

Embarrassment: Its Distinct Form and Appeasement Functions

Dacher Keltner
University of California, Berkeley

Brenda N. Buswell
University of Wisconsin—Madison

The authors address 2 questions about embarrassment. First, Is embarrassment a distinct emotion? The evidence indicates that the antecedents, experience, and display of embarrassment, and to a limited extent its autonomic physiology, are distinct from shame, guilt, and amusement and share the dynamic, temporal characteristics of emotion. Second, What are the theoretical accounts of embarrassment? Three accounts focus on the causes of embarrassment, positing that it follows the loss of self-esteem, concern for others' evaluations, or absence of scripts to guide interactions. A fourth account focuses on the effects of the remedial actions of embarrassment, which correct preceding transgressions. A fifth account focuses on the functional parallels between embarrassment and nonhuman appeasement. The discussion focuses on unanswered questions about embarrassment.

Embarrassment is not an irrational impulse breaking through socially prescribed behavior but part of this orderly behavior itself. (Goffman, 1956, pp. 270–271)

Embarrassment has a checkered history in the social sciences. For certain theorists, embarrassment is woven into the very fabric of harmonious social relations, serving as an emotional mechanism that enables people to maintain the stability of moral communities in the seemingly ordinary interactions of quotidian life (Goffman, 1967; Miller & Leary, 1992; Scheff, 1988). People's experience and display of embarrassment, from this perspective, play a critical role in socialization practices, such as teasing and punishment, the motivation of moral behavior and conformity, the development of the conscience, and the negotiation of social roles and status (Ausubel, 1955; Clark, 1990; Keltner, Young, & Buswell, in press; Kochanska, 1993; Miller, 1996; Miller & Leary, 1992; Scheff, 1988).

Traditional emotion researchers, however, have largely ignored embarrassment. Darwin (1872, pp. 309–346) failed to consider embarrassment in his analysis of the blush.¹ Subsequent theorists have not extensively considered embarrassment in their theorizing or empirical studies (Izard, 1977; Lazarus, 1991; Plutchik, 1984; Roseman, Wiest, & Swartz, 1994; Smith & Ellsworth, 1985; Tomkins, 1963). Theorists have described embarrassment as a less intense, less serious variant of shame (Lewis, 1993; Tomkins, 1963), a form of social anxiety (Schlenker & Leary, 1982), a dejection-related emotion whose prototypical member is sadness (Higgins, 1987; Shaver, Schwartz, Kirson, & O'Connor, 1987), a secondary emotion

(Lewis, Stanger, Sullivan, & Barone, 1991), or a more cognitively complex emotion (e.g., Campos, Barrett, Lamb, Goldsmith, & Stenberg, 1983).

Recently, however, research has begun to illuminate the defining characteristics and functions of the "self-conscious emotions," which include embarrassment, shame, guilt, and pride (Edelmann, 1987, 1990; Keltner, 1995; Lewis, 1993; Miller, 1992, 1996; Miller & Leary, 1992; Miller & Tangney, 1994; Parrott & Smith, 1991; Tangney, 1990, 1991, 1992; Tangney & Fischer, 1995). The emergent study of the self-conscious emotions raises two questions whose answers provide the framework of this article. First, Is embarrassment a distinct emotion? To answer this question, we present the logic that guides the determination of whether an emotion is distinct and then review the evidence relevant to whether the forms of embarrassment—its antecedents, appraisals, experience, nonverbal display, and autonomic physiology—are distinct from other emotions, in particular, shame, guilt, amusement, fear, and sadness. Having ascertained the forms of embarrassment, we then address the second question guiding this review—What accounts for the responses associated with embarrassment? To address this question, we review five accounts that focus on different theoretical questions and aspects of embarrassment. Three accounts primarily focus on the immediate causes of the experience of embarrassment, a fourth focuses on the social effects of embarrassment, and a fifth addresses the functions of embarrassment.

Evidence for Embarrassment as a Distinct Emotion

The search for distinctions among emotions has been a longstanding interest (Darwin, 1872; James, 1884), guiding the study of emotion antecedents and appraisal processes (e.g., Boucher & Brandt, 1981; Lazarus, 1991; Roseman et al., 1994; Smith & Ellsworth, 1985), nonverbal communication (e.g., Ekman, 1984; Ekman, Sorenson, & Friesen, 1969; Izard, 1971),

Dacher Keltner, Department of Psychology, University of California, Berkeley; Brenda N. Buswell, Department of Psychology, University of Wisconsin—Madison.

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Correspondence concerning this article should be addressed to Dacher Keltner, Department of Psychology, University of California, 3210 Tolman Hall, Berkeley, California 94720-1650. Electronic mail may be sent via Internet to keltner@socrates.berkeley.edu.

¹ Darwin did refer to two kinds of shame related to the blush: shame related to moral transgressions and shame related to breaches of etiquette. The second kind of shame seems to correspond to embarrassment.

and central and autonomic nervous system activity (e.g., Cacioppo, Klein, Berntson, & Hatfield, 1993; Davidson, Ekman, Saron, Senulis, & Friesen, 1990; Ekman, Levenson, & Friesen, 1983; James, 1884; Levenson, 1992). Establishing a taxonomy of distinct emotions serves as a basis for theories that explicate emotion and the functions of emotion-related responses (Roseman et al., 1994) and serves as the basis for the study of cross-cultural variation in emotion (Haidt & Keltner, 1997).

The search for distinct emotions, with intellectual precedent in the classical philosophers (Solomon, 1976), was shaped by Darwin (1872), who focused on a limited set of emotions in his book, *The Expression of Emotions in Man and Animals*. Contemporary emotion theorists, some of whom are listed in Table 1, have tended to agree that anger, disgust, distress or sadness, enjoyment or happiness, fear, surprise, and possibly contempt are distinct emotions. With the recent exception of Ekman (1992), these theorists exclude embarrassment from their taxonomies of distinct emotions. This view of embarrassment may have several sources. Evolutionary-oriented theorists who emphasize the continuity between other species's behavior and human emotion (e.g., Darwin, 1872) may not have been convinced that other species demonstrate embarrassment-like behavior. Embarrassment also seems to have different prop-

erties than seemingly "primary" emotions, such as anger or disgust. Embarrassment emerges later in development, involves complex cognitive processes—such as the evaluation of one's behavior from another's perspective—and seems to serve socialized rather than biologically based goals (Campos et al., 1983; Lewis, 1993).

In contrast, lay people rate embarrassment as a clear example of an emotion, even more so than such emotions as contempt and disgust (Shaver et al., 1987). Embarrassment is frequently experienced in daily life (Miller, 1996) and is central to the social life of many cultures (e.g., Abu-Lughod, 1986; Lebra, 1983). Is embarrassment, therefore, a distinct emotion? Or is it somehow different from the emotions more commonly considered distinct, perhaps a variant or subordinate member of a more primary emotion, or a complex blend of other emotions? There is now sufficient evidence to address these related questions.

Criteria for Establishing a Distinct Emotion

To ascertain whether embarrassment is a distinct emotion, we rely on Ekman's (1992) nine characteristics of distinct emotions, which are presented in Table 2. These criteria derive from the widespread assumptions that emotions coordinate the activ-

Table 1
Theorists' List of Distinct Emotions

Emotion	Theorist					
	Ekman (1992)	Izard (1977)	Lazarus (1991)	Roseman et al. (1990)	Smith & Ellsworth (1985)	Tomkins (1984)
Anger	X	X	X	X	X	X
Awe	X ^a					
Boredom					X	
Anxiety			X			
Challenge					X	
Compassion			X			
Contempt	X	X		X	X	X
Disgust	X	X	X	X	X	X
Dislike				X		
Distress				X		X
Embarrassment	X ^a					
Enjoyment						X
Envy			X			
Excitement	X ^a					
Fear	X	X	X	X	X	X
Frustration				X	X	
Guilt	X ^a	X	X	X	X	
Happiness	X	X	X		X	
Hope			X	X	X	
Interest	X ^a	X			X	X
Jealousy			X			
Joy				X		
Love			X	X		
Pain		X				
Pride			X	X	X	
Regret				X		
Relief			X	X		
Sadness	X	X	X	X	X	
Shame	X ^a	X	X	X	X	X
Surprise	X	X		X	X	X

^a Ekman only recently acknowledged that these states *may* be distinct emotions.

ity of different response systems to produce quick, adaptive reactions to threats to personal and social survival (Ekman, 1972, 1992; Frijda, 1986; Izard, 1977; Lazarus, 1991). The first four criteria pertain to whether the different emotions are distinct from one another; thus, the different emotions are believed to have distinct (a) antecedents, (b) experiences and appraisal processes, (c) facial expressions, and (d) physiological responses. Our review focuses on whether, in these channels of response, embarrassment is distinct from shame, which is often considered in the same emotion category as embarrassment (Darwin, 1872; Higgins, 1987; Izard, 1977; Schlenker & Leary, 1982; Tomkins, 1963); amusement, which is believed to occur during embarrassment and like embarrassment involves smiling (Goffman, 1967); guilt; and fear and sadness, which some theoretical accounts imply may resemble embarrassment. The remaining five criteria refer to characteristics that emotions possess, as opposed to other affective states such as moods. Emotions are associated with responses that are (a) quick in onset, (b) brief, (c) coherent, (d) unbidden, and (e) observed in other species. We consider these criteria in addressing whether embarrassment is associated with an emotion-like pattern of responses.

