Measure of affective phenomena	Follower affective phenomena		
		NS	Positive	Negative
Becker et al. (2014)	Academic emotions questionnaire		.09	.01
Cheng et al. (2012)	ACT	(.17*)		
Ch`erulnik et al. (2001)[a]	Behavioral measure			
Chi et al. (2011)	PANAS		(.43**)	
Chi & Huang (2014)	PANAS		.26	.17
Damen et al. (2008b)	2-item measure	(.78**)	.14	
Erez et al. (2008)[a]	PANAS			
Johnson (2008)	JAS		.26	.32
Johnson (2009)	JAS		(.47[b])	(-.12[b])
Liang & Chi (2013)	JAS		.28	
Sy et al. (2013)	JAS		.10	.04
Tsai et al. (2009)	4-item measure		.19	
Average effect size		-	.19***	.27

NS = not stated, [a] = no appropriate data presented, [b] = calculated by mini meta-analysis, correlations in parentheses when effect sizes not

reported, * = p<.05, ** = p<.01, *** = p<.001

Table 5. Data on effect sizes between leader affective phenomena and follower affective phenomena (Theme 3).

			Valence of contagion effects			
			Leader			
			Positive		Negative	
			Follower			
Study	Measure of affective phenomena	NS	Positive	Negative	Positive	Negative
Asadullah et al. (2016)	ECS, Dispositional Positive Emotion Scale	.34				
Becker et al. (2014)	Academic Emotions Questionnaire		.07	(-.17***)	(-.08*)	.01
Bono & Ilies (2006)	PANAS		.04^b***			
Chi et al. (2011)	PANAS		.11			
Damen et al. (2008b)	Single-item measure of leader affect, 2-item measure of transfer of positive feelings		.28		.02^b	
Eberly & Fong (2013)[a]						
Erez et al. (2008)	PANAS, video ratings of leader positive expressions		.01^b			
Johnson (2009)	JAS	.21	.10		(-.07^b)	
Madera & Smith (2009)	Linguistic Inquiry and Word Count program	.03				.03^b*

Study	Measure					
Sacavém et al. (2017)	JAS, PANAS		.47			.19
Spoor & Kelly (2009)[a]						
Sy & Choi (2013)[a]						
Sy et al. (2013)	ACT, JAS		.05			.02
Sy et al. (2005)	JAS		(-.60[b])			(.45[b]*)
Tee et al. (2013)	PANAS		(.52[b]***)	(-.27[b]**)	(-.35[b]*)	(.20[b])
Van Kleef et al. (2009)	12-item measure of affective reactions	.72				
Volmer (2012)	PANAS, UWIST mood adjective checklist	.21				
Average effect size		.30	.28*	-	.02	.13

NS = not stated, [a] = no appropriate data presented, [b] = calculated by mini meta-analysis, correlations in parentheses when effect sizes not reported, * = p<.05, ** = p<.01, *** = p<.001

Table 6. Data on effect sizes between affective phenomena and leader effectiveness (Theme 4).

Study	Measure of affective phenomena	Valence of effects					
		Leader			Follower		
		NS	Positive affect	Negative affect	NS	Positive affect	Negative affect
Asadullah et al. (2016)	ECS, Dispositional Positive Emotion Scale	.20			(.74**)		
Bono & Ilies (2006)	PANAS		.10		.10^{b}**		
Eberly & Fong (2013)	PANAS-X	(.16***)					
Madera & Smith (2009)	Linguistic Inquiry and Word Count program			.02^{b}*			
Sy et al. (2013)	ACT, JAS	.02					
Tee et al. (2013)	PANAS		(.60^{b}***)	(-.24^{b})	(.45^{b}**)	(.39^{b})	(-.39^{b})
Visser et al. (2013)	Developed measure	.40^{b}					
Average effect size		.21	.10	.02	.10	-	-

NS = not stated, ^{a} = no appropriate data presented, ^{b} = calculated by mini meta-analysis, correlations in parentheses when effect sizes not reported, * = p<.05, ** = p<.01, *** = p<.001

Table 7. Data on effect sizes between affective phenomena and performance (Theme 5).

Study	Measure of affective phenomena	Leader			Follower			Group affective tone	
		NS	Positive affect	Negative affect	NS	Positive affect	Negative affect	Positive	Negative
Chi et al. (2011)	PANAS		.10					(.34[b]***)	
Chi & Huang (2014)	PANAS							.34	.36
Damen et al. (2008)[a]	PANAS								
Johnson (2009)	JAS	.37				(-.03[b])	.25		
Liang & Chi (2013)	JAS, ECS					(.58**)			
Sacavém et al. (2017)	JAS, PANAS	.11							
Tsai et al. (2009)	4-item measure					.06			
Van Kleef et al. (2009)	12-item measure of affective reactions		.01			.15			
Visser et al. (2013)	Developed measure	.02							
Volmer (2012)	PANAS, UWIST Mood adjective checklist	.26			.03				
Average effect size		.19	.06	-	.03	.11	.25	.34	.36

NS = not stated, [a] = no appropriate data presented, [b] = calculated by mini meta-analysis, correlations in parentheses when effect sizes not reported, * = p<.05, ** = p<.01, *** = p<.001

Table 8. Data on effect sizes between susceptibility to contagion of affective phenomena and either leadership or affective phenomena (Theme 6).

Study	Measure of affective phenomena	Leadership		Follower affective phenomena	
		Charismatic	Transformational	Positive	Negative
Cheng et al. (2012)	ACT		(.17*)		
Johnson (2008)	JAS	.28		.71	.43
Liang & Chi (2013)	JAS, ECS		(.31**)	(.38*)	
Sy & Choi (2013)	ECS			(.21[b]*)	(-.25[b]*)
Average effect size		.28	-	.71	.43

NS = not stated, [a] = no appropriate data presented, [b] = calculated by mini meta-analysis, correlations in parentheses when effect sizes not reported, * = p<.05, ** = p<.01, *** = p<.001