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Emotional contagion in organizational life☆

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ABSTRACT

Leveraging the wealth of research insights generated over the past 25 years, we develop a model of emotional contagion in organizational life. We begin by defining emotional contagion, reviewing ways to assess this phenomenon, and discussing individual differences that influence susceptibility to emotional contagion. We then explore the key role of emotional contagion in organizational life across a wide range of domains, including (1) team processes and outcomes, (2) leadership, (3) employee work attitudes, (4) decision-making, and (5) customer attitudes. Across each of these domains, we present a body of organizational behavior research that finds evidence of the influence of emotional contagion on a variety of attitudinal, cognitive, and behavioral/performance outcomes as well as identify the key boundary conditions of the emotional contagion phenomenon. To support future scholarship in this domain, we identify several new frontiers of emotional contagion research, including the need to better understand the "tipping point" of positive versus negative emotional contagion, the phenomenon of counter-contagion, and the influence of computer mediated communication and technology within organizations and society on emotional contagion. In closing, we summarize our model of emotional contagion in organizations, which we hope can serve as a catalyst for future research on this important phenomenon and its myriad effects on organizational life.

Contents

Emotional contagion, defined as the transfer of moods or emotions from one person to another, has long captured the imagination and interest of scholars. Scholarly interest in emotional contagion dates back to Le Bon's (1896) study of sentiments in crowds, and psychologist William McDougall's (1920, p. 25) more formal definition in his book *The Group Mind*:

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" . . . the principle of direct induction of emotion by way of the primitive sympathetic response." Emotional contagion is important to our understanding of organizational behavior because it may be a key explanatory mechanism of how collective emotion forms through both conscious and unconscious emotional social influence. "Collective" in this case encompasses dyads, groups, organizations, and even societies. Given that "organizing" by definition occurs in all of these social structures, and in light of the rich literature showing that affect has a significant influence on organizational processes and outcomes, understanding emotional contagion can help organizational behavior scholars better comprehend why and how dyadic, group, and organizational collectives feel, behave, and think as they do.

Because much of the basic research about emotional contagion has come from the field of psychology, we begin by briefly explaining the nature of the emotional contagion construct, how it is distinguished from other constructs, how it is measured, and how the susceptibility to emotional contagion may vary depending on individuals' dispositions and the characteristics of the receivers. We then examine the influence of emotional contagion in a variety of domains of organizational life, including team processes and outcomes, leadership, employee work and customer attitudes, and decision-making. We also discuss future research domains such as the "tipping point" of positive versus negative emotional contagion, the phenomenon of counter-contagion, and the influence of computer-mediated communication and technology on emotional contagion.

Defining emotional contagion

The sharing of emotions, or emotional contagion, is a pervasive phenomenon of widespread importance in the psychological and organizational behavior literatures. It has been best defined as "a process in which a person or group influences the emotions or behavior of another person or group through the conscious or unconscious induction of emotion states and behavioral attitudes" (Schoenewolf, 1990, p. 50). Deconstructing this definition, we posit four distinct elements of emotional contagion: (1) it is comprised of discrete emotions and generalized mood; (2) it occurs via subconscious and conscious processes that transpire when people are both elicitors and targets of emotional contagion; (3) it can take place within dyads, small groups, organizations, and larger societal collectives, and be induced by one or more people; and (4) it represents a type of social influence that influences not only how people feel, but also what they subsequently think and do.

There is compelling evidence of each dimension of emotional contagion. First, emotions form the content of emotional contagion. For semantic purposes, and to match the research conducted on the subject, we consider the word "emotion" to be equivalent to the word "affect" — an umbrella term that encompasses all aspects of subjective feelings (Ashforth & Humphrey, 1993; Barsade & Gibson, 2007). However, we preserve our ability to differentiate between the three most basic types of affective experiences: moods, emotions, and dispositional affect. Emotions are intense, relatively short-term affective reactions to a specific stimulus from the environment (Reber & Reber, 2001). Weaker in intensity than emotions, moods are more diffuse affective reactions to general stimuli in the environment that can easily change (Watson & Tellegen, 1985). Both moods and emotions can serve as content for the emotional contagion process[1]. Indeed there have been studies of the contagion of generalized moods (Hsee, Hatfield, & Chemtob, 1992), as well as that of discrete emotions such as anger (Cheshin, Rafaeli, & Bos, 2011; Fan et al., 2014; Kelly et al., 2016; Mondillon et al., 2007), anxiety (Parkinson & Simons, 2012), loneliness (Cacioppo, Fowler, & Christakis, 2009), fear (Bhullar, 2012a,b), joy (Fan et al., 2014) love (Bhullar, 2012a,b), and all four quadrants of the affective circumplex (Barsade, 2002).

Second, emotional contagion is a process that can occur at the automatic/subconscious level, as is largely the case for "primitive emotional contagion" (Hatfield, Cacioppo, & Rapson, 1993), and as a product of conscious emotional comparison or appraisal processes, in which people are aware of their moods and actively compare them to those of the people around them (Adelmann & Zajonc, 1989; Kelly & Barsade, 2001; Sullins, 1991). With regard to "primitive emotional contagion," there is copious evidence showing that the first part of this process consists of automatic, subconscious mimicry and synchrony of facial expressions, postures, vocalizations, and movement within dyads and groups (for a review, see Hatfield et al., 2014). Such evidence includes interesting research about how Botox injections block participants' ability to identify others' facial expressions because of their inability to move their own faces (Davis et al., 2010). The second part of this process involves how facial and behavioral mimicry lead to physiological feedback processes. This is mainly thought to occur due to first mimicking the facial expressions of other people (Duffy & Chartrand, 2015), and then experiencing facial efference, a physiological feedback process in which people receive temperature feedback from their facial muscles that influences their mood (e.g. Adelmann & Zajonc, 1989) (e.g., we first mimic a smiling face, and then feel happy because we are smiling). In addition, mirror neuron systems[2] (e.g. Nummenmaa et al., 2008; Shamay-Tsoory, 2011) and the newly suggested neurocognitive model of mimicry (Prochazkova & Kret, 2017) have recently started to receive more scholarly attention as alternative physiological feedback processes. One of the most important and intriguing parts of emotional contagion occurring at the automatic and subconscious level is that recipients of emotional contagion report not recognizing that this emotional social influence is occurring, or that it is subsequently influencing their emotions and behaviors (Barsade, 1994; Dimberg & Thunberg, 1998; Dimberg et al., 2000; Neumann & Strack, 2000; Wild, Erb & Bartels, 2001).

Researchers have also established that emotional contagion can occur at more conscious levels, including emotional social comparison processes in which people compare their moods to others and respond with what seems appropriate in the setting (Adelmann & Zajonc, 1989; Barsade, 2002; Schachter, 1959; Sullins, 1991). Additionally, people can intentionally influence others with their own moods, engage in "affective impression management," and pay differential attention to the moods of in-group versus out-group members (for a review see Kelly & Barsade, 2001). For example, in his field study of professional sports players, Totterdell (2000) found that the mood linkage between individuals and their teammates was positive if the activity depended on a coordinated team effort, but negative if the activity was based on individual efforts. The team members perceived a teammate's happy mood as a sign of support when pursuing shared goals but threatening when pursuing individual goals. There has been some inquiry into the relative strength of the automatic and conscious processes that explain emotional contagion, and in a direct field test of this question, Parkinson and Simons (2012) found evidence that both processes occur.

Third, researchers have established that emotional contagion can occur in both dyads and groups, and it can be induced by one or more people. Earlier research focused mainly on examining contagion processes in dyads (e.g. Hatfield, Cacioppo, & Rapson,

[1] As a long-term, stable variable, a person's dispositional affect (Watson, Clark, and Tellegen, 1988) could influence the induction of emotional contagion processes but would not be as susceptible to change by the emotional contagion of others.

[2] Although this is somewhat controversial as the nature of this system in human functioning is not yet clearly determined (see Niedenthal, 2007).

1993, 1994; Hsee et al., 1990; Sullins, 1991). For example, emotional contagion was examined in therapist-patient dyads (Donner & Schonfield, 1975), dyads of college students in a laboratory setting (Hsee et al.,1990), and dyads of romantic partners and college roommates (Anderson, Keltner & John, 2003). Emotional contagion was also found to occur in groups. In a field study of teams of nurses and accountants, Totterdell et al. (1998) found that emotional contagion occurred, even after controlling for shared work problems. In the first causal test of emotional contagion in groups, Barsade (2002) found robust evidence that emotional contagion occurred in groups engaged in a managerial negotiation exercise. Using the measures of outside video-coders' ratings, ratings of other members of the group, and participants' self-reported mood (all of which converged), Barsade (2002) uncovered that group emotional contagion influences key group attitudinal and behavioral outcomes, such as the degree of cooperation and conflict among group members. Recent social network research has examined contagion in even larger collectives, including the emotional contagion of depression (Fowler & Christakis, 2008) and loneliness (Cacioppo et al., 2009) in communities of friends and families, and the contagion of positive and negative emotions through social media (Kramer, Guillory & Hancock, 2014).