Antecedents of Embarrassment

Theorists of diverse persuasions have proposed that emotions enable humans to respond adaptively to problems related to human survival (Darwin, 1872; Ekman, 1972; Lazarus, 1991; Lutz & White, 1986; Plutchik, 1984; Roseman, Spindel, & Jose, 1990; Tomkins, 1984). These problems or fundamental life tasks are the antecedents of emotion, which trigger specific appraisal and experiential processes. Emotions are believed to be associated with distinct and universal antecedents, appraisals, and experiences (Ekman, 1992).

In studies of the antecedents of embarrassment, participants have (a) described several embarrassing situations, which researchers then classified according to taxonomies of embarrassing situations (e.g., Keltner & Buswell, 1996; Miller, 1992); (b) described one embarrassing situation in detail (e.g., Par-

rott & Smith, 1991); or (c) rated the phenomenological and contextual properties of embarrassing events (Miller & Tangney, 1994; Tangney, Miller, Flicker, & Barlow, 1996). These self-report accounts may only capture lay theories rather than the actual causes and experiences of emotion (Parkinson & Manstead, 1992). Notwithstanding this limitation, several researchers have now examined the antecedents and experience of embarrassment (Buss, 1980; Edelmann, 1987; Gross & Stone, 1964; Miller, 1992; Parrott & Smith, 1991; Sattler, 1965) or compared these aspects of embarrassment with those of shame and guilt (Keltner & Buswell, 1996; Miller & Tangney, 1994; Tangney et al., 1996). Table 3 summarizes the results from these studies, presenting the antecedents, appraisals, and experiences that participants frequently mentioned when describing embarrassment.

The antecedents of embarrassment most typically involve violations of social conventions that increase social exposure. Thus, people commonly report experiencing embarrassment following their own physical pratfalls (e.g., tripping), cognitive shortcomings (e.g., forgetting the name of a new acquaintance), loss of body control (e.g., belching or uncontrolled flatulence), failure to maintain privacy (e.g., having one's feelings disclosed), and awkward social interactions and when they have been teased by others or been the object of undesirable social attention (Edelmann, 1987; Keltner & Buswell, 1996; Miller, 1992; Miller & Tangney, 1994; Sattler, 1966). The results of these antecedent studies confirm the intuitions of early theorists. Darwin (1872) considered one variant of shame, most likely embarrassment, to follow breaches of etiquette. Goffman (1967) proposed that embarrassment follows violations of "ceremonial rules," (p. 54) which he defined as conventionalized means by which people express their public character. The link between embarrassment and public, conventional behavior may account for why embarrassment, both in children and adults, tends to be less intense among family and friends than among strangers and new acquaintances (Buswell & Keltner, 1996; Lewis et al., 1991; MacDonald & Davies, 1983) and between people from different cultures whose norms are less relevant to one another (Harré, 1990).

Although studies reveal considerable overlap in the antecedents of shame and guilt, these two self-conscious emotions follow different transgressions than those of embarrassment. Shame follows the failure to live up to expectations, either one's own or those of significant others, that define the "core self," "ego ideal," or character (Babcock & Sabini, 1990; Lazarus, 1991; Lindsay-Hartz, 1984; Tangney, 1992; Tangney, Marschall, Rosenberg, Barlow, & Wagner, 1992; Tangney et al., 1996). Thus, commonly reported antecedents of shame include failing at an achievement-related task, hurting another's feelings, and failing to act in accordance with personal ideals, for example, as a caring, industrious, or intelligent person. Guilt appears to follow transgressions of moral rules that govern behavior toward others (Tangney, 1992). The common antecedents of guilt, therefore, include lying, cheating, stealing, infidelity, and neglecting personal duties (Ausubel, 1955; Keltner & Buswell, 1996; Lindsay-Hartz, 1984; Tangney, 1992; Tangney et al., 1996). Participants in one study rated the antecedents of shame and guilt to be twice as moral in their connotations as those of

Table 2
Criteria for Establishing Distinct Emotions

Characteristic	Emotion differentiation	
	From one another	From related phenomena
Automatic appraisal	X	
Brief duration		X
Coherent response		X
Observed in other species		X
Quick onset		X
Specific physiology	X	
Unbidden		X
Universal antecedents	X	
Universal facial expression	X	

Note. From Table 1 of "An Argument for Basic Emotions," by P. Ekman, *Cognition and Emotion*, 1992, Vol. 6, p. 75. Copyright 1992 by Erlbaum (UK) Taylor & Francis, Hove, UK. Adapted with permission.

Table 3
Summary of Studies of the Antecedents, Appraisals, and Experience of Embarrassment

Antecedents ^a	Salient appraisals	Experience
Individual behavior	Others' evaluation	Funny
Physical ineptness	Lack of control	Awkward
Cognitive shortcomings	Temporary cause	Foolish
Loss of control	Low effort	Nervous, worried
Failures of privacy regulation	Uncertainty	Surprised
Interactive behavior		Self-conscious
Loss of script		Mild, brief
Knowledge of transgression		Abrupt
Others in group transgress		Hiding, withdrawal
Audience provocation		Others' laughter
Others publicize transgressions		
Others tease		
Vicarious embarrassment		

^a From Table 1 of "The Nature and Severity of Self-Reported Embarrassing Circumstances," by R. S. Miller, *Personality and Social Psychology Bulletin*, 1992, Vol. 18, p. 193. Copyright 1992 by Sage. Adapted with permission.

embarrassment (Tangney et al., 1996), which is consistent with previous speculations (e.g., Goffman, 1967; Harré, 1990). Participants in another study listed very few of the same antecedents for embarrassment and shame (9% overlap) or embarrassment and guilt (5% overlap; Keltner & Buswell, 1996).

One study found that the social contexts of embarrassment, shame, and guilt also differ (Tangney et al., 1996). Participants reported that embarrassment occurred in front of larger audiences than did shame and guilt (on average 6.8 people, compared with about 2.0 people for the other emotions). Although participants reported that all three emotions occurred most frequently around friends, participants reported experiencing embarrassment more frequently around strangers and acquaintances. Finally, participants reported that embarrassment was less likely to occur when they were alone (2.2% of responses) compared with shame (18.2%) and guilt (10.4%). Embarrassment, more so than shame and guilt, occurs during public, impersonal interactions and seems to implicate the "outer" or public self rather than the "inner" or private self (e.g., Goffman, 1967; Lebra, 1983).

Are these antecedents of embarrassment universal, suggesting that across cultures embarrassment may enable humans to respond adaptively to similar problems? To address this issue, Haidt and Keltner (1997) gave participants in rural India and the United States validated photographs of facial displays of emotion, including those of embarrassment, shame, amusement, fear, and sadness (a facial display of guilt has yet to be identified). After viewing each photo, participants were asked to generate situations that "would make the person show the expression in the photo." Although people from India and the United States differ in their religion, social structure, and moral concepts (Shweder, 1993), members of both cultures referred to similar antecedents to explain displays of embarrassment (violations of

social conventions that involved social evaluation), and these antecedents differed from those that participants generated to explain the displays of shame (serious moral transgressions), amusement-related laughter (jokes or interactions with friends), fear (physical danger), and sadness (loss of a loved one).

In another relevant study, Iranian (Ages 5–13) and Japanese (Ages 9–12) children rated how embarrassing 92 different embarrassing and shameful situations were (Hashimoto & Shimizu, 1988).² In these two cultures, children classified the causes of embarrassment into similar categories. Factor analysis of children's ratings of the situations uncovered four clusters of antecedents common to the two cultures that revolved around unacceptable public behavior and undesired social exposure. These four clusters of antecedents included having an inferior self-image, being stared at, being bodily undressed, and being criticized. Whereas the children from the two cultures conceptualized the causes of embarrassment and shame in similar ways, they did differ in their intensity ratings for about half of the situations.

Although researchers have yet to compare the antecedents of embarrassment with those of amusement, fear, and sadness, relevant theory points to clear differences. Incongruous, relatively unimportant, and playful circumstances are the antecedents of amusement (Ruch, 1993), which differ from the violations of social conventions that produce embarrassment that are important to the individual and group. Fear occurs when the individual faces an immediate, concrete, and overwhelming physical danger, and sadness occurs following irrevocable loss (Lazarus, 1991). The antecedents of these two emotions both differ from the antecedents of embarrassment.

Patterns of Appraisals and Experience Associated With Embarrassment

Table 3 also presents the defining appraisals and experiential properties of embarrassment. In terms of the traditionally studied dimensions of appraisal (e.g., Smith & Ellsworth, 1985), individuals in embarrassing situations have indicated the acute sense of others' evaluations, the sense that they had little control over and personal responsibility for the event—which seems more accidental and the product of temporary causes than the outcome of personal, stable intentions (Tangney et al., 1996)—and high levels of uncertainty as to how to act (Parrott & Smith, 1991). Additionally, embarrassment and shame relate to attributions of low ability, whereas guilt relates to attributions of low effort (J. Brown & Weiner, 1984).

