

# The Social Effects of Emotions

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## Keywords

emotions, emotional expression, social interaction, interpersonal effects, social functions, coordination

## Abstract

We review the burgeoning literature on the social effects of emotions, documenting the impact of emotional expressions on observers' affect, cognition, and behavior. We find convergent evidence that emotional expressions influence observers' affective reactions, inferential processes, and behaviors across various domains, including close relationships, group decision making, customer service, negotiation, and leadership. Affective reactions and inferential processes mediate the effects of emotional expressions on observers' behaviors, and the relative potency of these mediators depends on the observers' information processing and the perceived appropriateness of the emotional expressions. The social effects of emotions are similar across expressive modalities (face, voice, body, text, symbols). We discuss the findings in relation to emotional contagion, emotional intelligence, emotion regulation, emotions as social information (EASI) theory, and the functionality of emotions in engendering social influence. Finally, we identify gaps in our current understanding of the topic and call for interdisciplinary collaboration and methodological diversification.

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## INTRODUCTION

Questions about the nature and purpose of emotions have puzzled scholars for millennia. They permeated the thinking of ancient Greek philosophers like Plato and Aristotle; infused the work of the Stoics; divided influential thinkers like Descartes, Hume, Kant, and Nietzsche; and catalyzed the inception of the scientific discipline of psychology (James 1884). This is for good reasons. Emotions pervade our personal and professional lives, shape our relationships and social interactions, and influence our work performance and general life success. Thus, to understand human functioning, we must understand emotions.

Emotions have traditionally been conceptualized and studied as intraindividual phenomena, with research focusing on their neural basis (LeDoux 1995) and on the cognitive, experiential, expressive, and behavioral manifestations of emotions within individuals (Ekman 1993, Frijda 1994, Lazarus 1991). This intrapersonal perspective constituted the dominant paradigm in emotion research until the beginning of the twenty-first century. Since then, a growing scholarly awareness has emerged that emotions are inherently social: They often arise in interactions with other people, are regulated in light of social norms and goals, are expressed in social situations, and exert influence on others (Keltner & Haidt 1999, Parkinson et al. 2005, Van Kleef 2009). This rising appreciation of emotions' social constitution has caused a paradigm shift, with scientific endeavors increasingly targeted at understanding how our emotional expressions influence others.

In this article we review key theoretical perspectives and empirical research on the social effects of emotions. We use the phrase "social effects of emotions" to refer to how one person's emotional expressions influence the thoughts, feelings, and/or behaviors of one or more other persons. In the broader literature, this term is also sometimes used to refer to social behavior instigated by people's own emotional experiences (e.g., a person's happiness increasing their own affiliative behavior). Conceptually, however, there is a crucial difference between emotional dynamics occurring at the intrapersonal and the interpersonal level of analysis. Our focus here is on the effects of one person's emotional expressions on others. Because this is the first review in this publication dedicated exclusively to the social effects of emotions, we do not limit our coverage to a particular timeframe, although our emphasis is on more recent contributions.

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**Emotion:** valenced response to relevant events that is accompanied by specific patterns of interpretation (appraisal), subjective experience, physiological activation, expression, and/or behavior

**Emotional expression:** public display that suggests the experience of emotions (but may not actually correspond to subjectively experienced emotions)

**Social effects of emotions:** effects of emotional expressions on the affective reactions, inferential processes, and behaviors of people who observe the expressions

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## EMOTION AND EMOTIONAL EXPRESSION

Emotions are valenced responses to relevant stimuli that are directed toward specific targets (e.g., people, objects, or events), differentiated, and relatively short-lasting (Ekman 1993, Frijda 1994). Emotions are associated with distinct patterns of appraisals (i.e., evaluations of events in relation to relevant concerns), subjective experiences, physiological reactions, action tendencies, and expressions (Frijda et al. 1989, Lazarus 1991, Levenson et al. 1990). Emotional expressions refer to outwardly perceptible clues suggesting the presence of an emotional state in the expresser (Keltner & Haidt 1999, Van Kleef 2016). They include facial expressions—the traditional remit of research on emotional expressions—but also vocal/acoustic, bodily/postural, verbal/textual, and symbolic/pictorial expressions (e.g., emoticons or emojis).

Our definition of emotional expressions focuses on clues suggesting the presence of an internal emotional state because an expression may become dissociated from internal experience for various reasons. People may down- or up-regulate their emotional expressions strategically, creating a gap between the emotions they express and those they internally feel, in light of situational requirements or social goals (Côté 2005, Grandey 2003). Expressions may also be altered by clinical or physical conditions (e.g., schizophrenia, Parkinson's disease, injections of botulinum toxin; Van Kleef 2016). Moreover, the basic premise that emotional expressions reflect internal experiences of emotions has been debated. The emotional readout hypothesis (Buck 1985) holds that facial expressions are external signals of internal emotional processes that have provided social benefits over evolutionary history. This view is predicated on the assumption that internal feelings are consistently associated with outward expressions that are universal (Darwin 1872, Ekman 1993). Via such expressions, observers would gain access to the expressers' emotional experiences. According to this perspective, tears and laughter reflect privately felt distress and joy, respectively. In contrast, the behavioral ecology perspective (Fridlund 1994) posits that facial expressions are reflections of social motives that bear no necessary relation to an individual's emotional state. That is, emotional displays are communicative tools that are deployed in the service of social goals. In this view, tears and laughter signal a desire for support or affiliation, respectively, regardless of whether people feel corresponding distress or joy.

Whereas the correspondence between internal feelings and outward expressions is germane to theorizing about the nature of emotional expressions, it is not particularly pertinent to understanding the social effects of emotions. Critical to such understanding is the insight that observers distill relevant information from other people's emotional expressions—be it about their internally experienced emotions, their social motives, or some combination of the two (Van Kleef 2016). In particular, given that emotions reflect underlying motivations (Buck 1985), the social implications of expressions of internally felt emotions and of social motives are often comparable. Tears and laughter typically invite consolation and affiliation, regardless of whether they reflect emotional states, social motives, or both.

## THEORETICAL PERSPECTIVES ON THE SOCIAL EFFECTS OF EMOTIONS: A BRIEF HISTORY

The seeds of our current understanding of the social effects of emotions were sown by Darwin's (1872) book titled *The Expression of the Emotions in Man and Animals*. In this seminal work, Darwin drew attention to the communicative functions of emotional displays. Inspired by Darwin's pioneering work, social-functionalist perspectives on emotion emphasize the role emotions play in coordinating social interaction in our ultrasocial species. In the early stages of group life, our ancestors must have coordinated their actions without formal language. In these preliterate times, nonverbal behaviors—including facial, vocal, and bodily expressions of emotion—likely provided

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**Emotional**

**contagion:** a set of processes by which observers come to feel the same emotions that others express

**Primitive emotional**

**contagion:** theoretical process whereby observers catch another person's emotions via mimicry of emotional expressions and subsequent physiological feedback from facial, vocal, and postural movements

**Nonprimitive**

**emotional contagion:** a broader set of mechanisms (such as perspective taking) by which people may come to experience others' emotions

**Emotional**

**intelligence:** a suite of abilities associated with processing emotional information

**Expressive modality:**

way in which emotions are displayed to others, including via the face, voice, body, language, and symbols

**Emotion perception**

**ability:** the capability to accurately identify the emotions that other people express

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clues to other people's feelings, motives, and intentions (Ekman 1993, Fridlund 1994, Van Kleef 2016), making such expressions vital for social coordination, survival, and reproduction (Tooby & Cosmides 1990). The advent of language later provided humans with complementary ways of expressing their emotions and navigating increasingly complex social realities (Buck 1985).

If our present-day nonverbal emotional expressions have been selected for over the course of evolution because of their functionality in coordinating social life, one would expect to see evidence of universal nonverbal expressions of basic emotions that are critical to (social) survival. This proposition is supported by studies showing above-chance recognition of the facial emotional expressions of members of various cultural groups (shown in pictures) by members of both the same and different cultural groups (Ekman 1972, Izard 1971). Because of subtle intercultural variations in how emotions are expressed (so-called dialects), individuals are approximately 9% more accurate at recognizing emotions expressed by members of their own cultural groups (Elfenbein & Ambady 2002), but the basic muscle configurations involved in emotional expressions are comparable across cultural groups. This research provided a foundation for the then embryonic field of research on the social effects of emotions by mapping patterns of expression and recognition of facial emotional expressions.

Research on the social effects of emotions was further catalyzed by work on emotional contagion, that is, the spreading of emotions between people (Hatfield et al. 1994). Emotional contagion is presumed to be functional because it facilitates interpersonal understanding, closeness, and coordination. Initial research focused on primitive emotional contagion, whereby individuals automatically and nonconsciously mimic others' emotional expressions and come to experience similar emotional states via afferent feedback—i.e., physiological signals that are transmitted from facial, vocal, and postural movements to the central nervous system (Hatfield et al. 1994). Complementary theorizing on nonprimitive emotional contagion suggests alternative ways in which people's emotions can become similar in the absence of visual access to another person's (facial) emotional expressions (Hatfield et al. 1994). Examples include classical conditioning (Hatfield et al. 1994), perspective taking (Hawk et al. 2011), and social appraisal (i.e., using another person's responses to a situation to inform one's own appraisal of and responses to that situation; Manstead & Fischer 2001, Parkinson & Simons 2009). For an extensive discussion, readers are referred to Elfenbein (2014).