Emotional contagion can occur in both dyads and groups and can be induced by one or more people. For example, individual leaders not only cause emotional contagion in their followers, but also depend on emotional contagion as a critical part of transformational and charismatic leadership (Cheng et al., 2012; Cherulnik, et al., 2001; Erez et al., 2008). Sy et al. (2005) found evidence that leaders can induce a mood state in their followers by transmitting their positive moods. Johnson (2009) found a causal link between leaders' positive mood, followers' perceptions of the leader's charisma, and the contagion of positive emotions between leaders and followers. Supporting the notion that contagion can also be transmitted by groups of people, Hareli and Rafaeli (2008) found that group members can spread a mood among themselves, a process that scholars have termed as "affective spiral." Similarly, Bartel and Saavedra (2000) detailed how mood convergence occurred within groups of people working in a setting with high task interdependence.

Last, emotional contagion is a type of social influence (Barsade, 2002; Elfenbein, 2014; Levy & Nail, 1993), in which "A has power over B to the extent that he can get B to do something that B would otherwise not do" (Dahl, 1957, pp. 202–203). While this definition focuses on behavioral influence, in the case of emotional contagion, the influence is affective: A has power over B to the extent that s/he can get B to feel something B would otherwise not feel. In her affective process theory model, Elfenbein (2014) theorizes that emotional contagion is a type of influence. Individuals are able to change others' emotions through ten distinct mechanisms, falling into three main categories of affective linkages: convergent linkage, divergent linkage, and complementary linkage. Whether a certain type of linkage between individuals will occur depends on their vantage points. By explicitly describing ten different micro-processes involved in emotional contagion and highlighting the moderating role of one's vantage point, Elfenbein's model contributes to a more thorough understanding of how individuals can influence the affective states of others via the process of emotional contagion.

It is useful to compare emotional contagion as a form of influence relative to cognitive contagion, or the contagion of attitudes or ideas. In cognitive contagion, verbal exchange is central to the way in which people influence each other's cognitions and attitudes, as discussed in social information processing theory (Salancik & Pfeffer, 1978). However, in emotional contagion, nonverbal affective cues are more important for transferring emotions (Chartrand & Lakin, 2013; Mehrabian & Epstein, 1972). Also, while the cognitive contagion of ideas tends to be explicit and conscious, as we noted in point two above regarding intentionality, recipients are often not conscious of emotional contagion happening and it is based primarily on physiological and automatic responses (e.g., Hatfield et al., 1993; Neumann & Strack, 2000).

However, similar to cognitive social influence, emotional contagion influences not only the emotions of the recipients of the contagion, but also their subsequent attitudes and behaviors. As tested by Barsade (2002), emotional contagion can influence subsequent attitudes, cognitions, and behaviors in two ways. First, it is a method for infusing individuals and groups with moods and emotions, both of which have strongly and reliably been found to influence subsequent cognitions and behaviors, including in organizational contexts (for reviews, see Barsade & Gibson, 2007; Barsade & Knight, 2015; Elfenbein, 2007). Second, the affective information that is transferred to the group through emotional contagion ("we are in a great mood" or "we are in a terrible mood") can offer information that helps the group determine how it is doing (Hess et al., 2000; Knight, 2013), which can then influence attitudinal, cognitive, and behavioral outcomes. As just a few examples which we will elaborate upon later in this article, Barsade (2002) found that positive emotional contagion led to greater group-level cooperativeness, less group-level conflict, and greater perceived individual-level performance (both by oneself and others) than did negative emotional contagion. Other scholars have also found that emotional contagion can influence attitudinal and behavioral outcomes. For example, Sy et al. (2005) found that leaders who transmit their positive moods to their followers can positively impact group coordination, while leaders who transmit their negative moods to their followers can positively impact the expenditure of group effort. Additionally, in a field study of employee-customer encounters in the context of food/coffee services, Barger and Grandey (2006) found that emotional contagion through employee smiling influenced customers' appraisals of service quality.

Measuring emotional contagion

Scholars have used various methods to assess emotional contagion, including experimentally manipulating emotional contagion; examining naturally occurring emotional contagion processes; using physiological ratings; applying neuroscience techniques; and developing computer simulations of emotional contagion processes to reproduce and predict patterns of human behavior. The measures that capture naturally occurring emotional contagion include: (1) self-reported dispositional susceptibility to emotional contagion; (2) self-reported moods and emotions at the time contagion is occurring; (3) outside coder ratings of affect by either trained coders or other people in the group, including general ratings and more specific behavioral measures of affect, such as smiling intensity; (4) computer coding of emotions, and (4) nascent research involving physiological, neuroscientific, and computer simulation measures of emotional contagion.

Early on, researchers used a scale of self-reported susceptibility to emotional contagion, people's self-reported general tendency to "catch" the emotions of others, as the primary measure of emotional contagion. It was very successful in predicting a variety of organizationally relevant outcomes, such as attitudes about the organization (Miller, Stiff & Ellis, 1988; Omdahl & O'Donnell, 1999), job performance and attitudes towards customers (Verbeke, 1997), burnout among healthcare providers (LeBlanc, Bakker, Peeters, VanHeesch & Schaufeli, 2001), and differences in the level of emotional contagion among different occupations (Doherty et al., 1995). Such measures are now examined less as operationalizations of emotional contagion and rather as individual difference

moderators to explain why some people may be more susceptible to emotional contagion than others in the same situation.

A more common emotional contagion methodological paradigm is measuring self-reported mood at Time 1 and Time 2 with an experimental induction of emotion in between (e.g., Barsade, 2002; Sy et al., 2005). For example, in a study of 189 undergraduates who formed 56 groups, Sy et al. (2005) evaluated the baseline mood of each group member at Time 1; the mood of group leaders, who received either positive or negative mood manipulation when they joined their respective groups; and the mood of each group member following completion of the experimental tasks.

Another way to measure emotional contagion is to use outside coders (either researcher-trained coders or other members of the group) to code participants' facial expressions, body language, and verbal tone. This method has been shown to be an effective and reliable way to read emotions between members within a group. Multiple empirical studies have concluded that video coders are able to accurately judge facial expression and non-verbal behavior (e.g., Ekman & Friesen, 1975; Gump & Kulik, 1997), overall group mood (e.g., Bartel & Saavedra, 2000), and emotional contagion processes (Barsade, 2002).

The development of automated facial coding software offers the hope of further improving researchers' ability to video-code emotions (Valstar et al., 2012), particularly in situations where emotional contagion needs to be coded in very small units of time, such as seconds or micro-seconds. In one recent study intended to evaluate the validity and reliability of automated facial coding software, Lewinski, den Uyl, & Butler (2014) compared the accuracy of manual facial coding and coding using Face-Reader, a common automated facial coding software, across two tested databases. After finding a person's face and creating a three-dimensional image representation of it, Face-Reader classifies people's emotions into discrete categories of basic emotions (Ekman & Cordaro, 2011). Lewinski, den Uyl, & Butler (2014) found that Face-Reader's accuracy for detecting basic emotions was the same as the participants' judgments of the two tested databases. A potential limitation of this study is that the performance of Face-Reader may have been increased due to the use of frontal, close-up, posed photographs of superior quality, which are not normally available in studies of spontaneous facial expressions (Lewinski, den Uyl, & Butler, 2014). Despite this limitation, various types of automated facial coding show promise in emotional contagion research. While automatic facial coding software needs to continue improving in terms of accuracy, particularly in dynamic situations, it offers the potential to analyze large samples in a complementary way to manual facial coding techniques.

Very recently, scholars have begun to use physiological measures such as galvanic skin conductance, heart rate, and linkages between autonomic nervous system responses as ways to measure emotional contagion. For example, by obtaining real-time metrics of parasympathetic activation, West et al. (2017) were able to isolate the impact of one partner's physiological arousal (an indicator of anxiety) on the other partner. This methodology offers a promising next step for researchers interested in measuring anxiety contagion. Similarly, Knight and Barsade (2013) used measures of galvanic skin response to examine the contagion of energy among teams in an entrepreneurial competition. Changes in prefrontal electroencephalographic (EEG) asymmetry as an indicator of anxiety contagion have also been examined (Papousek, Freudenthaler, & Schulter, 2011).