The direct comparisons of the appraisals and experiences of embarrassment, shame, and guilt are few, but again we find consistent differences among these self-conscious emotions (Miller & Tangney, 1994; Mosher & White, 1981; Tangney et al., 1996). In a first study, participants recalled three embarrassing events and three shame-inducing events. After vividly imagining those experiences, they sorted 56 statements relevant to self-conscious emotions according to their similarity to shame or

² The authors of this study did not differentiate between the embarrassing and shameful situations.

embarrassment (Miller & Tangney, 1994). For 39 of 56 statements, participants reliably identified the descriptor as more characteristic of embarrassment or shame. In a second study, participants rated their recalled experiences of embarrassment, shame, and guilt on 31 items that captured different dimensions of the experience of the self-conscious emotions (Tangney et al., 1996). Participants' ratings of embarrassment differed statistically from those of shame for 71% of the items and from those of guilt for 77% of the items.

Across these two studies, participants reported that during the experience of embarrassment, they felt funny, awkward, foolish, nervous, surprised, and self-conscious and the pronounced inclination to laugh, hide, and withdraw. In contrast to the brief, light-hearted, and mild experience of embarrassment, participants reported that the experience of shame was defined by the sense of being a bad immoral person, long-lasting anger and disgust at the self, the feeling of isolation from others, and the inclination to apologize. Participants' reported experiences of embarrassment and shame involved certain similarities, including feeling inept, being seen in an undesirable light, being overcome by the expression of the emotion, being physically small and inferior to others, experiencing self-blame, and desiring to hide. These similarities may account for why people reported that some experiences of shame followed embarrassing events (8% of the reported shame antecedents in Tangney, 1992). In various studies, participants reported that guilt was defined by strong feelings of empathy and the awareness of others' feelings; by the motivation to alleviate that distress through action, confession, and apology; and, compared with shame and embarrassment, by less self-consciousness and feelings of inferiority (Baumeister, Stillwell, & Heatherton, 1994; Tangney, 1992; Tangney et al., 1996; Wicker, Payne, & Morgan, 1983).

In a related study, participants imagined themselves in embarrassing and shame-inducing situations and then rated their experiences on the 30-item Differential Emotion Scale, which captures the experience of 10 emotions (Mosher & White, 1981). Two findings supported the claim that the experiences of embarrassment and shame differ. First, participants' self-report profiles for the embarrassment and shame situations were uncorrelated (see also Babcock & Sabini, 1990). Second, participants reported greater embarrassment and surprise for the embarrassing situations and greater shame and negative emotion (e.g., anger, contempt, disgust) for the shame-inducing situations.

The awareness of other people's actions and emotions also differentiates embarrassment from shame and guilt (e.g., Cupach & Metts, 1990; Edelman & Iwawaki, 1987; Miller & Tangney, 1994; Tangney et al., 1996). Embarrassment is linked to others' laughter, which may be part of a concerted effort to discount the transgression. Shame is linked to others' anger and disgust, which may relate to the devastating sense of personal incompetence of shame. Finally, guilt is linked to others' pain, which is the likely outcome of an individual's harmful action toward others—a common cause of guilt.

Nonverbal Display of Embarrassment

Studies of facial expressions of emotion have been motivated by the assumption that each emotion is associated with a distinct

pattern of nonverbal behavior that communicates the individual's emotion and likely action to others (Darwin, 1872; Ekman, 1972, 1993; Izard, 1971). In these studies, researchers have focused on anger, contempt, disgust, happiness, fear, sadness, surprise, and—on occasion—shame (Ekman, 1972; Ekman et al., 1969; Izard, 1971). Researchers have equated the nonverbal display of embarrassment to that of shame (Izard, 1977; Tomkins, 1963) or to a chaotic, disorganized fluster (Goffman, 1967; Silver, Sabini, & Parrott, 1987), implying that it does not unfold in a coherent fashion as do the displays of other emotions (Ekman, 1992).

Laboratory studies and naturalistic observations have found that embarrassment is associated with gaze aversion; shifting eye positions; speech disturbances; face touches; a "nervous, silly smile"; and rigid, slouched posture (Asendorpf, 1990; Edelman & Hampson, 1979, 1981a; Eibl-Eibesfeldt, 1989; Goffman, 1967; Heckhausen, 1984; Lewis, Alessandri, & Sullivan, 1992; Modigliani, 1971; Stipek, Recchia, & McClintic, 1992). The blush, which people often report experiencing during embarrassment (Edelman, 1987), is claimed to also occur during shame and anger (Leary, Britt, Cutlip, & Templeton, 1992; Lewis, 1993) and, therefore, does not uniquely signal embarrassment. These findings and observations fail to establish whether embarrassment, like the other distinct emotions, (a) possesses unique facial actions; (b) unfolds in a coherent, brief fashion; and (c) is accurately identified by observers. To find answers to these questions, researchers have carried out component studies, which identify the nonverbal behaviors associated with the experience of embarrassment, and judgment studies, which determine whether observers can reliably differentiate the embarrassment display from other emotion displays.

A first component study compared the nonverbal behavior of participants who had reported experiencing either embarrassment or amusement while posing an awkwardly achieved, funny looking facial expression during a videotaping session (Keltner, 1995, Study 1). Participants' behavior was coded with the facial action coding system (Ekman & Friesen, 1976, 1978), which identifies all visible facial muscle actions. Figure 1 pres-



Figure 1. A prototypical embarrassment display.

ents a posed version of the prototypical embarrassment display, and Figure 2 represents how this display typically unfolds.

The embarrassment display unfolds in the following reliable sequence: gaze aversion; a smile control, which is a lower facial action that potentially inhibits the smile; a non-Duchenne smile, which only involves the zygomatic major muscle action that pulls the corners of the lips upward; a second smile control; head movements down; and then face touching, which occurred about 25% of the time. Three kinds of evidence indicate that the embarrassment display is distinct. First, certain nonverbal actions, including gaze aversion, smile controls, and head movements down, differentiate embarrassment from amusement and account for the oft-noted self-conscious and silly quality of the embarrassment display (Goffman, 1967; Miller & Leary, 1992). Second, the embarrassment display unfolds in a different temporal order than that of amusement: Most notably, the first action is gaze down for embarrassment and a smile for amusement, which is consistent with other studies (Asendorpf, 1990). Third, whereas participants' self-reports of embarrassment were correlated with increased gaze down and smile controls, their self-

reports of amusement were correlated with increased smile intensity.

Researchers have documented a similar pattern of gaze aversion, smiling, and face touching as the display of embarrassment in young children, starting at about 18 months of age (Lewis et al., 1991; Lewis, Sullivan, Stanger, & Weiss, 1989). In one study, 2-year-olds displayed this embarrassment display when they danced in front of others and when they were overpraised. In contrast, when these same 2-year-olds were approached by a stranger, they displayed facial expressions of wariness, defined by an attentive, somber look and inhibition (Lewis et al., 1991, Study 2). Fearful and embarrassing situations appear to evoke different nonverbal displays early in life. Similar to adults who experienced more embarrassment around strangers than familiar individuals (e.g., MacDonald & Davies, 1983), young children were more likely to display embarrassment when dancing in front of a stranger than their mother (Lewis et al., 1991).

People's descriptions of embarrassment also indicate that its nonverbal display is distinct. Across cultures, people commonly report gaze aversion during embarrassment and smiling rather

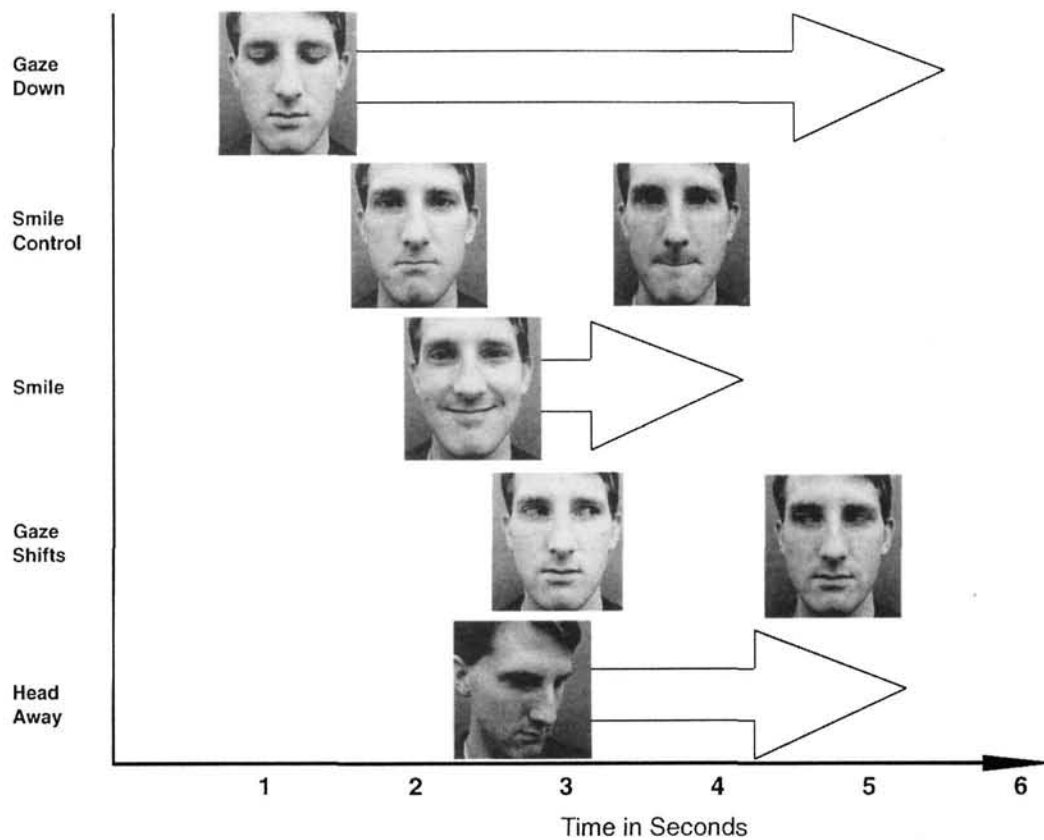


Figure 2. Representation of the components of a prototypical embarrassment response. This prototypical embarrassment display was created by calculating the mean onset and offset times of the actions shown by at least 50% of embarrassed participants. The mean duration of each action is equal to the interval beginning with the left-most edge of the photograph and ending with the end of the arrow. From Figure 1 of "The Signs of Appeasement: Evidence for the Distinct Displays of Embarrassment, Amusement, and Shame," by D. Keltner, *Journal of Personality and Social Psychology*, 1995, Vol. 68, p. 445. Copyright 1995 by the American Psychological Association. Adapted with permission.