The conceptual broadening of emotional contagion to include processes such as perspective taking and social appraisal went hand in hand with a growing awareness that emotional expressions provide information about the expresser's experiences and appraisals of situations (Manstead & Fischer 2001, Scherer & Grandjean 2008). Researchers have proposed that individuals derive information from others' emotional expressions via a process that has been variously referred to as tracking (Van Kleef et al. 2004a), backtracking (Elfenbein 2007), reverse engineering appraisals (Hareli & Hess 2010), or reverse appraisal (de Melo et al. 2014). This process involves the use of emotion knowledge to extract information from others' emotional expressions about how they interpret and relate to a particular situation.

Another impetus for the growing appreciation of the social effects of emotions was provided by the emergence of research on emotional intelligence (Salovey & Mayer 1990). A core facet of emotional intelligence, grounded in the literature on emotional expressions (Ekman 1972, Elfenbein & Ambady 2002), is the ability to accurately perceive the emotions that others display across various expressive modalities such as the face, voice, body, language, and symbols. Research has demonstrated associations between emotion perception ability and outcomes such as job performance and relationship satisfaction (see Côté 2014, Elfenbein et al. 2007 for reviews). Such evidence attests to the role of emotional displays in regulating interpersonal interactions.

Finally, research on the social effects of emotions has been informed by emotions as social information (EASI) theory (Van Kleef 2009, 2016). Rooted in social-functionalist perspectives, EASI theory postulates that emotional expressions disambiguate social situations and facilitate interpersonal coordination. The theory posits that people can gain insight into each other's states of mind via their own relatively automatic affective reactions to others' emotional expressions and/or via more deliberate inferential processing of the meaning and implications of others' emotional expressions. Affective reactions include reciprocal and complementary emotional reactions to the expressions and sentiments about the expresser. Inferential processes include cognitive responses such as assumptions made about people and situations based on emotional expressions. Both processes inform behavioral responses. The relative impact of inferential processes on behavior increases when observers are more motivated and able to engage in thorough information processing and deem the emotional expression appropriate in light of the situation. Conversely, the relative impact of affective reactions increases when observers are less motivated and able to engage in thorough information processing and/or perceive the emotional expression as inappropriate. EASI theory predicts that these mechanisms function similarly regardless of whether the emotions are communicated via facial, vocal, postural, textual, or symbolic cues (according to the functional equivalence hypothesis), and that effects are stronger to the degree that senders are more emotionally expressive and receivers have greater emotion perception ability, as these characteristics facilitate the encoding and decoding of emotional information.

Before embarking on our review of the empirical record, we briefly consider the conceptual distinction between functions and effects. Social-functionalist perspectives emphasize the role of emotional expressions in coordinating social behavior (Keltner & Haidt 1999, Niedenthal & Brauer 2012, Van Kleef 2009). This emphasis on functionality follows from these perspectives' theoretical grounding in evolutionary theorizing [indeed, Darwin's (1872) foundational book was intended as additional proof for his theory of evolution]. Against this background, it is tempting to interpret the effects of emotional expressions through a functional lens. However, the fact that certain effects occur does not imply that they are functional. Clearly, not all social-emotional episodes are success stories; sometimes emotional expressions have deleterious consequences for the expresser, the target, or both (Parrott 2001). Lest we fall prey to a functionality fallacy, we must consider the full spectrum of social effects of emotions, whether functional or dysfunctional. In our review, therefore, we also include social effects of emotions that could be seen as socially dysfunctional.

## EMPIRICAL RESEARCH ON THE SOCIAL EFFECTS OF EMOTIONS

We first describe research on the effects of emotional expressions on observers' affective reactions and inferential processes. We then summarize the effects of emotional expressions on behavioral responses, grouping emotions according to their theoretical social signals (affiliation, supplication, dominance, and appeasement; Van Kleef 2016), while noting the affective reactions and inferential processes that have been found to mediate these effects. Next, we review research examining how individual and situational factors moderate the effects of emotional expressions on affective reactions, inferential processes, and behaviors.

### Affective Reactions Elicited by Emotional Expressions

Research on affective responses to emotional expressions has focused on reciprocal and complementary emotional reactions and sentiments toward the expresser.

**Reciprocal emotional reactions.** Reciprocal emotional reactions occur when an observer experiences the same (or similar) emotions as those shown by the expresser, as is the case when one

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**Emotions as social information (EASI) theory:** an integrative theoretical framework for understanding the interpersonal effects of emotional expressions

**Affective reaction:** affective response of observers to others' emotional expressions that partially mediates the expressions' effects on the observers' behaviors; it may include emotions and/or sentiments

**Inferential process:** cognitive response of observers to others' emotional expressions that partially mediates the expressions' effects on the observers' behaviors; it may include inferences about the expresser, the situation, and/or the self

**Functional equivalence:** hypothesis positing that the social effects of emotions are qualitatively, though not necessarily quantitatively, similar across expressive modalities (face, voice, body, words, symbols)

**Reciprocal emotional reaction:** reaction occurring when an observer experiences similar emotions as those shown by an expresser (e.g., anger eliciting anger)

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person's expressions of happiness elicit happiness in another person or when expressions of sadness elicit sadness. Research on reciprocal emotional reactions has been dominated by the emotional contagion perspective. Emotional contagion—i.e., the sharing of emotions between people—has been demonstrated in the laboratory as well as in social settings involving real or simulated dyadic or group interaction. In an early lab study, participants exposed to pictures showing emotional expressions (e.g., happiness, sadness, anger, fear, disgust) reported experiencing similar feelings themselves (Lundqvist & Dimberg 1995). In another study, members of ad-hoc laboratory groups containing a confederate of the experimenter who expressed different moods nonverbally came to experience similar moods as that individual (Barsade 2002). Early field studies revealed that emotional states spread in teams of nurses and accountants (Totterdell et al. 1998) and in professional cricket teams (Totterdell 2000). In a correlational study of work groups, groups converged for eight distinct mood categories, with high-arousal moods (e.g., cheerfulness, anxiety) spreading more readily than low-arousal moods (e.g., serenity, sluggishness) (Bartel & Saavedra 2000).

Compatible effects have been observed in a variety of contexts. Field studies in the service industry found that customers who were confronted with positive affective expressions of service providers reported experiencing more positive affect themselves (Pugh 2001, Tsai & Huang 2002). Leadership studies found that positive versus negative affective displays of leaders instigated matching affective states in their followers (Bono & Ilies 2006, Sy et al. 2005). Some evidence suggests these effects are stronger for high-arousal emotions (Connelly & Ruark 2010) and among followers who are more susceptible to emotional contagion (Johnson 2008). Finally, research on sports coaching revealed that coaches' expressions of happiness versus anger aroused similar emotions in their players (Van Kleef et al. 2019).

The traditional explanation of these effects revolves around primitive emotional contagion—the process whereby people first mimic another's emotional displays and then come to feel those emotions through afferent feedback. However, evidence for this sequence of processes is mixed at best (Hess & Fischer 2013). In a classic study, participants shown pictures of facial expressions of sadness, anger, fear, surprise, disgust, happiness, or no emotion exhibited convergent patterns of facial mimicry for all emotions except fear as well as matching subjective emotional experiences for all emotions except surprise (Lundqvist & Dimberg 1995). These largely overlapping patterns are consistent with the possibility that experiential responses to emotional expressions were mediated by facial muscle activation, but no test of such mediation was reported. In another study, participants shown video clips of dynamic facial expressions of anger, disgust, happiness, and sadness exhibited mimicry of all emotions and matching emotional experiences with the latter two emotions, but mimicry did not mediate these contagion effects (Hess & Blairy 2001). Casting further doubt on the theoretical notion of primitive emotional contagion, recent studies have raised concerns about the reliability of afferent feedback effects (Wagenmakers et al. 2016).

Moreover, numerous instances of contagion documented in the literature are not easily explained by a primitive contagion account. In one study, participants felt more depressed after a phone conversation with a depressed as opposed to a nondepressed person, without having had visual access to that person's facial or bodily expressions (Coyne 1976). Other research demonstrated that hearing emotional vocalizations from others can produce corresponding facial muscle activation, resulting in matching emotional experiences (Hawk et al. 2012). Such cross-channel contagion has been interpreted as evidence of emotional embodiment (Niedenthal 2007).