While each of the self-report, physiological, and behavioral measures has been recognized independently as a valid measure of emotional contagion, using these measures together in a single study offers greater reliability. For example, Barsade (2002) found that video-coded, self-reported, and group-member-reported contagion yielded similar results, a very helpful finding for organizational behavior field settings in which self-reporting may be the only viable measurement option. In addition, West et al. (2017) found concurrence between several metrics of physiological arousal and self-reports of discomfort when measuring contagion.

Unlike the self-report, physiological, and behavioral measures that assess the emotional contagion processes occurring with real people in groups, some interesting recent work using computational models has attempted to predict patterns of human behavior by simulating emotional contagion processes in groups. For example, Tsai et al. (2011) compared the predictive validity of the two most prevalent computational contagion models, the ASCRIBE and Durupinar models. The ASCRIBE model draws upon heat dissipation models from the field of physics, and it has been used to simulate emotional contagion in crowds (Bosse et al., 2015). Like heat dissipation models, each material in the model has a specific heat capacity, which can represent an individual's susceptibility to emotional contagion (Tsai et al., 2011). The Durupinar model draws inspiration from a long line of contagion models used to model the spread of diseases (Dodds & Watts, 2005), the diffusion of innovations (Rogers, 2010), and social contagion (Schelling, 1973). The Durupinar is a probabilistic threshold model wherein successive interactions with emotionally "infected" individuals increase the chance of adopting that emotion (Tsai et al., 2011). While empirically evaluating these two computational emotional contagion models, Tsai et al. (2011) found that the physics-based ASCRIBE model had statistically significant stronger performance in the simulated test than the infection-based Durupinar model. They posited that this result was due to the greater accuracy of the heat dissipation-style mechanism compared to the Durupinar model's underlying probabilistic mechanism of emotional contagion (Tsai et al., 2011). Neither of these models has yet been applied to predict emotional contagion among real people.

Individual differences influencing susceptibility to emotional contagion

While emotional contagion is a result of being in contact with or observing another's emotions, not all emotional contagion inductions will lead to equal amounts of contagion. Key moderators of the emotional contagion phenomenon include individual differences in people's attention, perceptions of interdependence, and dispositional susceptibility to emotional contagion. Hatfield et al.'s (1993, 1994) theory of emotional contagion was the first to hypothesize that individuals with certain traits would be more susceptible to emotional contagion. Specifically, they theorized a variety of factors that would make some individuals more susceptible to emotional contagion, including (a) attentiveness to others and an ability to read others' emotional expressions, (b) perception of oneself as interdependent on others as opposed to independent and unique, (c) frequent mimicry of others' facial, vocal, and postural expressions, and (d) a conscious emotional experience that is strongly influenced by social cues and feedback.

Drawing upon Hatfield et al.'s theory, Doherty (1997) created a Susceptibility to Emotional Contagion Scale, which was the first to directly measure the stable dispositional degree to which people are prone to emotional contagion. An underlying assumption of the Susceptibility to Emotional Contagion Scale is that individuals differ in susceptibility not only to moods more broadly, but also to basic emotions, such as happiness, love, fear, anger, and sadness (Fischer et al., 1990). Doherty's Susceptibility to Emotional Contagion Scale was the first successful attempt to construct a reliable and valid measure of an individual's trait susceptibility to emotional contagion. It has been found to be positively associated with affective orientation (one's predisposition to use emotions as

guiding information), emotionality, sensitivity to others, self-esteem, and emotional modes of empathy (Doherty, 1997).

A number of scholars have used the Susceptibility to Emotional Contagion Scale as a moderator to evaluate the differential effects of emotional contagion. For example, in a field study of professional sports players, Totterdell (2000) found that susceptibility to emotional contagion moderated the contagion of happy moods of professional cricket players and the ongoing collective happy mood of their teammates during a competitive match, with greater susceptibility to emotional contagion leading to stronger contagion. Additionally, Manera et al. (2013) found that susceptibility to negative emotional contagion, as measured by Doherty's scale, improved individuals' ability to distinguish between real and fake smiles, whereas susceptibility to positive emotions worsened this ability. The scale has also been used to measure susceptibility to emotional contagion as a moderator of the relationship between emotionally negative families and abnormal eating behavior (Weisbuch et al., 2011).

Other individual differences have been shown to influence the amount of emotional contagion people experience in response to an affective stimulus. For example, in addition to team members' susceptibility to emotional contagion, Ilies, Wagner, and Morgeson (2007) studied affect convergence, finding that team members' collectivistic-individualistic tendencies influenced the contagion process. Specifically, they found that team members who were more susceptible to emotional contagion felt stronger affective linkages to other team members, as did the team members with more collectivistic tendencies, who perceived themselves to be interrelated with other team members. The importance of the perception of interrelatedness on the strength of emotional contagion was also shown by Totterdell (2000), who found that commitment to the team moderated emotional contagion processes.

With regard to other personality variables, Barsade (1994) found that people with higher trait positive affect were more susceptible to positive emotional contagion than negative emotional contagion, and that people higher in trait negative affect were more susceptible to negative as compared to positive emotional contagion. Barsade (1994) also found that people higher in the trait of self-monitoring were more greatly influenced by both positive and negative emotional contagion.

Demographic variables have also been shown to influence emotional contagion. For example, in the study described above, Totterdell (2000) found that older players were more prone to emotional contagion. In other studies, gender has been shown to have an influence. In a study of 290 male and 253 female students, Doherty et al. (1995) found that women were more susceptible to emotional contagion than men based on each group's Susceptibility to Emotional Contagion Scale scores. Similarly, Sonnby-Borgström et al. (2008) found that women's verbally reported ratings of emotional contagion (as measured by the degree of pleasantness they felt) were more consistent with their facial responses to stimuli than men. Other scholars, however, have found no gender differences in terms of susceptibility to emotional contagion (for a review, see Hatfield et al., 1994). Emergent research suggests that ingroup-outgroup differences based on ethnicity can also play a role in emotional contagion. Specifically, African-American individuals have been shown to be more influenced by European-American interaction partners' anxiety, and this effect was amplified when African-Americans believed that they were more likely to be rejected because of their race (West et al., 2017).

The role of emotional contagion in organizations

Psychology and organizational behavior literatures aiming to understand the influence of emotional contagion on life outcomes have largely grown in parallel. However, organizational theorists have focused more strongly on group contagion and prediction of organizational outcomes, or organizational-related outcomes, such as group decision processes and leadership. Thus, over the course of the last 25 years, organizational theorists have increasingly reported the influence of emotional contagion on a variety of organizational phenomena, including team dynamics, leadership, employee and customer attitudes and satisfaction, and decision-making. Importantly, the "affective revolution" in organizational behavior (Barsade, Spataro & Brief, 2003) has led to a significant amount of research examining the influence of affect on all aspects of organizational life (for reviews, see Barsade & Gibson, 2007; Elfenbein, 2007; Staw, Sutton & Pelled, 1994). Emotional contagion, by definition, influences this affect, which then has an influence on individual, group, and organizational outcomes. However, studies that have tested the occurrence of emotional contagion processes specifically, have also shown that emotional contagion influences attitudinal, cognitive, and behavioral or performance outcomes directly in its own right. As such, in the section below discussing emotional contagion, we describe studies that establish the existence of emotional contagion across a variety of organizational domains, as well as studies that take this examination one step further, and show how emotional contagion in that setting influences a variety of attitudinal, cognitive, and behavioral/performance outcomes.

Emotional contagion in team processes and outcomes

Given the criticality of emotional contagion to the very existence of team affect, we explore the influence of emotional contagion in the domain of work teams. This domain is particularly important organizationally, as work teams are an important structure through which strategy translates into action, ideas become projects, and plans lead to results (Ancona, Bresman, & Caldwell, 2009). When considering how work teams operate, researchers have posited that the process of emotional contagion is the mechanism through which group emotion is created (Barsade & Knight, 2015; Barsade, Ramarajan, & Westin, 2009; Kelly & Barsade, 2001; Totterdell, 2000; Totterdell et al., 1998). There is ample research indicating that emotional contagion occurs in groups, and leads to affective convergence among group members (e.g., Barsade, 2002; Ilies et al., 2007; Totterdell et al., 1998; for reviews, see Barsade & Gibson, 2007; and Barsade & Knight, 2015; Kelly & Barsade, 2001). In addition to shedding light on how group emotion is created, there is evidence that emotional contagion has a powerful impact on group dynamics through its influence on individual emotions and the affective convergence of the group toward particular emotions. We discuss both aspects below.