than laughing, which is more typically associated with amusement (Edelmann et al., 1987; Edelmann & Iwawaki, 1987). People also overwhelmingly report smiling during embarrassment but not shame (e.g., Miller & Tangney, 1994), suggesting that the self-conscious smile of embarrassment is distinct from the shame display.

These component studies have largely focused on identifying a prototypical embarrassment display, which raises the question of how the embarrassment display varies across contexts, individuals, and cultures. For example, across cultures, people report that embarrassment is associated with certain behaviors, such as the blush or smiling, with different frequencies (Edelmann et al., 1987). To gain purchase on this problem, we have examined the constants and variation of the embarrassment display observed in three different contexts: following overpraise, while watching someone else become embarrassed, and following a breach of privacy (Buswell & Keltner, 1996). In all three contexts, participants exhibited the prototypical features of the embarrassment display, including gaze down, a smile and smile control, head movements away and down, and face touching, all of which were observed within a 5-s period. Across the three contexts, participants' gaze down latency, smile controls, and face touching did not vary, suggesting that these behaviors may be the "theme" of the embarrassment display (Ekman, 1992) and are less likely to vary across cultures and individuals. In contrast, participants' smiles were more intense following overpraise, and their head and gaze movements down were more intense following the breach of privacy. These components of the embarrassment display may vary according to the social significance the individual or culture attaches to embarrassment. Consistent with these speculations, the British participants reported smiling more frequently during embarrassment than did the Japanese, who reported the experience of embarrassment to be more intense and likely to involve others' criticisms (Edelmann & Iwawaki, 1987).

Observers' Judgments of Embarrassment Displays

Can observers accurately identify the embarrassment display? Certain emotions, such as guilt, may be marked by a distinct pattern of nonverbal behaviors that observers fail to reliably identify (Ekman, 1993). Embarrassment may fall into this class of emotions, given the pronounced interest people have in hiding their embarrassment from others (e.g., Edelmann & Hampson, 1981b; Goffman, 1967; Tangney et al., 1996). Several judgment studies—which we summarize in Table 4—however, suggest otherwise. In response to critiques of traditional judgment studies (Russell, 1991, 1994), we presented still photographs of posed embarrassment displays, much like that presented in Figure 1, and videotapes of spontaneous displays. We also gathered both free response and forced-choice data from observers. Across studies, observers accurately identified spontaneous embarrassment displays (Keltner, 1995) and still photographs of embarrassment both in the United States (Keltner & Buswell, 1996) and rural India (Haidt & Keltner, 1997). Observers appeared to judge the array of expressions according to a prototype of the embarrassment display: Specifically, their accuracy was strongly correlated with the number of signs of embarrassment

in the display, peaking at 92% when the prototypical display was presented (Keltner, 1995, Study 2). Across studies, observers identified shame, represented as gaze and head movements down, with above chance accuracy; but they infrequently confused shame and embarrassment with one another (approximately 5% of the time across studies), contradicting claims that the two emotions share the same display (Izard, 1977; Tomkins, 1963). The most common secondary responses to the shame display were disgust, guilt, and sadness. In a recent study, observers demonstrated considerable consensus in their judgments of other individuals' spontaneous displays of embarrassment in the context of ongoing social interactions (Marcus, Wilson, & Miller, 1996).

Research in India has also identified two voluntary, emblematic displays of embarrassment (Haidt & Keltner, 1997). First, observers frequently attributed embarrassment to a person covering his or her eyes with his or her hand, although they just as frequently identified this display as shame. Second, observers identified the tongue bite—a display thought to signal embarrassment and related emotions in southeast Asia (La Barre, 1947)—as embarrassment in India but not in the United States. Culturally specific displays of emotion may be voluntarily produced.

The Autonomic Physiology of Embarrassment

No aspect of embarrassment has received more widespread attention yet so little direct empirical study as the blush. People commonly report that they blush during embarrassment, ranging from 21% of Spanish participants (Edelmann, 1990) to 92% of U.S. students (Miller & Tangney, 1994). Scholars have described the *blush* as a sign of moral character (Burgess, 1839; Frank, 1988), displaced erotic desires that "phallicize" the face (Bergler, 1944), the consequence of undesired social attention (Leary et al., 1992) or social attention to public appearance (Darwin, 1872), an appeasement gesture (Castelfranchi & Poggi, 1990), and hell by the poet Keats (Ricks, 1974), which certainly accords with the unpleasant discomfort associated with blushing.

The blush involves the spontaneous reddening of the face, ears, neck, and upper chest and is produced by increases in blood volume in the subcutaneous surface capillaries in those regions (Cutlip & Leary, 1993; Leary et al., 1992). Whereas the blush is socially produced, the *flush* is defined as a nonsocial response that is often associated with physical exertion, temperature changes, or alcohol consumption (Leary et al., 1992). Two questions about the blush are germane to this review. First, Is the blush the primary nonverbal signal of embarrassment (e.g., Buss, 1980; Castelfranchi & Poggi, 1990; Darwin, 1872)? We suspect not. Embarrassment, as we have seen, is marked by a pattern of gaze activity and facial and postural behaviors that signals embarrassment independently of the blush within 5 s of the embarrassing event (Keltner, 1995). The blush, in contrast, reaches its peak about 15 to 20 s following the embarrassing event (Shearn, Bergman, Hill, Abel, & Hinds, 1990) and, therefore, becomes most visible after embarrassment can be identified by observers. Additionally, parents have reported little blushing in their young children (Buss, Iscoe, & Buss, 1979), whereas

Table 4
Review of Judgment Studies of Embarrassment

Study	Target emotions	Stimuli	Format	Accuracy (%)
Keltner (1995, Study 1)	AM, EM	Spontaneous	Forced choice	61
Keltner (1995, Study 2-4)	AM, EM	Spontaneous	Free response	59
Keltner (1995, Study 5)	AM, AN, DI, EM, HA, SH	Spontaneous	Forced choice	53
Keltner & Buswell (1996)	AM, AN, AW, CO, DI, EM, FE, HA, PA, SA, SH, SU, SY	Still photos	Forced choice	53
Haidt & Keltner (1997)	AM, AN, CO, DI, EM, FE, HA, PA, SA, SH, SU, SY	Still photos	Forced choice	55

Note. AM = amusement; AN = anger; AW = awe; CO = contempt; DI = disgust; EM = embarrassment; FE = fear; HA = happiness; PA = pain; SA = sadness; SH = shame; SU = surprise; SY = sympathy.

the nonverbal display of embarrassment is commonly observed in children as young as 18 months of age (Lewis et al., 1991).

Second, Is the autonomic response of embarrassment, which includes the blush, distinct from that of other emotions? Although people reported experiencing embarrassment without blushing and blushing in the absence of embarrassment—which calls into question the necessary association between the two (Leary et al., 1992)—empirical studies of the blush suggest that the autonomic response of embarrassment may be distinct from those of related emotions. In a study that directly examined the blush, participants' cheek blood flow and temperature, finger temperature, and skin conductance were recorded in two conditions. In a standard embarrassment condition, the participant and four confederates watched a videotape of the participant singing "The Star Spangled Banner." In a condition that elicited heightened arousal and most likely fear, the participant and confederates watched the frightening shower scene from Alfred Hitchcock's movie *Psycho* (Shearn et al., 1990). Participants' cheek blood flow, cheek skin temperature, and finger skin conductance increased more while they and others watched themselves singing than while they watched the frightening film clip. These autonomic correlates of the blush have been replicated (Shearn, Bergman, Hill, Abel, & Hinds, 1992). Additionally, measures of cheek coloration and temperature were uncorrelated while participants watched themselves singing but were correlated while they watched the frightening film clip. Researchers have argued that these different patterns of correlations indicate that the blush may be controlled by different neural pathways and cortical regions than those that control the autonomic response of fear (Leary et al., 1992; Shearn et al., 1990).³

In a second study, participants' heart rate and skin conductance were monitored while they anticipated doing an embarrassing task (i.e., suck on a pacifier; Buck & Parke, 1972). In this study and in subsequent research (Leary, Rejeski, & Britt, 1990; Leary, Rejeski, Britt, & Smith, 1994), embarrassment was associated with reduced heart rate, which may be the product of inhibited sympathetic and increased parasympathetic nervous system activity (Berne & Levy, 1988). The heart rate deceleration of embarrassment is distinct from the elevated heart rate of amusement (Ruch, 1993) and fear and sadness (Levenson, Ekman, & Friesen, 1990). Researchers have yet to deter-

mine whether the blush response and heart rate deceleration associated with embarrassment are distinct from the autonomic responses of shame, although people overwhelmingly reported that blushing is more typical of embarrassment (92%) than of shame (8%; Miller & Tangney, 1994).