In addition, studies of online bargaining, dispute resolution, and teamwork revealed emotional contagion of anger and happiness via text messages, in the absence of visual access to nonverbal displays (Cheshin et al. 2011, Friedman et al. 2004, Van Dijk et al. 2008, Van Kleef et al. 2004a). Analysis of Facebook data revealed online emotional contagion, again without involvement of nonverbal cues or face-to-face interaction (Kramer et al. 2014). These effects cannot be explained

in terms of mimicry and afferent feedback, because lack of visual access to others' nonverbal emotional expressions precludes mimicry in the traditional sense.

The primitive emotional contagion account is further challenged by established moderators of contagion. In an early study by Lanzetta & Englis (1989), participants who expected a cooperative interaction with another person mimicked the other person's smiles or grimaces, whereas participants expecting a competitive interaction showed the opposite pattern. In other studies, the emotional expressions of outgroup members were mimicked to a lesser extent than the expressions of ingroup members (Van der Schalk et al. 2011, Weisbuch & Ambady 2008). Finally, evidence from naturalistic field settings involving dating partners and college roommates (Anderson et al. 2003) and from a controlled laboratory experiment involving unacquainted conversation partners (Van Kleef et al. 2008) revealed that emotional convergence is asymmetrical between partners with different levels of power, with lower-power partners shifting more toward the emotional experiences of their higher-power partners than vice versa. These findings indicate that emotional contagion is shaped by characteristics of social relations, such as interdependence and group membership.

A complete explanation of contagion effects needs to accommodate the sharing of emotions that is not automatic and nonconscious as well as motivational processes that render individuals more likely to catch the emotional states of those they want to affiliate with and attend to. One candidate mechanism is social appraisal, whereby observers use others' emotional expressions to interpret the situation they are in and consequently come to experience similar emotions (Manstead & Fischer 2001, Parkinson & Simons 2009). For example, employees may feel the same anxiety that their leader feels because the leader's emotion draws their attention to imminent changes in the organization, and uncertainty about these changes causes employees to feel anxious. Another candidate mechanism is perspective taking, whereby people feel the emotions of others because they imagine what it is like to be in their shoes (Hawk et al. 2011). For example, employees may feel the same anger that their leader feels because by putting themselves in their leader's shoes they realize that the leader has been treated unfairly by the organization. These processes (and others; see Elfenbein 2014) can explain how emotions are transmitted between people without mimicry and afferent feedback. To date, however, direct causal evidence for these mechanisms is scarce.

**Complementary emotional reactions.** Emotional expressions can also arouse complementary emotional reactions in observers. Individuals may respond with patterns of emotional experiences and expressions that are different from those displayed by the expresser yet match those expressions in terms of their social-motivational implications (Van Kleef 2016). Research on complementary emotional reactions is comparatively sparse, but their occurrence has been documented in a variety of studies involving verbal and nonverbal emotional expressions as well as physiological and self-report data. Expressions of sadness and distress can elicit sympathy (Eisenberg 2000) and compassion (Stellar et al. 2015, Van Kleef et al. 2008), expressions of anger can elicit fear (Dimberg & Öhman 1996), expressions of disappointment can elicit guilt (Lelieveld et al. 2013), and expressions of pride can elicit envy (Lange & Crusius 2015).

As is true for reciprocal emotional reactions, complementary emotional reactions are subject to moderating influences that hint at underlying motivational processes. In a study involving face-to-face conversations between unacquainted individuals, those with lower power experienced less compassion in response to their partner's distress than those with higher power, as reflected by self-report and physiological data (Van Kleef et al. 2008). In a computer-mediated negotiation study, lower-power partners experienced more fear when confronted with a higher-power counterpart's verbal expressions of anger than vice versa (Lelieveld et al. 2012). In another series of negotiation studies, verbal and nonverbal expressions of disappointment elicited more guilt

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**Complementary emotional reaction:** reaction occurring when an observer experiences emotions that are different from those shown by an expresser yet have matching social-motivational implications (e.g., anger eliciting fear)

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when the counterparts belonged to the same group than when they belonged to a different group (Lelieveld et al. 2013). Expressions of sadness elicited complementary feelings of empathy and compassion in negotiation counterparts only when features of the social situation provided reasons to experience other-concern for the expresser (e.g., when recipients had a collaborative relationship with the expresser or anticipated future interaction with them; Sinaceur et al. 2015). These findings suggest that complementary emotional reactions to others' emotional expressions are modulated by motivational processes that reflect the degree to which people depend on (in the case of power) and care about (in the case of shared group membership or ongoing collaborative relationships) another person.

Notably, the literature on complementary emotional reactions is mostly independent of the literature on reciprocal emotions. Consequently, relatively little is known about the conditions under which observers come to feel the same emotions that others display, such as when displays of sadness elicit sadness, and when observers feel different emotions, such as when displays of sadness elicit compassion (for exceptions, see Lelieveld et al. 2012, Van der Schalk et al. 2011, Weisbuch & Ambady 2008).

**Sentiments.** Emotional expressions can also evoke sentiments in observers, such as liking and feelings of closeness to the expresser (Frijda 1994, Van Kleef 2016). The findings consistently reveal that these sentiments match the emotions that are expressed. For instance, expressions of happiness have been shown to fuel positive impressions of college students (Harker & Keltner 2001), leaders (Glomb & Hulin 1997, Van Kleef et al. 2009), negotiation counterparts (Kopelman et al. 2006, Van Kleef et al. 2004a), and service providers (Tsai & Huang 2002), whereas expressions of anger engender negative impressions.

### **Inferential Processes Elicited by Emotional Expressions**

To successfully navigate social life, people look for information about others' dispositions, goals, and intentions. One source of such information is others' emotional expressions. Given that discrete emotions are associated with specific patterns of appraisal, experience, and action readiness (Ekman 1993, Frijda et al. 1989, Lazarus 1991), emotional expressions provide a window into the expresser's mind (Van Kleef 2009). Research has begun to document the inferences observers draw from emotional expressions about the expresser, the situation, and themselves.

**Inferences about the expresser.** One stream of research has investigated the inferences individuals draw about others' personalities based on the emotions others express. Knutson (1996) found that facial expressions of happiness fuel inferences of high dominance and affiliation, displays of anger and disgust fuel inferences of high dominance and low affiliation, and displays of sadness and fear fuel inferences of low dominance. Trait inferences from facial displays are modulated by the authenticity of the display: Authentic smiles engender stronger inferences of trustworthiness and cooperativeness than fake smiles (Krumhuber et al. 2007). Scholars have also begun to explore how observers make trait inferences from changing emotional expressions. Some research indicates that variable facial emotional expressions inform inferences of dynamic (rather than stable) traits (Weisbuch et al. 2016), whereas other work suggests that more recent facial expressions overrule earlier ones in shaping trait inferences (Fang et al. 2018).

Emotional expressions also inform inferences about dominance, status, and power. Such perceptions tend to be undermined by "weak" emotions like sadness and boosted by "strong" emotions like anger and pride (Tiedens 2001, Tracy et al. 2013). Expressions of anger fueled stronger inferences of power when they were matched with complementary (i.e., fear) rather than reciprocal (i.e., anger) emotional reactions from another person, which respectively confirmed and

disconfirmed the expresser's power signal (Hareli & David 2017). Conversely, public expressions of schadenfreude regarding the misfortune of initially successful people reduced the perceived dominance of those people (Lange & Boecker 2019). Other work found that individuals who expressed passion were conferred more status than neutral individuals (Jachimowicz et al. 2019). Accordingly, reframing expressions of distress as reflecting passion rather than emotionality increased inferences of competence (Wolf et al. 2016). Furthermore, expressions of contempt and compassion were associated with leadership perceptions because these emotions matched the observers' implicit beliefs about leaders (Melwani et al. 2012).

Related research has begun to uncover how observers use others' emotional expressions to infer others' momentary goals and intentions. This work is based on the notion that emotions are associated with relatively differentiated appraisal patterns, so that exposure to others' emotional expressions provides insight into how they evaluate the situation (Scherer & Grandjean 2008). In research on close relationships, respondents inferred that a person described as sad was in need of support (Clark et al. 1987). In negotiations, people inferred from a counterpart's verbal or nonverbal expressions of anger that the counterpart was tough and ambitious (Sinaceur & Tiedens 2006, Van Dijk et al. 2008, Van Kleef et al. 2004a), from expressions of happiness that the counterpart was lenient (Van Kleef et al. 2004a), and from expressions of disappointment that the counterpart had hoped for a better outcome (Van Kleef et al. 2006). In terms of appraisals, participants interpreted a counterpart's expressions of happiness as reflecting appraisals of goal conduciveness, sadness as reflecting goal obstruction, anger as reflecting goal obstruction combined with other-blame, and regret as reflecting goal obstruction combined with self-blame (de Melo et al. 2014). Other work suggests that expressions of disgust and anger inform inferences of moral motivations and self-interest, respectively (Kupfer & Giner-Sorolla 2017). Due to their association with morality and purity, expressions of disgust toward social groups convey moral condemnation (Katzir et al. 2019).