Affective convergence in groups via emotional contagion was first examined by Totterdell et al. (1998), who found that the collective mood of a work team could influence the individual moods of work team members. By evaluating mood linkage in work groups for two different occupations, community nursing and accounting, Totterdell et al. found evidence that a significant concurrent association existed between people's mood and the collective mood of fellow members of their work teams over time. This association was present even after controlling for shared hassles at work and despite the fact that team members spend only about one-fifth of their working day with their teammates. Interestingly, this examination of community nurses also showed that the magnitude of the association between the moods of individual nurses and the collective mood of their teams was greater if the nurses were older, more committed to their team, perceived a better team climate, or experienced fewer hassles with their fellow teammates. They posited that nurses who shared these characteristics were likely better adjusted to their teams and were,

thus, the type of team members who pay attention to other members and whose attitudes and behaviors are influenced by the team's mood.

Later studies cemented the view that emotional contagion is the mechanism driving mood convergence in work teams. In a study of 70 work teams performing diverse tasks, Bartel and Saavedra (2000) found results similar to those of Totterdell et al. (1998). They found that there was mood convergence in these very diverse teams and that individual members of teams and external observers of the teams could effectively observe and measure mood convergence in work teams. They also reported a number of moderators of the mood convergence phenomenon, including group membership stability, group mood-regulation norms, and task and social interdependence. In a field study of two professional cricket teams, Totterdell (2000) found that players' moods, measured multiple times at breaks in game play, were related to each other and that there was a significant correlation between a player's own happiness and the average happiness of the player's teammates during a game, even after controlling for the characteristics of the match and hassles of the game. The fact that Totterdell (2000) controlled for actual performance, that is, whether the team was winning or losing at that point in the game, indicates that contagion can be independent of individual shared appraisals of team performance. Ilies et al., (2007) found similar results when they studied 43 teams of undergraduate business students enrolled in an experiential course meant to simulate how teams operate in organizations. In this study they found that emotional contagion was not simply a group response to a performance stimulus, but varied depending on the positive and negative affective linkages between individual team members.

In the earliest causal examination of emotional contagion in teams, Barsade (2002) established the existence of emotional contagion in a laboratory study of managerial decision-making. After exposing participants in a group negotiation to a trained confederate expressing one of four different affective conditions based on the affective circumplex (high trait positive affectivity, low trait positive affectivity, high trait negative affectivity, low trait negative affectivity), Barsade (2002) found evidence of a causal link between the confederate's and the group members' emotions, as determined by unobtrusive video-coded measures, participant self-reports of their own moods, and other group members ratings of each other over two points in time – all of which converged. In addition, Barsade (1994) found that similarity in the trait positive and negative affectivity of the participants and the confederate and self-monitoring moderated the degree of emotional contagion.

Notably, when examining the body of research about how emotional contagion operates in team settings, it is striking to see the importance of moderators in understanding the degree to which emotional contagion will occur. In addition to the individual differences in susceptibility to emotional contagion and the other personality variables described earlier, there are many other moderators, including group membership stability, group mood-regulation norms, group conflict, group climate, and task and social interdependence, that influence the strength of emotional contagion in the group. A better understanding of these moderating factors is important for achieving more specific predictions of when and how emotion contagion will occur in work teams.

In addition to establishing the existence of mood convergence via emotional contagion, a few researchers have explored the influence of emotional contagion on relevant individual and team outcomes. In Totterdell's (2000) study of professional cricketers referenced above, he showed that the link between the moods of individual players and the ongoing collective happy mood of the teams had a positive impact on the self-rated subjective performance of individual players. Specifically, he found that, when the overall happiness of the entire team was greater, individual cricketers also became happier and rated their own performance more highly. Additionally, Barsade's (2002) managerial laboratory study discussed above showed that positive emotional contagion among the groups led to decreased group conflict and improved group cooperation. This was measured both attitudinally and behaviorally based on the degree to which money was evenly allocated among the group members. Positive emotional contagion also led to increased task performance, as perceived by the individuals themselves and others. Negative emotional contagion led to the opposite effects. Together, these studies provide evidence that emotional contagion not only impacts group members' moods, but also influences subsequent group dynamics and performance among team members, at both the individual and group level. Still, more team studies to examine the individual- and group- level outcomes of emotional contagion and mood convergence are necessary to gain a more complete understanding of these relationships.

Emotional contagion and leadership

The processes by which leaders capture the hearts and minds of their followers have long captivated organizational scholars (Meindl, Ehrlich, & Dukerich, 1985). Successful leaders are often believed to have intangible factors that inspire their followers (Meindl et al., 1985), which scholars have referred to as charismatic (Shamir, House, & Arthur, 1993) or transformational (Bass & Riggio, 2006) leadership. In the past decade, a growing body of research has highlighted emotional contagion as one of the critical mechanisms by which leaders influence their constituents (Sy & Choi, 2013). Taken together, this body of work illuminates how and when leader's emotions are transmitted to their followers, and the profound impact that the emotional contagion process has on perceptions of charismatic leadership and work-related outcomes.

Sy, Côté, and Saavedra (2005) were among the first researchers to empirically demonstrate that leaders do, in fact, transfer emotions to their followers and that this emotional contagion impacts processes related to group performance, such as coordination and effort. They found that when leaders were in a positive (versus negative) mood, individual group members experienced more positive emotions. This transfer of emotions led groups to have a more positive affective tone, and these groups exhibited more coordination and expended less effort than did groups with leaders in a negative mood (Sy et al., 2005). Related to this work, Bono and Ilies (2006) explicitly linked positive mood contagion from leaders to followers to perceptions of charismatic leadership. Across a series of studies, the authors found that perceptions of charismatic leadership are related to leaders' positive emotional expressions, which in turn are linked to a positive mood among followers and high ratings of leader effectiveness. A study by Johnson (2009) provides direct experimental evidence of the causal link between leaders' positive mood, followers' perceptions of the leader's charisma, and the contagion of positive emotion between leaders and followers. Importantly, this work underscores how this transfer of emotion improved the quality of follower performance. Taken together, this body of research suggests that positive emotional contagion is a key explanatory factor underlying leadership effectiveness that can translate into greater follower effectiveness.

As in the case of emotional contagion and team outcomes, recent research has uncovered moderating factors that determine whether emotions will indeed be transferred by leaders to their followers, as well as the impact this process has on individual and group outcomes. Two critical individual-level factors that have been highlighted are (a) leaders' ability to transfer emotions to others, and (b) followers' susceptibility to emotional contagion. In a field study of soldiers in the Taiwanese army, Cheng, Yen, and

Chen (2012) found a three-way interaction between these factors that significantly influenced follower outcomes. For leaders with a stronger ability to elicit emotional contagion by expressing and influencing others' emotions, there was a stronger positive relationship between transformational leadership and the job involvement of subordinates with higher (versus lower) susceptibility to emotional contagion. For leaders with a weaker ability to elicit emotional contagion, there was no interaction effect. Similarly, in a field study of principals and teachers, Johnson (2008) found that followers' susceptibility to emotional contagion amplified the positive mood transfer between leaders and followers, which in turn had a positive impact on followers' tendency to engage in organizational citizenship behaviors.

In addition to individual-level factors, dyadic and group-level factors can influence the extent to which leaders transfer their emotions to followers. In their two-stage leader activation and member propagation (LAMP) model of mood convergence in groups, Sy and Choi (2013) proposed that the first step of emotional contagion occurs from a leader directly to followers, and that this emotional contagion will be stronger for those who have greater similarity in personality attributes (namely, extroversion and neuroticism[3]). In the second step, which occurs once the contagion has been activated by the leader, group members spread the mood among themselves, which in theory can lead the emotional contagion to exponentially gain force due to affective spirals (Hareli & Rafaeli, 2008). In both steps, the degree of group members' attraction to the leader and to each other, as well as group members' individual levels of emotional contagion susceptibility are predicted to moderate the relationships, causing greater attraction and susceptibility to lead to greater emotional contagion and mood convergence. General support for this model was found in a laboratory study of 102 groups comprised of 367 undergraduate students (Sy & Choi, 2013).

The type of task may also be a critical factor determining the impact of leader mood on follower performance. In two laboratory studies of business school undergraduates, the positive affect of a leader observed on a videotape was positively related to creative, but not analytical, performance and to perceived leader effectiveness via emotional contagion. Negative emotional displays by leaders were also found to enhance analytical performance, but this process was not mediated by emotional contagion among followers (Visser et al., 2013).