Characteristics of Other Emotions Possessed by Embarrassment

The preceding evidence indicates that the responses associated with embarrassment are distinct from those of related emotions. Do these embarrassment-related responses possess the characteristics, as presented in Table 2, commonly attributed to other emotions? First, Is embarrassment quick in onset and brief in duration? Indeed, the facial display of embarrassment was marked by a quick onset, beginning about 0.5 s following the event, and of a brief duration, typically lasting like other facial expressions of emotion about 3.0–5.0 s (Keltner, 1995). The blush was also quite brief, reaching its peak about 15.0–20.0 s following the embarrassing event (Shearn et al., 1992).

Although the experience and actions of embarrassment are marked by confusion and uncertainty (e.g., Parrott & Smith, 1991; Tangney et al., 1996), evidence also indicates that the responses of embarrassment are coherent or intercorrelated. For example, self-reports of embarrassment were correlated with the nonverbal actions of the embarrassment display (Keltner, 1995). The embarrassment display also unfolded in a reliable sequence in which the smile controls minimized the visibility of the smile.

The claim that emotions are unbidden and not under voluntary control derives from distinctions drawn between spontaneous and intentionally produced displays of emotion (e.g., Ekman, 1993). The evidence that we have reviewed indicates that people

³ Although there is almost no evidence relevant to the central nervous system activity associated with embarrassment, one case study found that possible discharges in the medial aspect of the right frontal lobe were associated with pronounced feelings of embarrassment (Devinsky, Hafler, & Victor, 1982). More interesting, initial gaze activity and head movements during embarrassment are to the left (Keltner, 1995), also suggestive of right-hemispheric activity.

reported that the experience of embarrassment seems sudden and out of their control (Tangney et al., 1996). Several theorists have claimed that the blush seems to be unbidden and not under voluntary control (Leary et al., 1992).

Finally, beginning with Darwin (1872), evolutionary theorists have proposed that human facial expressions of emotion, (e.g., laughter or smiling) evolved from the displays of other species, such as the open-mouthed play face or fear grimace observed in nonhuman primates (Darwin, 1872; Ekman, 1992; Izard, 1977; Redican, 1982; Van Hooff, 1972). Darwin did not apply this argument to the blush, which he regarded as a signal unique to humans (for a discussion, see Keltner et al., in press). Do nonhuman species demonstrate embarrassment-like behavior? To answer this question, we have elected to compare human embarrassment with other species's appeasement gestures because of the suggested appeasement functions of the embarrassment display (Castelfranchi & Poggi, 1990; Keltner, 1995; Miller & Leary, 1992). In Table 5, we summarize some of the behaviors that comprise appeasement displays in other species, which were observed in contexts in which one organism attempted to reduce the aggression of another. Nonhuman appeasement displays, similar to human embarrassment, involve gaze aversion, smiling behavior, head movements down (which displays the neck), reduced physical size (which is the outcome of the shoulder shrugging and head movement down seen in human embarrassment), and even self-touching or grooming. Embarrassment, like other emotions, may have its origins in a behavioral system of other species, namely, appeasement.

Summary of Descriptive Evidence: Embarrassment as a Distinct Emotion

The research that we have reviewed leads us to conclude that embarrassment is a distinct emotion. Embarrassment is associated with violations of social conventions and the heightened concerns of social exposure and evaluation, which differ from the antecedents, appraisals, and experience of shame, guilt, amusement, fear, and sadness. The embarrassment display is distinct from those of fear, sadness, amusement, and shame, which is contrary to initial claims (Goffman, 1956; Izard, 1977). The blush response and heart rate deceleration of embarrassment are distinct from the heightened sympathetic nervous system activity of amusement and fear, although empirical evidence is still needed to determine whether embarrassment and shame have distinct autonomic responses. Across these studies, the responses of embarrassment were shown to be quick in onset, brief, coherent, and unbidden, and the embarrassment display was comprised of behaviors observed in other species' appeasement displays. In summary, there is as good evidence to claim that embarrassment is a distinct emotion as there is for the other emotions that are consistently regarded as distinct.

These findings raise several questions. Is embarrassment qualitatively distinct from shame or simply a milder version of shame (e.g., Lewis, 1993)? Clearly, as our review indicates, embarrassment and shame are similar in important ways. Nevertheless, although both are self-conscious emotions, embarrassment and shame follow violations of different rules, namely, conventions versus rules of a moral nature (e.g., Turiel, 1983), and their

displays are distinct and elicit different judgments and emotions in observers, namely, amusement and sympathy, respectively (Keltner et al., in press). Additionally, when differences in intensity between embarrassment and shame are controlled for, many of the distinctions in their antecedents and experience persist (Tangney et al., 1996). In an ensuing section, we speculate about the theoretical significance of the differences between embarrassment and shame.

What implications do the findings that we have reviewed have for the field of emotion? We believe that the study of embarrassment points to new aspects of emotion requiring integration into established theory. Theories of emotion must account for the origins, characteristics, and functions of embarrassment as well as certain response systems, such as gaze activity, postural behavior, face touching, and the blush, which have clear emotional significance but have received relatively little attention. The study of embarrassment brings into focus the need for emotion theory to address how elements of the social context, such as the status, intimacy, and responses of others, influence emotion and the principles that govern the relations between individuals' emotions (Barrett & Campos, 1987; Clark, 1990).

Finally, How might one account for the experience, facial display, and physiology of embarrassment? What are the immediate causes of embarrassment-related responses? What are the effects of embarrassment on the social environment? Does embarrassment serve any functions? In the section that follows, we review the accounts of embarrassment that attempt to offer answers to these questions by focusing on the causes, effects, and functions of embarrassment.

Accounts of Embarrassment

Theories of emotion focus on different questions (e.g., What are the immediate causes, effects, and functions of emotions?), elements of emotion (e.g., What are the causes, experience, display, and physiology of emotions?), and levels of analysis (e.g., How does emotion operate at the level of the individual, relationship, and society or culture?; Averill, 1992; Calhoun & Solomon, 1984). The same is true of the different accounts of embarrassment (for reviews, see Miller, 1996). Three accounts primarily focus on the *causes* of embarrassment, addressing what appraisals produce the experience of embarrassment (Leary et al., 1992; Miller, 1996; Miller & Leary, 1992; Parrott, Sabini, & Silver, 1988; Parrott & Smith, 1991). These accounts have generated studies linking specific appraisals to the momentary experience of embarrassment and traitlike proneness to embarrassment. A fourth account focuses on the *effects* of embarrassment, addressing the actions that occur during embarrassment and the social consequences of those actions (Cupach & Metts, 1990; Goffman, 1967). This account has generated studies of the remedial processes by which embarrassed individuals correct their social transgressions. A fifth account focuses on the *functions* of embarrassment, addressing in the distal, evolutionary sense why humans experience embarrassment. This fifth account provides a framework for considering how human embarrassment originates in nonhuman appeasement processes (Keltner, 1995; Miller & Leary, 1992). In

Table 5
Appeasement Behavior in Other Species

Channel of behavior	Species		
	Primates	Rodents	Other
Gaze			
Avoidance	Primates, ¹⁹ rhesus ²⁰		Wolves, ²⁶ elephant seal ³³
Seeking	Gorilla ^{21,22}		
Facial			
Smile-grimace (bared teeth, lip retraction)	Macaques, ^{12,13,14,25} baboons, ^{23,39,40} rhesus, ^{14,18} bonobos, ¹⁵ chimpanzees ^{15,16}		
Lip smacking	Rhesus ¹⁷		
Head			
Turned			Pig, ⁹ booby ³⁵
Lowered			Rabbits, ⁶ mule deer, ²⁴ wolves, ²⁶ cowbirds, ³² booby, ³⁵ raven ³⁷
Nodding			Pigeons, ³¹ doves, ³¹ teal, ³⁴ loons ³⁸
Postural			
Submissive posture (lowering, contraction)	Macaques, ¹² baboons ^{23,39,40}	Wistar rat, ² rat ¹²	Rabbits, ^{5,6} crayfish, ¹⁰ wolf, ²⁸ Japanese quail, ³⁰ elephant seal, ³³ salamander ³⁶
On back		Wistar rats, ² Swiss mice, ³ muroid rodent ⁴	Wolf, ^{27,28} cats ²⁹
Freezing		Wistar rats, ¹ Swiss mice, ³ muroid rodent ⁴	Cowbirds ³²
Self-grooming			Rabbits ⁵
Vocalizations	Macaques, ^{12,13,20} chimpanzees, ¹⁴ bonobos, ¹⁵ baboons ⁴⁰	Muroid rodent, ⁴ rat ¹²	Gray opossum, ⁸ elephant seal, ³³ raven ³⁷
Other			
Ears			
Back			Rabbits ⁶
Lowered			Wolves ²⁶
Tail			
Raised	Baboons ²³	Muroid rodent, ⁴ golden hamster ⁷	
Lowered			Crayfish, ^{10,11} wolves ²⁶
Grooming (others)	Primates, ¹⁴ macaques ²⁰		