Drawing on biological work on appeasement in nonhuman primates, other research has examined inferences about expressers' social orientation. Consistent with the theoretical notion that expressions of appeasement signal awareness of a faux pas and a motivation to make up for it (Keltner et al. 1997), one study revealed that observers interpret facial and postural expressions of embarrassment as a signal of prosociality, trustworthiness, and commitment to social relationships (Feinberg et al. 2012). In another study, individuals interpreted a counterpart's written expressions of guilt in the context of a competitive negotiation as a sign of interpersonal sensitivity (Van Kleef et al. 2006). In a public goods game, a counterpart's expressions of guilt about previous contributions were taken as a sign that the other was committed to contributing more to the public good in the future (Wubben et al. 2009).

Emotional expressions by multiple people in a group can provide information about group functioning. In one study, observers anticipated more cooperative interactions, higher satisfaction, greater interpersonal liking and trust, and less conflict when two team members expressed happiness through facial displays than when they expressed sadness (Homan et al. 2016). Speaking to the idea that people use others' emotional expressions to disambiguate social situations (Van Kleef 2016), emotional expressions triggered stronger inferences when there was greater ambiguity surrounding the future trajectory of the team and when the emotional expressions were more likely to reflect team processes rather than dispositional tendencies toward positive or negative affectivity (Homan et al. 2016).

**Inferences about the situation.** Observers also draw inferences about the situation from others' emotional expressions. One series of studies showed that individuals use others' emotional expressions to gauge the interdependence structure of situations, with verbal and nonverbal expressions

of anger leading observers to construe situations as less cooperative than expressions of happiness or disappointment (Van Doorn et al. 2012). Other research indicates that people use emotional expressions to draw inferences about prevailing social norms. Participants who witnessed group members express anger (through facial displays) about a person's failure to follow the norms of a tea ceremony were more likely to infer the correct norm than were those who witnessed sad or neutral expressions, suggesting that expressions of anger potentiate norm learning (Hareli et al. 2013). In another series of experiments, verbal as well as nonverbal expressions of anger triggered relatively stronger inferences that a particular behavior (e.g., drinking alcohol in a university building) violated an autonomy norm (e.g., harming others), whereas expressions of disgust triggered relatively stronger inferences that the same behavior violated a purity norm (e.g., threatening bodily integrity) (Heerdink et al. 2019).

**Inferences about the self.** Finally, observers use others' emotional expressions to glean information about how they themselves are perceived and evaluated by others. One line of research indicates that people use others' emotional expressions to gauge their current level of acceptance and inclusion in groups. A series of experiments involving implicit measures revealed that individuals associate facial expressions of happiness with acceptance, warmth, and closeness and expressions of anger with rejection, coldness, and distance (Heerdink et al. 2015). Accordingly, individuals who were the targets of verbal or nonverbal expressions of happiness by fellow group members in computer-mediated or face-to-face interactions inferred that they were accepted and included in the group, whereas those who witnessed expressions of anger inferred being rejected and excluded (Heerdink et al. 2013). Along related lines, recipients of contempt expressions reported reduced self-esteem (Melwani & Barsade 2011).

People also use others' emotional expressions to gauge their own performance. In an early study, participants inferred greater success in a competitive negotiation when their opponent expressed disappointment rather than happiness, regardless of their actual performance (Thompson et al. 1995). Later work revealed that people do not always attribute others' emotional expressions to themselves. Several computer-mediated and face-to-face experiments revealed that negotiators whose counterparts first expressed happiness and then anger were more likely to attribute the counterpart's anger to their own behavior (i.e., a situational attribution), whereas those whose counterparts expressed consistent anger were more likely to attribute the anger to the counterpart's personality (i.e., a dispositional attribution) (Filipowicz et al. 2011).

Self-relevant performance inferences from emotional expressions have also been established in other performance domains. In a laboratory study, members of ad-hoc work groups inferred that they had performed better on a task when their leader emitted facial, vocal, and bodily displays of happiness while delivering feedback than when the leader displayed anger, although the content of the feedback was identical (Van Kleef et al. 2009). Similarly, in a field study of baseball and soccer teams, coaches' verbal and nonverbal expressions of happiness fueled inferences of good team performance and expressions of anger fueled inferences of poor performance, even while controlling for objective performance indicators (Van Kleef et al. 2019).

## **Behavioral Responses to Emotional Expressions**

The findings summarized in the preceding sections indicate that discrete emotional expressions elicit specific patterns of affective reactions and inferential processes in observers. In the current section, we review research on how these processes inform observers' behavioral responses. To structure this part of the review, we group emotions according to their primary signaling functions, discussing emotions of affiliation, supplication, dominance, and appeasement in turn.

**Affiliation emotions.** We use the term “affiliation emotions” to refer to emotions individuals experience when situations are benign, events are goal-congruent, and social intentions are positive. This category includes emotions that are relatively self-focused, such as happiness, amusement, and contentment, as well as emotions that are more focused on others, such as gratitude and appreciation (i.e., self-transcendent emotions; Stellar et al. 2017). These emotions are associated with a state of pleasure, safety, generosity, cooperation, and a broadening of thought-action repertoires, which enable individuals to identify and seize opportunities to build enduring (social) resources (Fredrickson 2001).

Expressions of affiliation emotions play an important role in the regulation of social behavior. Classic studies in developmental psychology showed that babies were more likely to cross a frightening visual cliff when a caregiver on the other side of the cliff showed facial expressions of happiness rather than fear (Sorce et al. 1985). Displays of happiness presumably signaled that the environment was safe, inviting the child to cross the cliff. Research has further shown that infants use others’ emotional expressions to inform their own choices. In one experiment, 14-month-old babies were more likely to select a box that had elicited a facial expression of happiness from another person than a box that had elicited an expression of disgust (Repacholi 1998). Similar patterns were observed in research involving chimpanzees, bonobos, gorillas, and orangutans (Buttelmann et al. 2009). These findings indicate that expressions of happiness invite basic approach-related behavior.

Expressions of happiness and other affiliation emotions also foster interpersonal closeness. Harker & Keltner (2001) found that female college students who smiled more in their yearbook pictures were more likely to be married by age 27 and reported greater marital satisfaction by age 52. Moreover, the expression of emotions such as affection and joy was found to predict a reduced likelihood of relationship dissolution via higher relationship satisfaction (Gottman & Levenson 1992). Although extraneous influences cannot be ruled out, these results are consistent with the possibility that happiness displays facilitate the formation and maintenance of social bonds by eliciting affiliation in romantic partners. Indeed, people who express rather than suppress amusement tend to inspire a greater desire to affiliate, because they are perceived as more extraverted and agreeable (Tackman & Srivastava 2016).

Expressing gratitude and appreciation can also benefit relationships. Cross-sectional, daily experience, observational, and longitudinal studies reveal that expressions of gratitude contribute to responsive behavior by partners via both intrapersonal processes (e.g., motivating conflict resolution) and interpersonal processes (e.g., signaling appreciation) (Gordon et al. 2012). Moreover, the benefits of showing gratitude may spread through social networks by evoking affiliative responses from third parties toward both the grateful person and the target of the gratitude (Algoe et al. 2020).

Favorable effects of affiliation emotions have also been observed in professional settings. Positive affective displays of service employees promoted favorable behavioral responses toward the store (e.g., time spent on site, spreading of positive comments) because they elicited positive affective reactions (Tsai & Huang 2002) and inferences of service quality (Barger & Grandey 2006). Employees made more suggestions for improving work practices and performance when peers (Liu et al. 2015) and leaders (Liu et al. 2017) displayed happiness and enthusiasm, due to greater perceived psychological safety and reciprocal positive affect. Positive affective displays by leaders can also facilitate certain aspects of follower performance. Leader displays of positive affect enhanced coordination (but not effort) in teams (Sy et al. 2005) and creative (but not analytical) performance in individual followers (Visser et al. 2013) by instilling positive affect in them. Finally, expressions of passion during entrepreneurial pitches increased the funding offers extended

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**Affiliation emotions:** emotions individuals experience when situations are benign, events are goal-congruent, and social intentions are positive

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**Supplication**

**emotions:** emotions arising from a confrontation with a past, current, or future situation in which outcomes deviate negatively from expectations or desires

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to entrepreneurs, but in competitive settings, expressions of passion were perceived as threatening and reduced support (Jachimowicz et al. 2019).

This reversal fits with studies on competitive negotiations and economic games that found that expressions of happiness tend to engender competitive rather than cooperative responses. In negotiations, expressions of happiness elicited higher demands and smaller concessions than neutral expressions, because negotiators inferred that happy counterparts were lenient (Van Kleef et al. 2004a). In economic games, participants made more unfair offers to a partner whom they believed had previously watched a happiness-inducing rather than an anger-inducing film clip (Andrade & Ho 2007). People who express considerable happiness (as opposed to moderate happiness) may be particularly vulnerable to exploitative behavior in competitive settings because they are perceived as naïve (Barasch et al. 2016). However, expressions of hope (which signal future aspirations rather than satisfaction) can enhance support for conflict resolution proposals by instilling reciprocal hope in observers (Cohen-Chen et al. 2019).