While most of the research literature has focused on the leader as a source of contagion, an early laboratory study of the effect of power on susceptibility to emotional contagion found that the "powerful" person (playing the role of a teacher) actually experienced greater susceptibility to the emotional contagion of the less powerful person (playing the role of a student) with whom s/he interacted (Hsee, Hatfield, Carlson & Chemtob, 1990). While the authors of this study offer a variety of explanations that likely have much to do with the specific method they used, it is still a very intriguing finding. It is important and interesting to think about the importance of leaders catching emotions from their followers, particularly as a way to stay attuned to the mood of the group, similar to early studies of therapists who used emotional contagion to best understand their clients (Donner & Schonfield, 1975; Schoenewolf, 1990). A leader who serves only as a stimulus of emotional contagion and experiences minimal to no emotional contagion from his or her followers is likely to be less effective.

Overall, there is a substantial, growing amount of evidence that emotional contagion between leaders and their followers is a pivotal process that impacts not only followers' emotions, but also perceptions of leaders' effectiveness, work-related attitudes and behaviors, and both individual and group performance. A natural area of focus for future research is what makes a leader more emotionally contagious. This research could ask questions such as the following: What dispositional, demographic, and situational factors cause a leader to be perceived as more affectively expressive (Kring, Smith, & Neale, 1994; Sullins, 1989)?; How does this level of expressiveness, including the type and intensity of affect, influence how contagious a leader is?; What makes followers pay attention to leaders (which is a precursor to being able to catch their emotions)?; How important is the authenticity of expressed emotions to catching those emotions?. We might also ask about the role of intentionality in emotional contagion. Inducing emotional contagion can be a conscious or unconscious act (Gump & Kulik, 1997; Schoenewolf, 1990), and people in organizations can intuitively understand that this phenomenon exists. However, as knowledge about emotional contagion spreads within organizations and society, it will become increasingly important to see what happens when leaders try to intentionally induce emotional contagion among their followers, and whether and how organizational members use it intentionally as a strategy for influencing others.

Emotional contagion and employee work attitudes

Service organizations are an important context in which the influence of emotional contagion on employee work attitudes can be examined. Several studies have highlighted that service employees in healthcare who are recipients of negative emotions at work, catch those emotions, which leads to burnout, emotional exhaustion, decreased communicative responsiveness, and reduced occupational commitment. For example, Miller et al. (1988) offer a fascinating example of how emotional contagion can be a precursor to burnout among healthcare service workers. In a study at a large psychiatric hospital, they found that professional caregivers who experienced a greater susceptibility to emotional contagion were more likely to experience depersonalization and a reduced sense of personal accomplishment, both of which led to emotional exhaustion. Gathering data from registered nurses at two hospitals, Omdahl and O'Donnell (1999) replicated Miller et al.'s (1988) findings, focusing more explicitly on sharing patient emotions. They found that nurses who experienced greater sharing of their patients' emotions were more likely to experience emotional exhaustion. Interestingly, both studies pointed to poor communicative responsiveness, defined as one's "ability to effectively communicate with others about sensitive and emotional topics" (Omdahl & O'Donnell, 1999, p. 1353), as a mediator of the effects of emotional contagion on emotional exhaustion. The relationship was posited to be negative because the authors supposed that patients most often transfer their negative (not positive) emotions to nurses. Because they were the recipients of this negative emotional contagion, the nurses were, for example, less able to exhibit communicative responsiveness and listen attentively (Miller et al., 1988). Since interpersonal communication processes in caregiver-patient relationships are of paramount importance (DiMatteo & DiNicola, 1982), poor communicative responsiveness can lead caregivers to experience emotional exhaustion, a measure of chronic stress.

The relationship between susceptibility to emotional contagion and burnout may also be dependent on the type of industry and the types of emotions to which employees are exposed. Scholars exploring the effect of emotional contagion on emotional exhaustion in service organizations outside healthcare have achieved mixed results. For example, Verbeke (1997) found that salespeople who were more prone to catching their customers'

[3] This finding is similar to Barsade's (1994) finding that similarity between the trait positive affectivity of a group member and the emotion being propagated by the confederate will lead to greater emotional contagion.

emotions were most vulnerable to emotional exhaustion. This finding is consistent with studies performed in service organizations operating in the health economy. However, a body of research has found evidence of the buffering effects of susceptibility to emotional contagion. Specifically, Chu et al. (2012) found that hospitality employees who were more susceptible to catching others' emotions did not experience increased emotional exhaustion. Rather, in their study of 253 full-time employees in 17 hotels, they found a negative relationship between emotional contagion and emotional exhaustion via a positive relationship between emotional contagion and emotive effort, which they defined as trying to really feel the emotion the employee thinks is necessary to best serve the customer, similar to the concept of deep acting (Kruml & Geddes, 2000). Prior research supports this positive relationship between emotional contagion and emotive effort (Kruml & Geddes, 2000), perhaps because employees more prone to emotional contagion put forth more altruistic effort to meet customers' expectations (Duan & Hill, 1996). Accordingly, and given the buffering effect of deep acting with positive emotions on emotional exhaustion, Chu et al. (2012) proposed that hospitality employees with greater susceptibility to catching their customers' emotions may be less prone to emotional exhaustion when they meet customers' expectations. Similarly, Côté and Morgan (2002) found that engaging in deep acting to display positive emotions was associated with reduced emotional exhaustion. As such, the relationship between emotional contagion and burnout is complex, depending on the type of emotion being transferred and the motivation and emotional intelligence skills of the parties involved.

Emotional contagion and decision-making

Affect has been found to have a robust influence on organizationally relevant perceptions and judgments (Barsade & Gibson, 2007). However, relatively few studies have directly examined the impact of the process of emotional contagion per se on decision-making outcomes that are pertinent to organizational life. In an initial examination of the impact of mood congruence on subsequent evaluations, Doherty (1998) found that the emotion of a sender of a message (either happy or sad) not only led recipients to "catch" that emotion, but also led to changes in their attention, memory, and ratings of stimuli. Those who were exposed to an identical message that was conveyed in a happy tone were more likely to spend more time looking at happy pictures, rate them more positively, and have better recall for these images later than those who were exposed to an identical message conveyed in a sad tone, suggesting that initial emotional contagion impacts attention and attitudes toward subsequent unrelated tasks.

Several researchers examined how the transfer of emotions via emotional contagion impacts personal decision-making and risk perceptions, as well as policy and negotiation outcomes. In a naturalistic study in which participants reported the decisions they made over a span of three weeks, Parkinson and Simons (2012) found that the anxiety and excitement of others to whom the participants were close significantly influenced the focal actors' perceptions of the riskiness of their decisions. Importantly, the longitudinal (five waves over 20 weeks) and multi-faceted study design allowed the authors to disentangle the conscious (cognitive social appraisal) and unconscious (anxiety contagion) process influencing these decisions. Specifically, Parkinson and Simons (2012) found that anxiety transferred through the automatic processes of implicit emotional contagion led to greater perceived negative consequences of decisions. Importantly, this effect occurred above and beyond what was attributed to the conscious cognitive social appraisal processes.

In addition to personal decisions, emotional contagion can impact more broad outcomes such as policy decisions. Erisen, Lodge, and Taber (2014) tested and found evidence of emotional contagion influencing individuals' policy evaluations and subsequent policy decisions. Their theory of motivated political reasoning suggests that emotions caught in the early stages of informational processing have a significant influence on the evaluation and subsequent support or rejection of political policies (e.g., those concerning immigration or energy). Specifically, the mood that was passed on to the evaluators of policies led them to make mood-congruent evaluations and decisions. Given the current political landscape, it is critical for future studies to obtain a better understanding of the affective drivers of decision-making concerning public policy.

Negotiations represent another domain in which emotional transfer between participants is likely to significantly impact information processing and decision-making, yet it has received little attention by researchers to date. In one of the few studies to examine the impact of emotional contagion on negotiation outcomes, Filipowicz, Barsade, and Melwani (2011) found that negotiators who shift from a happy emotional display to an angry one achieved higher agreement rates and better relational evaluations than negotiators who displayed a steady state of anger. They found that emotional contagion fully mediated this effect; happiness caught early in a negotiation with a partner was enough to serve as a buffer against the anger they experienced later. As such, this study provided additional evidence that early emotional contagion has a significant influence on subsequent reasoning and decision outcomes. This finding is reinforced by the results of the managerial decision making study by Barsade (2002) described earlier, which took place within the context of a group negotiation.