¹ Swanson (1990). ² Fernandez-Espejo & Mir (1990). ³ Kudryavtseva (1991). ⁴ Adams (1980). ⁵ Farabollini (1987). ⁶ Albonetti et al. (1990). ⁷ Pellis & Pellis (1993). ⁸ Fadem (1989). ⁹ Jensen & Wood-Gush (1984). ¹⁰ Figler et al. (1995). ¹¹ Ameyaw-Akumfi & Hazlett (1975). ¹² Adams (1981). ¹³ Bernstein et al. (1983). ¹⁴ de Waal (1986). ¹⁵ de Waal (1989). ¹⁶ van Hooff (1972). ¹⁷ de Waal & Yoshihara (1983). ¹⁸ de Waal & Luttrell (1985). ¹⁹ Redican (1975). ²⁰ de Waal & Ren (1988). ²¹ Yamagiwa (1992). ²² Yamagiwa (1987). ²³ Silk (1987). ²⁴ Koutnik (1980). ²⁵ Preuschoft (1992). ²⁶ Fox (1973). ²⁷ Schenkel (1967). ²⁸ Mech (1970). ²⁹ Feldman (1994). ³⁰ Ramenofsky (1984). ³¹ Wosegien & Lamprecht (1989). ³² Rothstein (1980). ³³ Sandegren (1976). ³⁴ Laurie-Ahlberg & McKinney (1979). ³⁵ Drummond & Osorno (1992). ³⁶ Jaeger et al. (1986). ³⁷ Heinrich (1989). ³⁸ Rummel & Goetzinger (1975). ³⁹ Kummer (1968). ⁴⁰ Leresche (1976).

the second half of this review, we examine the origins and tenets of these five accounts of embarrassment, the research they each have inspired, and relevant conceptual and empirical similarities and distinctions. Although these accounts answer different questions with different kinds of evidence, they converge on certain essential characteristics of embarrassment.

The Loss of Self-Esteem Account of Embarrassment

According to the loss of self-esteem account, individuals feel embarrassment when they believe they have failed to act in accordance with personal standards (Edelmann, 1987; Modigliani, 1968, 1971). Embarrassment is experienced as a transient state of depressed self-esteem and acute disappointment with the self.

Advocates of the loss of self-esteem account have posited that embarrassment follows the failure to live up to personal rather than universal standards (Babcock, 1988) or a loss in situational self-esteem (Modigliani, 1968). The feelings of inefficacy, smallness, and dejection associated with embarrassment (e.g., Tangney et al., 1996) certainly accord with the loss of self-esteem account, as do many of the submissive behaviors (e.g., gaze aversion, head movements down) and antecedents of embarrassment that entail a momentary loss of self-esteem. The tendency for individuals in submissive roles to report, display, and be judged as experiencing more intense embarrassment (Algoe & Keltner, 1996; Clark, 1990; Keltner, 1995; Keltner, Young, Oemig, Heerey, & Monarch, 1997; Miller, 1995) also attests to the relationship between embarrassment and reduced self-esteem.

One set of studies has tested the proposition, central to one version of the loss of self-esteem account, that embarrassment follows violations of *persona*, or personal conceptions of the self (e.g., as an avid reader or skilled folk dancer), whereas shame follows violations of conceptions of shared, objective *ideals* of a worthy person (Babcock & Sabini, 1990). Participants imagined themselves violating a *persona* (e.g., tripping or botching a class performance) or an *ideal* (e.g., failing to keep a promise or attending to another in need). Participants then rated the embarrassment and shame that they would feel following the violations of these presumably distinct standards. Participants reported greater embarrassment associated with violations of *persona* and greater shame associated with violations of *ideals*. This finding lends support to this loss of self-esteem account as well as the claim that the antecedents of embarrassment are distinct from and less moral than those of shame (Tangney et al., 1996).

Notwithstanding these findings, several conceptual problems undermine the legitimacy of the loss of self-esteem account (for a summary, see Miller, 1996). Certain antecedents of embarrassment do not involve rule violations, such as vicarious embarrassment and, in Japan, surface *haji*, which is embarrassment at simply being exposed to others (Lebra, 1983). Other antecedents of embarrassment have positive implications for the self, including public praise and contexts in which the self is the object of favorable attention (Miller, 1992; Parrott & Smith, 1991). The finding that people rarely experience embarrassment when they are alone (2.2% of reported experiences in Tangney et al., 1996) suggests that other appraisal processes rather than the simple comparison of one's actions with personal standards produce embarrassment (Miller, 1996). Finally, certain versions of the loss of self-esteem account equate embarrassment with shame (e.g., Borg, Staufenbiel, & Scherer, 1988), which was not borne out in our review of the relevant studies.

The Social Evaluation Account of Embarrassment

Whereas the loss of self-esteem account emphasizes the primacy of personal evaluations in generating embarrassment, the social evaluation account emphasizes individuals' beliefs about others' evaluations of their social identities (Miller, 1996; Miller & Leary, 1992). Individuals experience embarrassment, according to the social evaluation account, when they perceive their actions to threaten their desired social identity (Miller, 1996; Miller & Leary, 1992), a perception that stems perhaps from the general motive to be integrated into harmonious social groups (Baumeister & Leary, 1995). Embarrassment, from this perspective, is the product of a continual social monitoring of the self (Scheff, 1988), which motivates individuals to conform, avoid social exclusion, and restore relations that have been disrupted by social transgressions (Miller & Leary, 1992; Tangney et al., 1996).

Developmental studies indicate that the emergent concern for others' evaluations is closely related to the onset of the experience of embarrassment, as the social evaluation account would predict. Children's knowledge and self-attributions of embarrassment increase with age-related developments in the capacity to assume others' perspectives (Bennett, 1989). Children, begin-

ning around Age 7, reported embarrassment rather than *non-social* emotions, such as anger and sadness, as the emotion that they would feel in response to hypothetical social transgressions (Bennett & Gillingham, 1991). At about the same age, children's reports of embarrassment became more influenced by others' evaluations (Bennett, 1989), and children more frequently reported embarrassment rather than fear when interviewed about their experiences of shyness (Crozier & Burnham, 1990). The heightened concern for others' evaluations during adolescence may account for why high school students reported more intense embarrassing incidents than did college students (Miller, 1992).

Individual difference studies reveal that the heightened concern for others' evaluations relates to the increased experience and display of embarrassment. People who are prone to experience embarrassment, as measured by self-report embarrassability scales (Modigliani, 1968), reported tendencies related to the heightened concern for others' evaluations, including interaction anxiety (Halberstadt & Green, 1993; Miller, 1995), public self-consciousness and the fear of negative evaluation (Miller, 1995), and the concern for approval and the motive to avoid social exclusion (Miller, 1995). Individuals' embarrassment about contraceptive use was more strongly predicted by their concern for parents' and friends' evaluations of their sexual activity than their sexual behavior or knowledge about contraceptives (Herold, 1981). College students who displayed more intense embarrassment when overpraised in front of peers reported higher levels of conscientiousness (Keltner, 1996), a trait defined by the concern for others' evaluations and conventionality (John, 1990). Adolescent boys who displayed heightened levels of embarrassment while taking an interactive IQ test were rated by their teachers as less prone to show aggressive and delinquent behaviors and, by implication, as more concerned about social evaluations and norms (Keltner, Moffitt, & Stouthamer-Loeber, 1995).

The social evaluation account also implies that individuals who are not prone to embarrassment will be less concerned about others' evaluations and, by implication, more prone to antisocial or asocial behaviors. Researchers have long claimed that the relative absence of self-conscious or "moral" emotions, such as embarrassment, guilt, and empathy, predicts increased antisocial behavior (Cleckley, 1955; Hare, 1978; Kochanska, 1993). Illustrative studies have found, for example, that the self-reported absence of guilt relates to antisocial behavior (Ruma, 1967), drug use (Schill & Althoff, 1975), and reduced moral development (Ruma & Mosher, 1967).

Two studies have confirmed the anticipated relation between the relative absence of embarrassment and antisocial or asocial behavior. First, the previously reported study of adolescent boys' behaviors during an IQ test found that boys prone to aggressive and delinquent behaviors (i.e., "externalizers") displayed less than one third the amount of embarrassment than did the well-adjusted boys (Keltner et al., 1995). Externalizers also displayed the highest levels of anger, which is consistent with the findings from related studies (e.g., Lemerise & Dodge, 1993).

A second study has documented relations between the representation of embarrassment and *autism*, which is defined in part by the inability to take others' perspectives (Capps, Yirmiya,

Sigman, & 1992). Nonretarded children with autism and healthy controls (average age = 12 years) did not differ in their narratives of happy and sad events, which did not necessarily require taking others' perspectives. The two groups did differ, however, in their embarrassment narratives. The children with autism described embarrassing events that referred less explicitly to an audience, which is consistent with the social evaluation perspective, and they required more time and experimenter prompts to generate embarrassment narratives.