**Supplication emotions.** Supplication emotions arise when individuals are confronted with a past, current, or future situation in which outcomes deviate negatively from their expectations or desires. Examples include sadness, disappointment, distress, worry, and fear. Although these emotions have different secondary appraisal components (Lazarus 1991), they share a supplication function in that their expression can be seen as a call for help (Clark et al. 1987, Eisenberg 2000).

Indeed, research indicates that expressions of supplication emotions elicit help and support. Early work in primatology revealed that displays of fear by rhesus monkeys can mobilize conspecifics to help. In one study, rhesus monkeys witnessing expressions of fear in another monkey that anticipated an electrical shock quickly learned to switch a lever to eliminate the shock (Mirsky et al. 1958).

Humans appear to be similarly sensitive to expressions of supplication emotions. One line of research found that individuals with a communal orientation offered more help to another person who was described as sad rather than neutral (Clark et al. 1987). Other work showed positive effects of facial displays of sadness on charity donations (Small & Verrochi 2009), which were mediated by respondents' reciprocal feelings of sadness. Individuals who were confronted with tearful as compared to angry or neutral faces experienced more sadness themselves and were more willing to provide emotional support (Hendriks & Vingerhoets 2006). Moreover, verbal as well as nonverbal expressions of disappointment elicited more help and financial support than neutral or angry expressions (Van Doorn et al. 2015).

These findings suggest that supplication emotions play a vital role in the establishment and maintenance of communal relationships. Indeed, correlational, longitudinal, and experimental data indicate that the willingness to express feelings of distress, nervousness, and anxiety positively predicts friendship formation and intimacy (Graham et al. 2008). For instance, expressions of worry in romantic relationships motivated partners' attempts to comfort the expresser (Parkinson et al. 2016). Conversely, suppressing the expression of supplication emotions jeopardizes close relationships, because it denies partners the opportunity to respond adaptively to each other's predicaments. In a series of experiments, when one member of a female dyad was instructed to suppress her emotions while discussing an upsetting topic, her conversation partner experienced less rapport and was less willing to affiliate with her (Butler et al. 2003). Similarly, in a longitudinal field study, suppression of various emotions including sadness and anxiety was associated with perceptions of receiving less support from peers (Srivastava et al. 2009). These findings indicate that the suppression of supplication emotions can hinder friendship formation and relationship closeness.

Although supplication emotions are preferentially expressed in communal rather than exchange relationships (Clark et al. 1987), there is some evidence that they can elicit helpful responses in business settings as well. Archival, observational, and experimental data revealed that customer displays of fear elicited empathy and, in turn, helpful behaviors from airline personnel (DeCelles et al. 2019). Furthermore, negotiation studies indicate that verbal as well as nonverbal expressions of disappointment and worry can elicit concessions from counterparts (Lelieveld et al. 2012, 2013; Van Kleef et al. 2006). The interpersonal effects of supplication emotions in competitive settings such as negotiations are, however, subject to boundary conditions, to which we turn below in the section titled Moderating Influences.

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**Dominance emotions:** emotions accompanying individuals' desire to (re)establish their autonomy or superiority

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**Dominance emotions.** By dominance emotions we denote a class of antagonistic emotions that accompany individuals' desire to (re)establish their autonomy or superiority. A prominent example is anger, which arises when people's goals are thwarted and they blame someone else for it, resulting in a tendency to aggress against the other and enforce change (Lazarus 1991). Other examples are contempt, which occurs when one feels (morally) superior to others and wishes to exclude them from one's social sphere (Fischer & Roseman 2007), and pride, which signals status attained by successfully achieving challenging goals (Tracy et al. 2013).

The social effects of dominance emotions are multifaceted. As intuition suggests, many of these effects are unfavorable. For instance, expressions of anger by romantic partners discussing what they wanted each other to change were associated with lower relationship quality (Le et al. 2020), and expressions of anger during marital conflict evoked more antagonistic tendencies in partners than expressions of distress (Kubany et al. 1995). In one study, participants in economic games inferred that counterparts who displayed pride, compared to counterparts who displayed no emotion, had previously made more self-serving decisions and, in turn, made more self-serving decisions themselves (Wubben et al. 2012).

Expressions of dominance emotions can also have favorable consequences, however. People generally experience episodes of anger as negative, but they also believe such episodes are often useful because they prompt relationship partners to address relational problems (Averill 1982). Indeed, a common response to expressions of anger in intimate relationships is to talk things over (Fehr et al. 1999). Anger expressions tend to have more beneficial long-term consequences for relationships than expressions of contempt, which are associated with rejection and social exclusion (Fischer & Roseman 2007).

The potential of anger expressions to instigate change is evident in multiple domains of life. A persuasion study showed that some students who received written angry statements and angry emoticons from classmates in response to their opinion about an educational issue subsequently voted against their initial preference (Van Kleef et al. 2015). Furthermore, verbal as well as nonverbal expressions of anger in groups can motivate deviant group members to conform to the majority by fueling inferences of impending rejection (Heerdink et al. 2013).

Leadership studies revealed that verbal, facial, vocal, and postural expressions of anger by leaders can enhance the motivation (Van Kleef et al. 2010) and performance (Van Kleef et al. 2009) of their followers, although such expressions may also undermine organizational citizenship behaviors (i.e., behaviors that are helpful to organizations but not explicitly specified in job descriptions; Koning & Van Kleef 2015). Furthermore, instructors' nonverbal expressions of anger in an educational context engendered more learning (i.e., better recognition and recall of learned words) than expressions of happiness (Van Doorn et al. 2014). Expressions of contempt, too, can motivate performance, although they may also provoke aggression (Melwani & Barsade 2011).

Research on conflict and negotiation revealed that expressions of anger can be effective in enforcing cooperation from counterparts. Verbal and nonverbal expressions of anger elicited more

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**Appeasement**

**emotions:** emotions individuals experience when they realize they transgressed some social contract, moral code, or convention

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generous offers in negotiations and ultimatum bargaining games than neutral expressions, because expressions of anger fueled inferences of toughness and ambition (Sinaceur & Tiedens 2006; Van Dijk et al. 2008; Van Kleef et al. 2004a,b). The favorable effects of anger are enhanced when its expression is preceded by expressions of happiness, because the targets of such emotional transitions are more likely to infer that their own behavior (rather than the other's personality) caused the anger, thereby prompting behavioral change (Filipowicz et al. 2011).

Although expressions of anger can thus extract concessions in conflict and negotiation, they come with potential costs. Negotiators who expressed anger rather than no emotion during coalition negotiations received a larger share of the pie if they were included in the final coalition, but their chances of being accepted in the coalition were reduced because they were disliked by the other negotiators (Van Beest et al. 2008). Similarly, agents who expressed anger during ultimatum bargaining were more likely to be deceived because their anger triggered reciprocal anger in their counterparts (Van Dijk et al. 2008). Finally, negotiators who conceded to an angry counterpart during a negotiation secretly sabotaged the counterpart afterward by assigning unappealing tasks to them because they felt mistreated (Wang et al. 2012).

**Appeasement emotions.** Appeasement emotions emerge when individuals realize they transgressed some social contract, moral code, or convention. Examples include embarrassment, guilt, shame, and interpersonal regret. Although these emotions differ in their specific antecedents and associated behavioral tendencies (Keltner 1996), they are similar in that they are associated with a sense of discomfort and a desire to make up for a misstep.

Empirical work on the social effects of appeasement emotions is comparatively scarce. Theoretical perspectives suggest that appeasement emotions serve to rebuild trust, promote social reconciliation, and deflect punishment and aggression (Keltner et al. 1997). Consistent with this idea, experiments revealed that observers were more willing to affiliate with and entrust resources to individuals who nonverbally expressed embarrassment, because displays of embarrassment fueled inferences of prosociality (Feinberg et al. 2012). Other work found that apologizing for a transgression, which can be seen as an acknowledgment of guilt and an expression of regret, reduced blame and punishment in children (Darby & Schlenker 1982) and aggression in adults (Ohbuchi et al. 1989). These studies indicate that appeasement emotions can help restore trust and reduce retribution.

The same signs of prosociality that are an asset in cooperative relationships constitute a liability in more competitive settings. In a series of negotiation studies, participants interpreted verbal expressions of guilt and regret by a counterpart as a sign that the other had claimed too much in a previous round and, in turn, made smaller concessions to them (even though they rated them more favorably than counterparts who did not express such emotions) (Van Kleef et al. 2006). These data suggest that expressing appeasement emotions can backfire in competitive encounters because it renders expressers vulnerable to exploitation. The paucity of studies, however, precludes definitive conclusions about the social effects of appeasement emotions.