Emotional contagion and customer attitudes

Another rich area of research concerns the influence of employee emotional contagion on customer attitudes. Since customers are the lifeblood of an organization (Gupta & Zeithaml, 2006), it is critical to uncover the key factors that influence customer attitudes. Customer attitudes, including customer satisfaction, have been linked to important organizational outcomes, including customer retention and profits (Dietz, Pugh, & Wiley, 2004). Customers' interactions with frontline employees in organizations, such as salespeople, tellers, and customer service representatives, often shape customer attitudes (Verbeke, 1997). A growing number of studies have shown that emotional contagion can shape customer attitudes during interactions between customers and frontline employees (e.g., Barger & Grandey, 2006; Pugh, 2001). Such studies highlight how emotions displayed by frontline employees are transmitted to customers, and vice versa, and how the emotional contagion process can influence customer satisfaction, complaint intentions, and product attitudes.

In a foundational study in this domain, Pugh (2001) examined emotional contagion in interactions between customers and 131 bank tellers at 39 branches of a US bank. Pugh (2001) found that with positive emotional contagion—which occurred when bank tellers displayed more positive affect by, for example, smiling and making more eye contact (as measured by outside observers) during transactions with customers— customers reported the corresponding positive emotion and more favorably evaluated the quality of customer service. Similarly, marketing and consumer researchers have also established a link between the emotion displayed by salespeople and customer attitudes. In two laboratory experiments of women from the local community (median age 35–38 years), for example, Howard and Gengler (2001) found evidence of the existence of primitive emotional contagion in dyadic interactions (mediated by smiling mimicry) between participants in the role of two product evaluators. Studying these dyadic

interactions revealed that the product attitudes of one product evaluator were most favorable when they were receiving positive emotional contagion from the other product evaluator. In a study using actors in the role of salespeople, emotional contagion occurred between the confederate "salesperson" and the participant "customer," and positive emotional contagion led to greater customer satisfaction (Hennig-Thurau et al., 2006). Similarly, in a field of study of actual sales people and customers in a large sample of retail shoe stores, Tsai and Huang (2002) showed that emotional contagion (using a short-term affect measure similar to, but not the same as, mood) from employees positively influenced the amount of time customers spent in the store as well as their behavioral intentions (i.e., intentions to return to the store and recommend it to others). Thus, overall, positive emotional contagion between service providers and customers has been established as a key process that positively impacts customer attitudes across a range of customer service settings.

Building upon this initial work, scholars have delved deeper into the underlying mechanisms that explain how emotional contagion influences customer attitudes. In the field study described earlier, Barger and Grandey (2006) found that facial mimicry, a critical component of the emotional contagion process, mediated the relationship between customer smiling during an encounter and customer post-encounter mood, supporting the facial feedback hypothesis. This finding is very similar to that of Howard and Gengler (2001), who found that smiling mimicry was necessary for emotional contagion to occur within a laboratory setting. Another key contribution of Barger and Grandey's (2006) study was its demonstration that not only the occurrence of a smile by an employee but also the intensity of that smile (i.e., absent, minimal, or maximal) then influenced customer's own smiling, mood, and ultimately, encounter satisfaction. The degree of employee smiling also influenced service quality appraisal, which in turn influenced encounter satisfaction. Cleverly, Barger and Grandey (2006) also controlled for customers smiling before entering the shop, which serves as an excellent behavioral control of mood prior to the occurrence of emotional contagion.

While most research in sales settings has explored the transference of emotions from employees to customers, relatively fewer studies have argued that the effects of emotional contagion could be bidirectional and explored emotional contagion from customers to employees. Tan, Foo, and Kwek (2004) found empirical evidence of the influence of customer trait affect on employees. Specifically, customers with high positive trait affect led cashiers in a fast food restaurant to display more positive emotional contagion, operationalized by more positive emotional expressions (such as smiling and eye contact) observed by external raters. In a study of simulated interactions between customers and frontline employees, using observational measures of mimicry and self-reported measures, Dallimore et al. (2007) found that a customer initiating an angry complaint led to negative emotional contagion in the frontline employee. Based on the change in the affective state of the employees, their results suggest that frontline employees can catch customers' strong negative emotions. Interestingly, in the field study we described earlier, Verbeke (1997) found that a salesperson's ability to catch her or his customers' emotions was an asset as it led to more customer purchases. In this study of salespeople across companies in the manufacturing, services, and wholesaling sectors in the Netherlands, he found that salespeople with greater susceptibility to emotional contagion scored even higher for customer purchases than did salespeople who were more strongly able to infect customers with emotions. Verbeke (1997) used both objective measures (i.e., sales volume) and self-reported measures of salespersons' ability to interact with customers and to engage in relationships with customers.

Irrespective of the direction in which emotional contagion occurs between frontline employees and customers, there are also moderating factors at the individual, dyadic, and group levels that are worth noting. At the individual level, Hennig-Thurau et al.'s (2006) findings suggest that the authenticity of employees' display of emotional labor, rather than the extent of their smiling, most strongly influenced customers' emotions and perceptions. Specifically, when customers in simulated employee-customer interactions encountered authentic employees, they were more likely to adopt the emotions of those employees than customers who encountered inauthentic employees. Additionally, Howard and Gengler (2001) found that emotional contagion varied as a function of a customer's receptivity to the emotions of a frontline employee.

In sum, emotional contagion, particularly primitive emotional contagion via behavioral mimicry and facial feedback, is an important factor in employee-customer relations. Still, more research into other topics, such as the influence of negative employee emotions on customer emotions and behavior and how customer affect leads to emotional contagion in employees, would improve our understanding of this phenomenon.

Areas for future research on emotional contagion within organizations and beyond

Which is more powerful and what is the tipping point in negative versus positive emotional contagion

Emotional contagion has been found to occur across a wide variety of moods and discrete emotions with positive and negative valence. For example, prior studies have examined contagion of a generalized positive mood (Johnson, 2009; Sy et al., 2005; Tan et al., 2004; Tsai & Huang, 2002;), and a generalized negative mood (Dasborough et al., 2009; Johnson, 2009). In addition, as we note earlier, emotional contagion has also been found in the domain of discrete emotions such as anger (Cheshin et al., 2011; Fan et al., 2014; Kelly et al., 2016; Mondillon et al., 2007), anxiety (Parkinson & Simons, 2012), loneliness (Cacioppo et al., 2009), fear (Bhullar, 2012a,b), joy (Fan et al., 2014) love (Bhullar, 2012a,b), and all four quadrants of the affective circumplex (Barsade, 2002).

A natural topic to investigate is whether negative emotional contagion spreads more quickly or powerfully than positive emotional contagion. Scientists have found that individuals generally respond differently to positive and negative emotional stimuli. Negative events are thought to generate quicker and more powerful emotional, behavioral, and cognitive responses than neutral or positive events (for a review, see Cacioppo, Gardner, & Berntson, 1997; Rozin & Royzman, 2001). Barsade (2002) directly examined this question, anchoring contagion to the four corners of the affective circumplex (Russell, 1980) and testing the influence of positive and negative emotions with equally high and low amounts of intensity in her managerial decision group exercise in a laboratory setting. Interestingly, she found equal amounts of contagion of positive- and negative-valenced emotions, independent of energy, and no significant interaction effects. However, in a study of 115 students, Bhullar (2012b) found a stronger correlation between positive affect and emotional contagion than between negative affect and emotional contagion. This relates to a recent finding using eye-tracking technology: when people look at pictures in a crowd, their gazes stayed longer on positive faces compared to negative ones (Bucher & Voss, 2018). In accordance with motivated cognitive processing theory (Clark & Isen, 1982), which proposes that people may be motivated to stay in a positive affective state, there may be situations in which people instinctively focus more on positive emotions and avoid negative emotions. This is a fascinating area for future research to explore.

Another intriguing question that should be answered is the following: What is the "tipping point" of emotional contagion

within a dyad or group? That is, what happens in a "battle of emotional contagion" when an individual or group is confronted with another individual or group with a different emotion? Which type of emotion will dominate and why? Understanding the answers to these questions is critical for a more nuanced ability to understand and act during the processes of emotional contagion both in and out of organizational life. The field is currently not in a position to answer this question, mainly due to methodological limitations; there is simply not enough specificity, speed, nor ability to track measures over time outside of a computer-simulated model. Nonetheless, as face and body emotion readers become more accurate and other technologies come to the fore, this is a question that scholars will likely be able to address.