Although in general embarrassment relates to psychological adjustment, the predisposition to experience frequent and extreme embarrassment and the transient fear of embarrassment have certain costs. People who are prone to experience embarrassment report elevated levels of negative affect (Miller, 1995), neuroticism (Edelmann & McCusker, 1986), and reduced positive affect (Miller, 1995). To avoid embarrassment, individuals will sacrifice personal gain (B. R. Brown, 1970), fail to intervene in emergencies (Sabini, 1994), conform when their objective judgment suggests otherwise (Asch, 1956), and avoid using contraceptives (Herold, 1981). Even adaptive emotions can be maladaptive when experienced to an excessive degree or in inappropriate contexts.

The Awkward Interaction Account of Embarrassment

The awkward interaction account derives from the influential theorizing of Goffman (1956, 1967), who richly characterized the ritualized interactions in which individuals project and sustain their desired social identities. Embarrassment occurs when individuals fail to behave in accordance with socially defined scripts and roles (Goffman, 1967; Parrott & Smith, 1991; Silver et al., 1987) and is defined as "the flustering caused by the perception that a flubbed (botched, fumbled) performance, a working consensus of identities, cannot, or in any event, will not, be repaired in time" (Silver et al., 1987, p. 58). Embarrassment is equated with interrupted confused behavior and the absence of poise and grace, looks and feels like a chaotic fluster, and reflects a disquieting inability to act in ways that are consistent with one's projected social image (Goffman, 1956, 1967; Silver et al., 1987).

Many common antecedents of embarrassment, such as physical pratfalls and cognitive shortcomings, square nicely with the awkward interaction account, as do the feelings of uncertainty and awkwardness that in part comprise the experience of embarrassment (Parrott & Smith, 1991; Tangney et al., 1996). Similarly, certain behaviors associated with embarrassment, such as interrupted hesitant speech and restricted nonverbal actions (Asendorpf, 1990; Edelmann & Hampson, 1979), reflect the fluster of embarrassment as portrayed by the awkward interaction account. In the section that follows, we review studies that have directly evaluated the awkward interaction account.

Comparisons of the Accounts of the Causes of Embarrassment

The three accounts of the causes of embarrassment are similar in important ways. They each posit an important role of social rules and self-evaluation in the genesis of embarrassment. They

each accommodate, to varying degrees, the most common causes of embarrassment, which involve awkward, public interactions in which the individual violates social norms and is exposed to social judgment. They each account for many behaviors associated with embarrassment. The accounts identify different appraisal processes, however, as the immediate cause of embarrassment: Embarrassment follows most directly from the personal evaluation of the self, the evaluation of the public self from others' perspective, or uncertainty regarding how to act. The few direct empirical tests of these three accounts, as one would expect, have focused on their respective abilities to predict the association between specific appraisals and self-reports of embarrassment related to discrete events and the disposition to experience embarrassment.

In one relevant study (Parrott & Smith, 1991), participants first either described an actual or typical experience of embarrassment. They then rated their experience on items that capture appraisals related to the social evaluation account (e.g., "I was concerned that others would think worse of me"), the awkward interaction account ("I didn't know how to act"), and three versions of the loss of self-esteem account ("I thought poorly of myself in this situation," "My actions were inconsistent with my self-concept," and "I felt ashamed about myself"). Participants also rated their experience for the presence of symptoms (e.g., blushing, increased heart rate) and affective states (e.g., embarrassment, nervousness, panic, shyness). The findings from this study tended to support the social evaluation and awkward interaction accounts. For ratings of the actual experience of embarrassment, participants endorsed the social evaluation and awkward interaction items more strongly than the loss of self-esteem items, and their self-reports of embarrassment were only correlated with the social evaluation items. For ratings of the typical experience of embarrassment, participants endorsed the social evaluation items more strongly, and their self-reports of embarrassment were only correlated with the items of one version of the loss of self-esteem account.

Researchers have also varied the appraisal structure of hypothetical events to determine which theoretically relevant appraisals explain the most variance in participants' self-reports of embarrassment (Miller, 1996; Parrott, Sabini, & Silver, 1988). One study pitted the loss of self-esteem and awkward interaction accounts against one another by having participants imagine that they had been refused for a date and two other embarrassing situations, in one of three conditions (Parrott et al., 1988). In a no-pretext condition, the participants imagined being refused by someone who rejected them outright, thus threatening their self-esteem and creating an awkward interaction. In the second and third conditions, participants imagined being rejected by someone who offered either a credible pretext or a transparent pretext for refusal that the students knew to be false, both of which prevented the hypothetical interaction from becoming awkward. In the no-pretext condition, participants reported the most embarrassment, which is consistent with both the loss of self-esteem and awkward interaction accounts. In the transparent pretext condition, however, participants indicated the lowest levels of self-esteem but reported embarrassment more so than in the no pretext condition, supporting the awkward interaction account but posing problems for the loss of self-esteem account.

Two subsequent studies have lent additional support to the social evaluation account (reported in Miller, 1996). In one study, participants imagined being refused a date in one of four conditions that varied the salience of a negative social evaluation independently of the awkwardness of the interaction. Participants did report more embarrassment in an awkward interaction than a less awkward interaction, but interactions that produced negative social evaluations produced the greatest embarrassment. In the second study, students imagined giving a class presentation in which the favorability of their self-evaluation was varied orthogonally with the favorability of social evaluation, as conveyed by imagined feedback from other students. Participants' self-reports of embarrassment were more strongly influenced by the social evaluations than their self-evaluations, lending support to the social evaluation account over the loss of self-esteem account (Miller, 1996).

The social evaluation and awkward interaction accounts were also compared in a study that identified the appraisal tendencies that predispose certain individuals to experience embarrassment (Miller, 1995). Participants filled out measures of embarrassment, the concern for social evaluation (e.g., fear of negative evaluation, need for social approval, and fear of social exclusion scales), and social control, skills, and competence. People who reported little control over their social behavior, and who were presumably more prone to awkward interactions, reported being more prone to embarrassment, which is consistent with the awkward interaction account. Regression analyses indicated, however, that measures of the concern for social evaluation were better predictors of the proneness to embarrassment than were the measures of social skills, which is consistent with the social evaluation account.

The Remedial Account of Embarrassment

Whereas the first three accounts focus on the causes of embarrassment, the remedial account focuses on the effects of the embarrassed individual's actions. This perspective has been shaped by Goffman's (1967) analysis of *facework*, which refers to the social strategies that people rely on to honor, maintain, and, when necessary, restore each others' desired public identities and the harmony of the "expressive order" (pp. 9-23). When individuals fail to sustain their identities by committing social transgressions, they engage in corrective facework, remediate the offense with humor, redefinition, compensation, or expiation. These remedial actions demonstrate individuals' commitment to social norms, prompt forgiveness in others, and reestablish a smooth-flowing interaction.

Researchers have documented the remedial nature of the verbal and nonverbal responses of embarrassment. In one study, participants offered written descriptions of how they would respond to the embarrassment of spilling on oneself or losing poise in public (reviewed in Cupach & Metts, 1990). Coding of these narratives revealed that individuals would deal with these embarrassing episodes by (a) direct apology, in which the individual accepts responsibility for the event and expresses remorse; (b) remediation, in which the individual redresses the mistake directly; (c) simple description of the mistake; (d) accounts offered, which include excuses or justifications that

deny responsibility for the act or discount its seriousness; (e) avoidance of the act; (f) escape of the situation; (g) humor; and (h) aggression. Observers reported that they responded to others' embarrassment with many of the same strategies, in particular, humor, accounts, avoidance, and, most frequently, support and empathy (Metts & Cupach, 1989).

In related studies, researchers have documented a variety of factors that influence the remedial verbal behavior of embarrassed individuals. Remedial strategies seem to be specific to the nature of embarrassing transgression: Rule violations tend to produce apologies; events that damage the self-image produce accounts; the loss of physical poise produces humor; and teasing produces aggression (Cupach & Metts, 1990; Sharkey & Stafford, 1990). Women seem to prefer more deferential remedial strategies, such as apologies and excuses, to correct their embarrassing acts (Cupach, Metts, & Hazleton, 1986). Individuals in the United States seem more inclined to engage in remedial behavior that saves face, such as humor, justification, and aggression, whereas Japanese individuals seem more inclined to apologize (Sueda & Wiseman, 1992). Humor seems to be a more common remedial strategy in embarrassing interactions involving equal status individuals than those involving dominant and subordinate individuals (Fink & Walker, 1977; Sueda & Wiseman, 1992). One concern about accounts that place great emphasis on the verbal responses of embarrassment is that many studies find that verbalization is actually uncommon during embarrassment (Buswell & Keltner, 1996; Edelmans & Iwawaki, 1987).