### **Moderating Influences**

Our review thus far has revealed important regularities in the social effects of emotions but also appreciable variation in when and how displays of emotions influence observers' affective reactions, inferential processes, and behaviors. This variation points to the operation of moderating influences. Research to date has uncovered three broad clusters of moderating factors. The first class of variables moderates the social effects of emotions by influencing how accurately emotional expressions are decoded by others. The next two clusters of variables moderate the social effects of emotions by shaping the relative potency of affective and inferential processes.

**Emotion decoding.** A general precondition for any social effects of emotions to occur is that a person's emotional expressions be successfully decoded—that is, accurately perceived and recognized—by others. Various factors influence such decoding. For instance, damage to the amygdala can impair the recognition of particular facial emotional expressions (Adolphs et al. 1994), and individuals with autistic spectrum disorder have greater difficulty recognizing and responding to others' emotional expressions (Uljarevic & Hamilton 2013). Moreover, children's development of emotion perception abilities is shaped by the behavior of their parents, including how much parents talk about emotions and engage in abusive behavior in the presence of their children (Gottman et al. 1997).

Research also points to the importance of emotional intelligence, and particularly the ability to accurately perceive others' emotions (Salovey & Mayer 1990). Various studies indicate that the ability to detect and label emotion cues, which is typically assessed with tests requiring respondents to identify emotions shown in pictures, positively predicts social functioning and professional success (for reviews, see Côté 2014, Elfenbein 2007). These benefits likely occur in part because people with greater emotion perception ability respond more readily to others' emotional expressions. Providing more direct evidence for this idea, research revealed that customers with greater emotion perception ability were more sensitive to the authenticity of service agents' emotional expressions, which had downstream consequences for the quality of the service encounters (Groth et al. 2009). In another study, individuals with higher ability to identify emotions were more responsive—that is, they exhibited more validation and caring—when imagining distressing situations their romantic partners could face compared to individuals with lower levels of this ability (Gregory et al. 2020).

**Information processing.** Consistent with the idea that emotional expressions provide information, there is growing evidence that the social effects of emotional expressions depend on observers' motivation and ability to process (social) information, including others' emotional expressions (Van Kleef 2009). Specifically, research indicates that because inferential processing requires more cognitive resources than affective processing, the relative influence on behavioral responses of inferential processes compared to affective processes increases as information processing goes up and decreases as it goes down.

Negotiation studies revealed that the general tendency to concede more to angry than to happy counterparts is moderated by dispositional and situational indicators of (social) information processing (Van Kleef et al. 2004b). Negotiators low on the need for cognitive closure or negotiating under low time pressure (i.e., with relatively high information processing motivation) inferred from their counterparts' written expressions of anger that the counterpart was ambitious and unlikely to give in, and from expressions of happiness that the counterpart was lenient and likely to accommodate, which led them to make larger concessions to angry than to happy counterparts. Those with a high need for cognitive closure or negotiating under high time pressure (i.e., with relatively low information processing motivation) did not draw such inferences and did not respond differentially to their counterparts' emotional expressions. Responses to counterparts' emotions are similarly moderated by a social-contextual factor known to undermine information processing: power. Across several studies employing different operationalizations of power, lower-power negotiators were consistently more strongly affected by their counterpart's anger than were higher-power negotiators (Friedman et al. 2004, Sinaceur & Tiedens 2006, Van Dijk et al. 2008, Van Kleef et al. 2004b).

Consistent with the idea that people use the information embedded in others' emotional expressions to make sense of ambiguous situations (Van Kleef 2016), other work indicates that inferential processing takes precedence over affective processing when situations are less clear. In

two negotiation experiments, verbal expressions of anger elicited larger concessions than neutral expressions in ambiguous mixed-motive settings that contained elements of both cooperation and competition but not in uniformly cooperative or competitive settings (Adam & Brett 2015). Concessions to angry counterparts in mixed-motive settings were mediated by inferences of toughness, whereas resistance to angry counterparts in uniform settings was driven by affective reactions (i.e., hostility).

Inferential processing is also enhanced when emotional expressions have clear bearing on the situation. In a series of negotiation experiments, expressions of anger versus happiness that were clearly linked to the perceiver's behavior (i.e., integral emotions) engendered stronger effects on concession making than emotional expressions that appeared to be unrelated to the negotiation situation (i.e., incidental emotions) (Hillebrandt & Barclay 2017). This happened because integral emotional expressions triggered greater inferences of threat of impasse (in the case of anger) versus cooperativeness (in the case of happiness). Compatible effects occurred when expressions of anger versus happiness were directed at a negotiator's behavior rather than at them as a person, because behavior-oriented emotional expressions triggered more inferential processing (Steinel et al. 2008). In another study, men were offered a higher salary when they expressed anger rather than sadness in a professional context, whereas the opposite trend was observed for women (Brescoll & Uhlmann 2008). This was because men's emotional expressions were attributed to the situation and processed as relevant information, whereas women's expressions were attributed to internal characteristics and discarded.

Research on persuasion and attitude change similarly indicates that targets of persuasive communications are more strongly influenced by the verbal and nonverbal emotional expressions of a source when they are low rather than high on dispositional need for structure and when they are under low rather than high cognitive load—conditions that are conducive to thorough processing of (social) information (Van Kleef et al. 2015). In studies of group decision making, deviant group members only conformed to an angry rather than a happy majority when they had an uncertain position in the group and were motivated to stay in the group—factors that increase information processing motivation (Heerdink et al. 2013). Conversely, opinion deviants in a jury context were more likely to influence the verdict when they expressed anger rather than fear or no emotion, but this benefit was limited to white men; female and African American jury members who expressed anger were discredited for being “emotional” (Salerno et al. 2019).

Information processing also shapes responses to the emotional expressions of leaders and service providers. Teams high on processing motivation performed better on an experimental task after their leader had provided feedback in an angry tone, because they inferred from the leader's anger that their performance was subpar; conversely, teams low on processing motivation performed better after their leader provided feedback in a happy tone, because the leader's happiness engendered reciprocal happiness and favorable impressions of the leader (Van Kleef et al. 2009). In a service context, stronger expressions of happiness by service providers enhanced the loyalty intentions of customers with lower information processing motivation by inducing positive affective reactions in them, whereas more authentic expressions of happiness enhanced the loyalty intentions of customers with higher information processing motivation by fueling appraisals of employee service performance (Wang et al. 2017).

**Perceived appropriateness.** To be adaptive, emotional expressions must match the social context in which they occur. Emotional expressions that deviate from implicit or explicit norms and expectations may be perceived as inappropriate (Shields 2005). Violations of such norms and expectations can be qualitative (i.e., showing the wrong emotion) or quantitative (i.e., showing the right emotion with the wrong intensity) (Van Kleef 2016). Emotional expressions can be

considered appropriate to the degree that they are “correct for the situation and in correct proportion to the evoking circumstances” (Shields 2005, p. 7). Mounting evidence indicates that the social effects of emotions depend on their perceived appropriateness, such that (negative) affective reactions become more potent in shaping behavioral responses (and inferential processes less so) to the degree that emotional expressions are perceived as inappropriate.

A first stream of research speaks to the consequences of different emotion regulation strategies that produce emotional expressions that are more or less authentic (i.e., consistent with internal feelings) and are therefore perceived as more or less appropriate. Antecedent-focused emotion regulation, or deep acting, involves regulating internal feelings (e.g., through reappraisal) and thereby changing expressions as well, resulting in a concordance between internal feelings and external displays (Grandey 2003, Gross 1998). For example, a customer service agent could recall a happy memory in order to both feel and display enthusiasm to customers. In contrast, response-focused regulation, or surface acting, involves manipulating expressions without regulating internal feelings, resulting in a discordance between internal feelings and outward displays (Côté 2005, Gross 1998). For instance, a leader could pretend enthusiasm about a project they actually find uninteresting. Such discordance may be perceived by others as disingenuous and, thus, inappropriate. Accordingly, individuals who habitually engage in expressive suppression were found to have lower-quality relationships (Srivastava et al. 2009). Furthermore, employees who used surface acting to regulate their emotional expressions were perceived as less sincere by peers than those who used deep acting (Grandey 2003), and their service was rated less favorably by customers (Groth et al. 2009). People also tend to feel less trust toward, and cooperate less with, interaction partners who exhibit inauthentic rather than authentic smiles (Krumhuber et al. 2007). Likewise, people were less trusting of, and cooperated less with, counterparts who showed inauthentic rather than authentic displays of anger (Campagna et al. 2016, Côté et al. 2013).