Counter-Contagion

While research on emotional contagion has largely focused on how the same emotion can be caught by others, there is scholarship on the phenomenon of "counter-contagion" that demonstrates the opposite effect that is, the emotions of others spark a different reaction in onlookers. Heider (1958) proposed a distinction between affective *convergence,* or emotional contagion *(*e.g. feeling joy from another person's joy), and affective *divergence,* or counter-contagion (e.g. feeling joy from another person's sadness). He also suggested that the perceived similarity between a focal individual and an onlooker (or member of the "we-group") predicts whether emotional convergence or divergence will occur (Heider, 1958). Other classic scholarship empirically demonstrated that the experience of seeing a disliked individual suffer could actually reduce onlookers' negative emotions, and observing this individual experience euphoria could increase negative emotions in the observer (Bramel, Taub, & Blum, 1968). These studies serve as the foundation for a more nuanced exploration of counter-contagion in subsequent work, leading to integrated theoretical models that account for both emotional convergence and divergence (e.g., Elfenbein, 2014; Epstude & Mussweiler, 2009).

Studies of counter-contagion in the last decade have further isolated the mechanisms and conditions under which affective convergence or affective divergence will occur (e.g., Coenen & Broekens 2012; Epstude & Mussweiler, 2009; van der Schalk, 2010; Van Kleef, 2009; Weisbuch & Ambady, 2008). Taken together, this body of work provides evidence supporting Heider's (1958) suggestion that perceived similarity or identification of a target as an in-group member are the key factors determining whether affective convergence or divergence is experienced (Epstude & Mussweiler, 2009; Weisbuch & Ambady, 2008). Based on a social functionalist view of emotion (Keltner & Haidt, 1999), this research suggests that individuals engage in social comparisons with others in order to make determinations about their similarity and/or group membership. These judgments drive their unconscious and conscious reactions to the emotional states of others, and determine whether their own emotions will mirror or deviate from those they observe (Epstude & Mussweiler, 2009; Weisbuch & Ambady, 2008).

Like affective convergence, affective divergence occurs automatically and spontaneously as a result of witnessing the emotions of an outgroup member or disliked individual (Schalk, 2010; Weisbuch & Ambady, 2008). In some cases of affective divergence, individuals experience less emotional contagion, involving less mimicry (Bourgeois & Hess, 2008; Schalk, 2010) and empathy (Gutsell & Inzlicht, 2012) for those perceived to be dissimilar or members of the outgroup. Counter-contagion occurs when observing an emotion causes one to feel a fundamentally opposed emotion, such as when facial expressions of joy elicit fear and negative emotions in outgroup members. Weisbuch and Ambady (2008) found that fear expressions converged among ingroup members when outgroup members, rather than ingroup members, expressed happiness. This phenomenon can be clearly witnessed in extreme cases, such as the euphoria experienced when an opposing soccer team loses (Leach et al., 2003) or when someone feels the "malicious pleasure at an outgroup's misfortune" known as *schadenfreude* (Leach et al., 2003, p. 2). This work has powerful implications for the biological processes and psychological mechanisms underlying the formation of cliques (Tichy, 1973), identity-based subgroups (Carton & Cummings, 2012), and conflict in organizations (Jehn & Bendersky, 2003). Just as emotional contagion and perceived similarity can function as an iterative process that brings individuals closer, perceived dissimilarity and affective divergence can have a negative spiral effect, reducing empathy and increasing boundaries between groups. Given that the inherent prevalence of in-groups and out-groups makes this research very relevant to organizations, more direct tests of counter-contagion in organizational settings are necessary.

Emotional contagion in a virtual world: social media, computer-mediated communication, and robots

Virtual communication and social media are pervasive in the Western workforce (Leonardi & Vaast, 2017; McFarland & Ployhart, 2015). Social media (e.g., Facebook, LinkedIn, Instagram) are digital platforms that facilitate information sharing, user-created content, and collaboration among people (Elefant, 2011; McFarland & Ployhart, 2015). As key conversations and tasks are increasingly carried out virtually, scholars have begun to explore whether emotional contagion can occur without physical co-location (in many instances, through only text-based interaction). While research in this domain is still relatively nascent, extant work suggests that emotions can in fact spread virtually, both among teams and, more broadly, across entire social networking platforms (Cheshin et al., 2011; Del Vicario et al., 2016; Ferrara & Yang, 2015; Kramer et al., 2014).

Despite the relative lack of non-verbal feedback, emotional contagion of both positive and negative emotions has been shown to spread via computer-mediated communication. In the absence of face-to-face communication, individuals are still able to sense or infer cues about emotions based on textual and behavioral indicators, which leads to diffusion of the emotion (Cheshin et al., 2011; Hancock et al., 2008). For example, Hancock et al. (2008) found that experimentally induced negative emotion led participants to use more words associated with negative emotions and to respond more slowly when interacting with a partner over an instant messenger platform. This then led their interaction partners to feel less positively than did interaction partners conversing with participants who had received a neutral mood induction. In a complementary study of virtual teams, Cheshin et al. (2011) found that flexible behaviors during computer-mediated communication tend to be perceived as happiness, while resolute behaviors tend to be perceived as anger, and both the positive and negative emotions are readily caught by teammates. Other larger scale studies of emotional contagion across social networking sites have indicated that both positive and negative emotions spread across these platforms, and individuals are far more likely to adopt emotions if they are over-represented in their network (Ferrara & Yang, 2015; Kramer et al., 2014).

While there is general agreement among scholars that emotions do spread virtually, there are still a number of fruitful avenues in this domain for future research to explore. For example, there remains a lack of consensus about whether positive or negative emotions are more likely to spread virtually (Del Vicario et al. 2016; Ferrara & Yang, 2015; Kramer et al., 2014). In addition, moving beyond positive and negative valences to understand the spread of various discrete emotions, such as joy, anxiety, and anger, is a promising route for future research. For example, Fan et al.

(2014) conducted a study on the Chinese site Weibo (similar to Twitter) and found that the correlations of anger among users is significantly higher than that of joy, and the correlation of sadness among users is low [which is not surprising as, with the exception of Christakis and Fowler's (2013), most emotional contagion studies have found low or no contagiousness of sadness, (e.g. Barsade, 2002; Eyre, House, Hill, & Griffiths, 2017; Hill, Griffiths & House, 2015; Safran & Safran, 1987)]. Future research should continue to build upon these initial findings, including examining which emotions are most likely to spread in computer mediated communication, and the implications of this emotional contagion for individual, group, and organizational outcomes.

Studies are just beginning to scratch the surface of additional moderators and the boundary conditions of virtual emotional contagion (Ferrara & Yang, 2015). Future work in this domain might further explore the impact of individual differences and situational characteristics (for example, the type of social media platform) on the tendency for emotional contagion to occur in virtual settings. The majority of studies focusing on contagion on these platforms examines text-based communication (or Web 1.0 platforms), yet social media are rapidly evolving to include more visually rich modes of content (Leonardi & Vaast, 2017; McFarland & Ployhart, 2015). McFarland and Ployhart (2015) underscore this distinction, noting that "what distinguishes social media from other forms of virtual communities and digital communication media is that social media are much more open, interactive, fluid, and dynamic . . . Imagine a group of people talking over dinner. Web 1.0 platforms would be equivalent to members passing written notes back and forth, while Web 2.0 platforms would be more similar to members talking interactively" (p. 1654). One can begin to see this in the use of visual communication platforms (e.g., video conferencing systems such as Skype), which by virtue of offering particitipants the ability to see some nonverbal cues could facilitate both the emotional understanding of those communicating through the system, and increase the spread of emotional contagion. As such, it is important that future scholarship on emotional contagion in virtual settings advances beyond the impact of text-based communication and analyzes interactions on platforms that allow for richer, more interactive discourse. Perhaps more controversially, from a technological perspective, it will become important to examine whether and how emotional contagion can occur between robots and humans. The ability to spread and share emotions may be the foundation upon which a deep acceptance of future robot-human interaction will be based.