A second stream of research illustrates that the appropriateness of emotional expressions depends on social-contextual factors that shape norms and expectations regarding emotional expression, including emotional display rules (rules about which emotions may be expressed in a certain situation; Ekman 1993), status, personality, and culture. These factors influence perceptions of the appropriateness of emotional expressions and, in turn, observers’ behavioral responses in similar ways. Regarding display rules, verbal expressions of anger were deemed more appropriate and elicited larger concessions from participants in negotiations than neutral expressions when there was no explicit rule against showing anger, but these expressions were perceived as inappropriate and triggered retaliatory responses when there was a no-anger rule (Van Kleef & Côté 2007). In another study, expressions of amusement were perceived as inappropriate in a negative context that did not match the expression’s positive valence, resulting in unfavorable impressions (Kalokerinos et al. 2017). Similarly, a person’s use of smileys in an email message was deemed appropriate and fueled more favorable impressions than a text-only message in an informal setting, but it was deemed inappropriate and fueled less favorable impressions in a formal setting (Glikson et al. 2018). Regarding status, Melwani & Barsade (2011) argued that expressions of contempt by high-status individuals are perceived as comparatively more appropriate than expressions of contempt by low-status individuals. Accordingly, they found that lower-status recipients performed better on a task after receiving contemptuous feedback than after receiving neutral feedback, whereas higher-status recipients did not show enhanced performance and instead exhibited more aggression. In another study, leaders’ expressions of anger reduced followers’ willingness to engage in voluntary extra-role behavior when the anger was inappropriate in light of the followers’ previous efforts (Koning & Van Kleef 2015). Similarly, appropriate expressions of anger by leaders in response to followers’ lack of integrity enhanced perceptions of leader effectiveness by triggering inferences that the leader was addressing unacceptable behavior, whereas inappropriate

expressions of anger in response to lack of competence diminished perceived effectiveness (Wang et al. 2018). The role of personality is exemplified by studies on leadership effectiveness in which participants low on agreeableness (i.e., who attach comparatively little importance to social harmony) rated an angry leader as more effective than a neutral leader, were more motivated by an angry leader, and performed better under an angry leader, whereas participants high on agreeableness (i.e., who value social harmony a lot) showed the opposite pattern (Van Kleef et al. 2010). Finally, regarding culture, in a series of negotiation experiments, European-American participants (who deem expressions of anger relatively appropriate) conceded more to angry than to neutral opponents, whereas Asian-American participants (who deem expressions of anger less appropriate because they value social harmony more) conceded less to angry opponents (Adam et al. 2010).

A third stream of research has begun to address the effects of the intensity of emotional expressions on perceived appropriateness and concomitant behavioral responses. This work reveals curvilinear effects of emotional intensity across diverse domains. In a series of experiments and field studies in a customer service context, intense (rather than moderate) verbal, facial, and vocal expressions of happiness or sadness by service providers were interpreted by customers as inauthentic and inappropriate, leading to reduced trust in the service provider and lower satisfaction with the service and the product (Cheshin et al. 2018). In a negotiation study, high-intensity verbal and nonverbal anger expressions elicited smaller concessions because the expressions were perceived as inappropriate, whereas moderate-intensity anger expressions elicited larger concessions than no-anger ones via inferences of toughness (Adam & Brett 2018). In a field study of basketball teams, moderately intense expressions of anger by coaches during their halftime speeches enhanced subsequent team performance, whereas highly intense expressions of anger undermined performance (Staw et al. 2019).

## KEY INSIGHTS AND IMPLICATIONS

Our review reveals that emotional expressions have notable effects on observers' affect, cognition, and behavior. These effects are manifest across diverse areas of life, from romantic relationships to group decision making, from customer service to conflict management, and from leadership to team sports. The findings support key theoretical notions advanced in the literature. Consistent with emotional contagion theory (Hatfield et al. 1994), numerous studies demonstrate that emotions spread between people. Accumulating evidence casts doubt on the process of primitive emotional contagion but aligns with nonprimitive processes such as social appraisal (Manstead & Fischer 2001, Parkinson & Simons 2009). Consistent with theorizing on emotional intelligence (Salovey & Mayer 1990), evidence shows that the accurate detection of others' emotional expressions and the effective regulation of one's own emotional expressions are pivotal to successful social interactions (Côté 2014, Elfenbein 2007). Finally, our review supports key propositions of EASI theory (Van Kleef 2016) suggesting that emotional expressions influence observers' behaviors through affective reactions and inferential processes, with the potency of each mechanism depending on observers' information processing and the perceived appropriateness of the expressions. Several overarching conclusions and implications follow from our review.

First, whether emotions have positive or negative social consequences depends not on their valence but on the relative potency of the affective and inferential processes they trigger in observers, in conjunction with the observers' momentary goals. For instance, expressions of anger tend to elicit desirable behavioral responses (e.g., cooperation, enhanced performance) when observers are motivated and able to engage in thorough information processing and perceive the expressions as appropriate, because under these circumstances observers' responses are driven predominantly by inferential processes. Conversely, expressions of anger tend to elicit undesirable

responses (e.g., competition, impaired performance) when observers are unmotivated or unable to engage in thorough information processing and/or perceive the expressions as inappropriate, because under these circumstances observers' responses are driven predominantly by (negative) affective reactions. Speaking to the role of observers' goals, expressions of happiness tend to promote affiliation in cooperative situations but invite exploitation in competitive situations. Such contingencies question the usefulness of referring to emotions as positive or negative. We believe it is more fruitful to conceive of emotions in terms of their social signals (e.g., affiliation, dominance, supplication, appeasement), whose behavioral implications differ depending on individual and situational characteristics.

Second, whether emotional expressions are functional depends on how they are employed and perceived. As tempting as it may be to interpret the social effects of emotions as functional, each example of an adaptive effect can be matched with an example of a maladaptive effect. As a general rule, any emotional expression is more likely to be adaptive to the degree that it is perceived as appropriate. This implies that expressers must both understand emotion norms in a given situation and be able to regulate their expressions accordingly. For instance, across contexts and emotions, authentic emotional expressions tend to have more adaptive social consequences than inauthentic emotional expressions, because inauthentic expressions undermine observers' trust (Côté et al. 2013, Krumhuber et al. 2007). Perceivers, in turn, should theoretically both understand the meaning and implications of a particular emotional expression and have the necessary skills to adaptively respond to that expression for it to be functional, although direct evidence for this remains to be obtained.

Third, the findings illustrate that the social effects of emotions can be engendered by different types of verbal and nonverbal expressions. Although few studies have directly compared the social effects of emotional expressions across expressive modalities, comparisons across studies involving different operationalizations of emotional expression indicate that expressions of a particular emotion in a particular situation elicit comparable responses in observers regardless of whether these expressions occur via the face, the voice, the body, words, or symbols. Clearly, the suitability of different expressive modalities depends on the situation. In phone conversations, vocal expressions are naturally more effective than facial or bodily expressions; in email or text messaging, verbal and symbolic expressions are more suitable than facial or bodily expressions; and in face-to-face conversations, any combination of facial, bodily, and verbal cues can get the message across. Such obvious boundary conditions aside, the social signaling value of emotions is similar across expressive modalities. In rare cases in which differential effects were observed, these could be explained in terms of differential perceptions of appropriateness (e.g., the use of smileys being perceived as relatively inappropriate in a work context; Glikson et al. 2018). Differences in perceived appropriateness are also observed, however, between emotions expressed through the same modality, indicating that such differences are not inherent in the expressive modalities but vary with characteristics of the situation and the expression (e.g., authenticity, intensity). All in all, the current evidence suggests that the social effects of emotions are functionally equivalent across expressive modalities (Van Kleef 2016). Moving forward, however, direct within-study comparisons of different expressive modalities would be valuable.

Taken together, these conclusions point to how emotional expressions can be put to practical use. Bearing in mind the above contingencies, people may strategically employ emotional expressions to influence others. This may involve modifying the expressions themselves and/or adding information to influence observers' interpretation of the expressions and generate more favorable outcomes. For instance, anxious individuals can reframe their displays of anxiety as passion (e.g., by saying "This is an issue I feel very passionate about") to elicit more favorable reactions

(Wolf et al. 2016). Emotional expressions are more likely to be instrumental for goal attainment to the degree that they are perceived as authentic, of the right intensity, and generally appropriate in light of the situation. Thus, therapists and managers may encourage clients and employees to express emotions that match the requirements of social interactions and organizational settings so as to enhance their perceived appropriateness and effectiveness.

## CHALLENGES AND FUTURE DIRECTIONS

Although notable regularities in the social effects of emotions emerge from our review, important questions remain. One set of questions pertains to the underlying mechanisms that drive behavioral responses to emotional expressions. Regarding affective reactions, we have seen that classic conceptions of primitive emotional contagion involving automatic mimicry and afferent feedback cannot explain several empirical observations. Alternative processes such as those subsumed under the rubric of nonprimitive emotional contagion (e.g., perspective taking, social appraisal) seem necessary to account for the full spectrum of findings. The question is which process(es) are at work. Direct tests of these mechanisms in different situations await future research. Relatedly, more research is needed to understand when observers feel reciprocal emotions and when they feel complementary emotions.

Regarding inferential processes, it remains unclear exactly how people extract information from others' emotional expressions. Do people deliberately reverse engineer the most plausible appraisals underlying others' emotional expressions? Do they actively retrieve stored emotion knowledge or learned associations from memory? What is the role of more automatic processes such as classical and operant conditioning? Does gleaned information from conditioned emotional expressions require less effortful information processing? The fact that inferential processes are moderated by the depth of information processing indicates that a degree of computation is required, but it is unclear whether this is true for all types of inferences. The complexity of the issue is compounded by findings suggesting that behavioral responses of human infants (Repacholi 1998) and nonhuman primates (Buttelmann et al. 2009) are mediated by some form of inferential processing. Unraveling the mechanics of inferential processing, including how they differ between humans and nonhuman animals and across developmental stages, represents a major challenge for the field.

Other questions pertain to the boundary conditions and moderators of the social effects of emotions. Several factors, such as the expressivity of the expresser, the quality of the relationship between expressers and perceivers, and expressers' motives for conveying certain emotions, have received little or no attention and merit further investigation. Moreover, although the existing research has been conducted in various contexts, it is largely based on data from short-lived interactions amenable to investigation in the laboratory. In real life, social interactions are often embedded in ongoing relationships in which different emotions are expressed at different points in time, and one person's response to another's emotional expression becomes an emotional stimulus in itself. It is unclear how the affective and inferential processes that are elicited by emotional expressions in the moment interact between people and over time to produce behavioral responses. There is some evidence that responses to emotional expressions in short-lived interactions are modulated by the consistency of the expressions (Filipowicz et al. 2011, Rothman 2011, Sinaceur et al. 2013), but how such processes unfold over time remains elusive. Equally unclear is how the social effects of emotions are modulated by the degree to which the expressions are shared, for instance, among members of a group. Previous work has emphasized the potential functionality of the sharedness of emotions within groups (Hatfield et al. 1994, Keltner & Haidt 1999), but the consequences of collective emotional expressions (rather than experiences) await empirical study.

Embeddedness in real-world interactions also implies that everyday emotional expressions must compete for attention with other information. Convergent evidence from laboratory and field studies suggests that people pay attention to and react to emotional expressions in real-world interactions. For example, expressions of passion predict support from observers in both real entrepreneurial pitches and hypothetical scenarios (Jachimowicz et al. 2019). Even so, the degree to which people are motivated and able to keep track of others' emotional expressions in day-to-day situations replete with distractions has yet to be determined. Future research might examine how the social effects of emotions in such noisy situations are shaped by emotional expressivity and emotion perception abilities. Individuals with greater emotional expressivity may be more likely to reach observers who face competing attentional demands. Conversely, individuals with greater emotion perception ability might require less effort to interpret others' emotional expressions and thereby save cognitive energy to process other information. Field research might also inform when and how long emotions should be displayed to exert effects. Along those lines, an investigation of entrepreneurial pitches suggested that expressing positivity is more effective at either the beginning or the end of pitches, especially if these expressions are of moderate length (Jiang et al. 2019). Finally, emotion detection appears to be facilitated when observers have simultaneous access to emotional expressions through various modalities (Bänziger et al. 2009), but exactly how people weigh and integrate such emotional information remains to be uncovered. One question is whether certain modalities are preferentially relied on or processed more quickly than others; another is how information from different modalities is combined when different modalities convey different social signals.

Another lingering question is to what extent the social effects of emotions are biologically versus culturally determined. Although ample research has documented the role of culture in emotion perception, showing a combination of universals and “dialects” (Elfenbein & Ambady 2002), how culture influences the social effects of emotions is poorly understood, as research to date has almost exclusively studied Western samples. Basic behavioral responses (e.g., approach/avoidance) to emotional expressions shown by human adults also occur in human infants and nonhuman primates (Buttelmann et al. 2009, Repacholi 1998, Sorce et al. 1985), suggesting a hard-wired biological basis for such responses. However, rare studies involving cross-cultural comparisons indicate that more situation-specific responses to emotional expressions are modulated by the cultural context, with expressions of anger eliciting more favorable responses from European-American participants (who deem such expressions relatively appropriate) than from Asian-American participants (who deem such expressions relatively inappropriate) (Adam et al. 2010). Furthermore, although few gender effects have emerged in research on the social effects of emotions, those that have been observed reflect stereotypical roles and expectations of women and men that are embedded in broader cultural values and norms (Brescoll & Uhlmann 2008, Lewis 2000, Salerno et al. 2019). Such effects are intimately linked to perceptions of the appropriateness of emotional expressions (Shields 2005), suggesting a parsimonious way to account for the effects of both gender and culture. Still, the question remains of which emotional processes are bound by such social factors and which processes are more generic.

Going forward, we also see a need for further expansion of the repertoire of emotions being studied. A solid body of knowledge has accumulated regarding the social effects of anger, happiness, sadness, and disappointment. Researchers have also begun to address the social effects of other emotions, such as gratitude (Gordon et al. 2012), pride (Lange & Crusius 2015), hope (Cohen-Chen et al. 2019), contempt (Fischer & Roseman 2007, Melwani & Barsade 2011), disgust (Heerdink et al. 2019, Kupfer & Giner-Sorolla 2017), fear (DeCelles et al. 2019), schadenfreude (Lange & Boecker 2019), embarrassment (Feinberg et al. 2012), and guilt and

regret (Van Kleef et al. 2006, Wubben et al. 2009), but additional work is needed. Other common and socially relevant emotions, such as admiration, shame, envy, and compassion, have almost exclusively been investigated from an experiential rather than an expressive perspective. Mapping the interpersonal consequences of expressions of these and other neglected emotions is necessary for a more comprehensive understanding of the social effects of emotions.

In addressing these and other issues, we call for greater methodological diversification and interdisciplinary collaboration. Most studies in this literature are carefully controlled yet contrived laboratory experiments that illuminate causality and pinpoint underlying processes. It is important that experimental approaches be complemented with richer (albeit potentially noisier) methodologies that can be employed across a wider time scale, such as longitudinal experience sampling and field studies (e.g., Totterdell 2000). Such data would also allow for tracking mutual emotional influences between people over time. In addition, and relatedly, deeper insight can be gained through greater interdisciplinary collaboration. For instance, research at the interface of psychology and biology can shed new light on the biological bases underlying the social effects of emotions. Expansion in the areas of political science and communication studies can open new frontiers in our understanding of how emotional expressions can be wielded in the service of deliberate influence attempts, for instance, by using content analysis (e.g., of political speeches). Such data could be combined with big data gathered from social media platforms (e.g., using text scraping) to explore how emotional expressions of politicians, opinion makers, or influencers shape the attitudes and behaviors of followers. Finally, further integration of the insights reviewed here with ongoing efforts in artificial intelligence and robotics can pave the way for the development of a new generation of interfaces that may fundamentally change how humans interact with machines and provide new angles on understanding the social effects of emotions.

## CONCLUSION

Research on the social effects of emotions is flourishing. The topic is being studied from numerous complementary perspectives, and new discoveries are being made at a high pace. At the same time, many questions remain. We hope this review provides an impetus for more research, across disciplinary boundaries, that will further map the social effects of emotions and enrich the scientific understanding of the ways in which emotional expressions regulate our day-to-day lives.

### SUMMARY POINTS

1. Emotional expressions have notable effects on the affect, cognition, and behavior of those who observe these expressions.
2. The effects of emotional expressions on observers' behavioral responses are mediated by observers' affective reactions and inferential processes.
3. The relative potency of affective and inferential processes in shaping behavioral responses to emotional expressions depends on observers' degree of information processing and the perceived appropriateness of the expressions.
4. There is no systematic relationship between the valence of emotional expressions and the favorability of behavioral responses to those expressions. This casts doubt on the usefulness of referring to emotions as positive or negative.
5. The social effects of emotions are qualitatively similar across expressive modalities (face, voice, body, words, symbols).

6. Similarities in behavioral responses to emotional expressions in human adults, human infants, and nonhuman primates suggest a biological basis for the social effects of emotions; cultural differences indicate that these basic effects are modulated by socialization.

## FUTURE ISSUES

1. Which specific affective reactions explain why emotional expressions influence observers' behavioral responses? Do nonprimitive forms of emotional contagion (involving more cognitive processes such as perspective taking and social appraisal) mediate the effects of emotional expressions on observers' behaviors?
2. When and why do observers come to feel reciprocal emotions (the same emotions that they observe) versus complementary emotions (emotions that differ from those expressed but match their social motivational implications in a specific social situation)?
3. How do observers draw inferences from others' emotional expressions about themselves, others, and the situation?
4. How potent are the effects of emotional expressions in real-world interactions? What are the roles of factors such as emotional expressivity, emotion perception ability, and motivation to attend to others' expressions in noisy situations?
5. When and how long do emotions need to be expressed to have effects on others in real social interactions?
6. What are the social effects of less-studied emotions, including pride, embarrassment, shame, guilt, disgust, hope, gratitude, compassion, and awe?

## DISCLOSURE STATEMENT

The authors are not aware of any affiliations, memberships, funding, or financial holdings that might be perceived as affecting the objectivity of this review.

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