The influence of emotional contagion on macro-organizational processes

Interestingly, the emotional contagion processes and outcomes found in the societally-based social media and digital platforms described above, support the idea that the phenomenon of emotional contagion can be productively examined within the field of macro-organizational psychology; that is, where "individual traits and states play a central role in explaining behavior at the organizational level of analysis" (Staw & Sutton, 1993, p. 350). For example, in relation to their model of emotional culture in organizations, Barsade and O'Neill (2014) explicitly discuss emotional contagion as a way that emotional culture[4] is transmitted throughout the organization. Also, the influence of organizations such as the press and social media platforms are predicted to have increasingly powerful emotional contagion effects at a macro-societal level. Through a time-series analysis, Cohen-Charash, Scherbaum, Kammeyer-Mueller and Staw (2013) found that the collective mood among investors on day 1, as measured by press reports, predicted changes in the opening prices of stocks on day 2. While not yet tested, it is likely that during financial crises, those consumers who are not in financial distress and can afford to continue to spend money, may stop or limit the amount they spend because they have "caught" anxiety from the press and social media. Because they do not realize that they have been influenced by the emotional contagion of others, they "own" these emotions and assume that they are actually anxious, restricting their spending and potentially causing an even greater problem for the economy as a whole.

Another societal phenomenon that is likely influenced by emotional contagion is the tendency for individuals to expose themselves to information that reinforces their existing views, which contributes to an apparent "echo chamber" within the press and social media (Barberá, Jost, Nagler, Tucker & Bonneau, 2015; Garrett, 2009). While scholars and political analysts have largely focused on the cognitive elements of ideological polarization, it may be that the affective element of these exchanges is a critical yet overlooked driver of the effect. This is because the emotions expressed on these platforms likely lead to increased partisanship and division, as different groups are bombarded with often vastly different sets of emotions about the same event. Emotional contagion increases division, due to the different feelings of, for example, collective rage, or collective joy or relief shared among the different sub-groups (and media echo chambers) to which the person belongs. It is interesting to consider that this echo chamber is predicted to be the result of not only demographic and cognitive differences, but also the emotional differences that result from emotional contagion. Last, studies in the past few years have focused on the social transmission of mood and behavior across large societal social networks, which was particularly challenging to track until recently (Bastiampillai, Allison, & Chan, 2013). For example, using sophisticated social network analysis of large datasets (such as the Framingham Heart Study), Christakis and Fowler (2013) found that depressed individuals not only sought others who shared depressive symptoms, but also influenced each other's moods over protracted periods of contact. This study illustrated how negative and depressed moods spread through intimate contacts with friends and families over long periods of time, a dynamic process that leads to the clustering of people in happy and unhappy moods in groups within networks (Fowler & Christakis, 2008). While it does not examine the context of social media or computer-mediated communication, this body of work suggests the powerful impact that networks have on the spread and contagion of emotions and longer-term moods.

While emotional contagion at the societal level is negative in these examples, this is not predicted to always be the case (e.g. Hill, Griffiths & House, 2015). Overall, future researchers should be examining emotional contagion, not only at the dyadic and group level, but also at the organizational and societal levels.

Conclusion: A model of emotional contagion in organizational life

Although there is a clear psychological theory of emotional contagion explaining how the emotional contagion process operates (i.e. people "catch" an emotional stimulus through behavioral mimicry, facial feedback and efference, mirror neurons, emotional comparison processes, and the like; for reviews, see Elfenbein, 2014; Hatfield et al. 2014; Kelly & Barsade, 2001), there

[4] Emotional Culture is defined as the " . . . behavioral norms, artifacts, and underlying values and assumptions reflecting the actual expression or suppression of an *emotion* (generalized in Barsade & O'Neill, 2016) and the degree of perceived appropriateness of these emotions, transmitted through feeling and normative mechanisms within a social unit." (Barsade & O'Neill, 2014, p. 558).

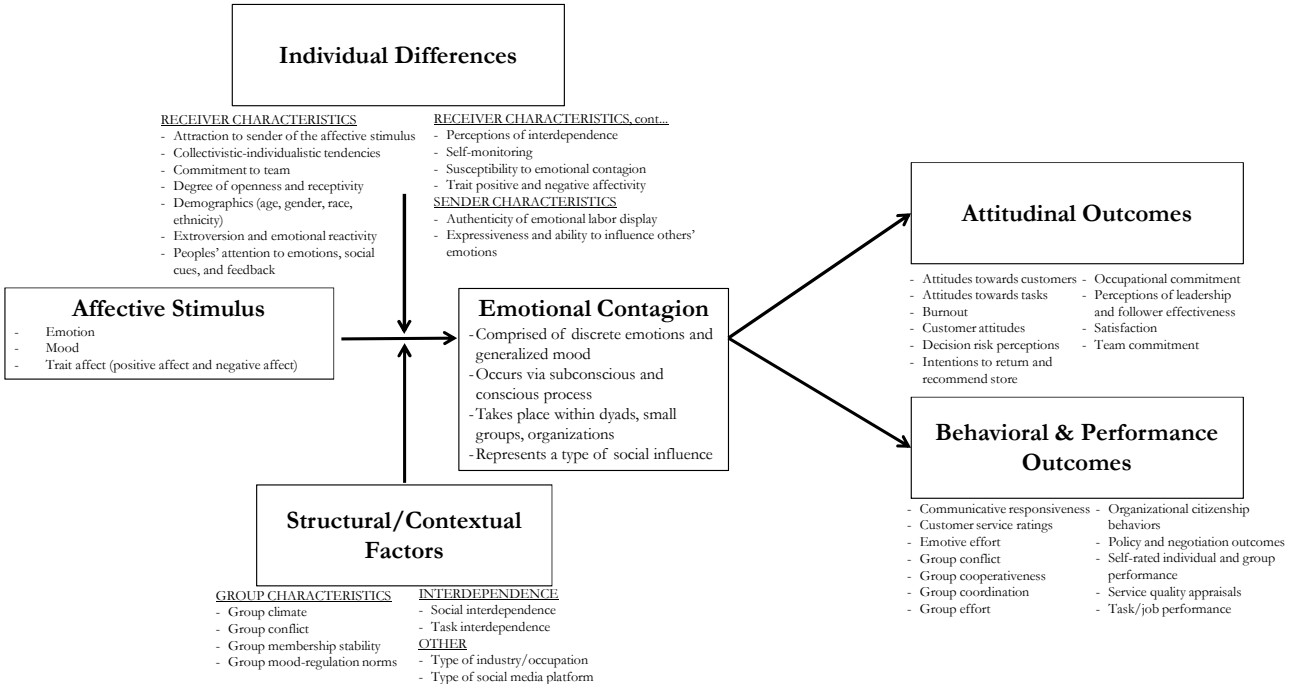

Fig. 1. Model of emotional contagion within organizations.

is not yet a specific theory of emotional contagion in organizational life. The goal is to develop a comprehensive theory in the future, but currently research is not sufficiently integrated into the very complex dynamics of organizational life to create a specific organizational theory of emotional contagion. Nonetheless, emotional contagion research to date offers a strong foundation for us to build a model of emotional contagion in organizations. We have done so here, as summarized in Fig. 1. In developing this model we hope to document what we currently know, why the research areas we discuss are important, and some fruitful directions for future research.

A starting point of our organizational model of emotional contagion is that there is an affective stimulus (usually a person or group of people) that sets the process of emotional contagion in motion by expressing emotions, moods or trait affect, which then influence the emotions or moods of other individuals, groups, organizations, and societies. To explore the ensuing process of emotional contagion, scholars have focused on four dimensions of the emotional contagion phenomenon which we described earlier: (1) it consists of discrete emotions and generalized mood; (2) it takes place via subconscious and conscious processes; (3) it occurs within dyads, groups, and organizations, and can be instigated by one or more individuals; and (4) it is a type of social influence. The effect of an affective stimulus on the emotional contagion process, is also shaped by individual differences (e.g., in the characteristics of the receivers and senders), and structural/contextual factors (e.g., group characteristics, level of interdependence, and type of social media platform and industry/occupation) in which the emotional contagion occurs. We conclude by describing the significant influence of the process of emotional contagion on attitudinal, behavioral, and performance outcomes within organizations.

When examining our emotional contagion model as a whole, we can see that the past 25 years have produced a wealth of knowledge about emotional contagion processes and outcomes that are specific and relevant to organizational life. It is also clear that, while there is a main effect of emotional contagion, there are important moderators that help to predict the degree to which the moods of individuals and groups will converge. The existence of these moderating effects is particularly important within organizational settings as they represent the effect of differing contexts inherent at work on whether and how emotional contagion occurs.

In sum, the past quarter century has allowed for the vigorous and fascinating exploration of the phenomenon of emotional contagion. We have learned much about this affective conduit through which people and groups communicate and influence one another by sharing emotions, often unconsciously. It is our hope that our model of emotional contagion in organizations will serve as a catalyst for future scholarship in this domain. We also hope that that scholars will continue to develop a deeper and more nuanced understanding of emotional contagion itself and how it influences key outcomes at the individual, group, organizational, and societal levels.

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