The nonverbal display of embarrassment also evokes emotions and behaviors in others that help remedy social transgressions. Observers reported high levels of affiliative emotions such as amusement and sympathy in response to others' embarrassment (Fink & Walker, 1977; Keltner et al., in press; Miller, 1987), which increase interpersonal liking and forgiveness. Across studies, participants who (a) watched an individual knock over a supermarket display (Semin & Manstead, 1982), (b) informed a confederate of bad news (Edelmans, 1982), (c) judged a hypothetical defendant convicted of selling drugs (Young, Keltner, & Lingswieler, 1997), or (d) judged political candidates (Masters, 1988) liked, and when relevant forgave, the individual who displayed embarrassment more than the comparison individual who displayed other nonverbal behavior or no emotion.⁴ Parents punished children less if they displayed embarrassment and related behavior following transgressions (Semin & Papadopoulou, 1990). Participants volunteered for additional hours to help an embarrassed confederate more than a poised confederate (Levin & Arluke, 1982) and took more condoms following a presentation aimed at increasing condom use when made by an embarrassed presenter rather than an unembarrassed or confident presenter (Keltner & Stoev, 1996). In studies of teasing between fraternity members and romantic partners, timely displays of embarrassment by teasers and targets of teasing evoked positive emotions in their teasing partners and audience members (Keltner et al., 1997). As Goffman (1967)

⁴ Masters referred to the display associated with increased political popularity as the "minus face," which, like the embarrassment display, includes a controlled smile and gaze and head movements down.

noted, observers helped restore social relations during embarrassing interactions because they too were implicated by the disruption produced by the embarrassing act.

Finally, researchers have begun to address how embarrassment-related remedial responses interact. One study found that when certain channels of remedial behavior were blocked, individuals turned to other means to restore their social identity (Leary, Landel, & Patton, 1996). Participants were required to sing the cliché song "Feelings" into a microphone, presumably damaging their social identities. The experimenter then either noted or failed to note that the participant was blushing. Those participants whose blushing had not been pointed out restored their social identity by rating themselves more favorably on self-relevant questionnaires than those participants whose blushing had been noted. Comparable studies could examine whether the verbal and nonverbal responses of embarrassment interact in similar fashion, with one channel becoming salient when the other goes unnoticed.

The Appeasement Account of Embarrassment

Appeasement is the process by which one individual pacifies another. Although appeasement is well documented in other species (see Table 5), most theories of emotion have ignored the potential appeasement functions of emotion (e.g., Lazarus, 1991; Plutchik, 1984; Tomkins, 1984). Recently, however, theorists have proposed that embarrassment (Keltner, 1995; Keltner et al., in press; Leary et al., 1992; Miller & Leary, 1992) as well as the blush (Castelfranchi & Poggi, 1990; Leary et al., 1992) may serve appeasement-related functions, pacifying observers of social transgressions.

The appeasement account, based on studies of reconciliation in other species (de Waal, 1986, 1988) and human apologies and accounts (Tavuchis, 1991), proposes that embarrassment unfolds in the following process: Individuals (a) experience threatened social relations and the motive to re-establish the social bond, typically following a rule violation;⁵ (b) display appeasement-related submissive and affiliative behaviors; which (c) reduce aggression and evoke social approach in others, thus restoring the social interaction and relation. At this descriptive level, the appeasement account resembles the other accounts in essential ways: As in the social evaluation account, social threat is crucial to the generation of embarrassment; as in the loss of self-esteem account, submissiveness is part of the response of embarrassment; and as in the remedial account, embarrassment restores social relations.

The appeasement account offers an evolutionary-functional analysis of why humans have developed embarrassment as part of their emotional repertoire (for elements of functional explanations, see Keltner & Gross, in press; Levenson, 1994; Nagel, 1979; and Wright, 1973). At the heart of this functional account is the claim that embarrassment is an adaptation to a problem related to physical and social survival: the restoration of relations following social transgressions. To varying degrees, the other accounts also assume that embarrassment is adaptive, benefiting the individual because it motivates actions that prevent the loss of self-esteem (Babcock & Sabini, 1990), promote group stability (Miller, 1996), preserve the ceremonial order

(Goffman, 1967), or correct social mistakes (Cupach & Metts, 1990).

The appeasement account diverges from the other accounts in its emphasis on why humans have embarrassment, as opposed to the immediate causes and effects of embarrassment, and in the explicit connections it makes between human embarrassment and the behavior of other species. Theorists since Darwin (1872) have argued that embarrassment is the product of cognitive processes that are unique to humans and, by implication, unlikely to be observed in other species. The appeasement account, in contrast, identifies the origins and functions of embarrassment in the appeasement systems of other species (Leary et al., 1992; Ohman, 1986). We conclude our review by elucidating the similarities between the conditions, behaviors, and consequences of nonhuman appeasement and human embarrassment. This comparison yields findings that are consistent with the different accounts of embarrassment and raises interesting questions for future research.

Parallels Between Nonhuman Appeasement and Human Embarrassment

The conditions that give rise to nonhuman appeasement and human embarrassment generally involve threats to social relations and the motive to restore the social bond (de Waal, 1988; Miller & Leary, 1992). Nonhuman appeasement typically follows agonistic encounters (de Waal, 1988), whereas human embarrassment typically follows threats to social identity (Miller, 1996; Miller & Leary, 1992; Parrott & Smith, 1991). Specific social threats that evoke nonhuman appeasement and human embarrassment, or related processes such as blushing, include interactions with high status individuals (B. R. Brown & Garland, 1971; de Waal, 1986, 1988; Keltner et al., 1997; Schlenker & Leary, 1982) and strangers (Tangney et al., 1996), distributions of resources (Ohman, 1986), and being the object of undesirable social attention (Leary et al., 1992).

Nonhuman appeasement and human embarrassment involve similar responses that reduce social threats and restore social bonds. Nonhuman appeasement involves submissive behaviors (see Table 5), including postural contraction and bodily shrinkage,⁶ gaze aversion, infantile behaviors such as pouting, and submissive vocalizations (de Waal, 1986, 1988; Hauser, 1996). Nonhuman appeasement also involves affiliative behaviors related to food, such as lip smacking and kissing, and pleasurable physical contact and sex, such as embracing, grooming, rump and genital presentation, and holding and mounting (de Waal, 1988; Eibl-Eibesfeldt, 1989; Hauser, 1996).

⁵ There are other events that produce appeasement behavior that do not involve rule violations, as we have indicated in this review.

⁶ Darwin (1872) postulated that behaviors that make the individual small inhibit aggressive behavior. Perhaps the best illustration of this principle, which governs the behavior of embarrassment as well, is a study of playground aggression (Ginsberg, Pollman, & Wauson, 1977). Of 72 spontaneous aggressive interactions observed between 8- to 12-year-old boys, 58 interactions were terminated when the target reduced his size by dropping his head, slumping his shoulders, and, in 8 interactions, crouching down to tie his shoe.

Human embarrassment likewise incorporates submissive and affiliative responses. Submissiveness defines the experience of embarrassment, which involves the sense of being small and inferior (Tangney et al., 1996), a reduced self-esteem (Halberstadt & Green, 1993), negative self statements and depressed estimates of social abilities and self-confidence (Edelmann & McCusker, 1986; Schlenker & Leary, 1982), self-abasement (Halberstadt & Green, 1993), and feelings of inadequacy (Modigliani, 1968) as well as the gaze and head movements down, face covering, and postural shrinkage of the nonverbal display of embarrassment (Keltner, 1995). Affiliation also characterizes certain responses of embarrassment. The experience of embarrassment involves feelings of amusement and the pronounced inclination to laugh (Abu-Lughod, 1986; Edelmann & Iwawaki, 1987; Leary & Meadows, 1991; Miller & Tangney, 1994). The embarrassment display includes affiliative smiles, lip wipes, and puckers (Keltner, 1995), which may account for why the embarrassment display is occasionally labeled as *love* (Haidt & Keltner, 1997) and plays a role in flirtation across cultures (Eibl-Eibesfeldt, 1989). Although scholars have outlined the weaknesses of an appeasement account of the blush (Halberstadt & Green, 1993; Leary et al., 1992), in certain species males and females display reddened skin, even in the face, as sexual cues and present the reddened rear quarters as appeasement gestures (Dixon, 1983; Hauser, 1996), suggesting that the human blush may have coopted the sexual flush to signal affiliation.

The submissive and affiliative responses of nonhuman appeasement and human embarrassment evoke responses in others that restore social relations. Nonhuman appeasement behaviors elicit responses in conspecifics, such as embracing, grooming, and sexual play, that counteract aggressive tendencies and increase social reconciliation (de Waal, 1986, 1988; de Waal & van Roosmalen, 1979). Similarly, human embarrassment evokes elevated amusement (Keltner et al., in press), laughter (Cupach & Metts, 1990), mild sympathy (Miller, 1987) and forgiveness in others (Keltner et al., in press), and romantic love in the teasing interactions of romantic partners (Keltner et al., 1997) as well as inferences that the individual respects the violated norm (Keltner et al., in press).

Nonhuman appeasement and human embarrassment also evoke reconciliation-related responses in individuals not directly implicated by the embarrassing event. In nonhuman primates, third party "mediators," when observing others in conflict, encourage reconciliation with affiliative gestures of their own (de Waal, 1988). In humans, embarrassment often evokes laughter and vicarious embarrassment in audience members (Miller, 1987), which often lead others to act in ways, such as diverting attention (Leary & Meadows, 1991) or offering support (Cupach & Metts, 1990), that minimize the damage to the embarrassed individual's social identity.

Implications and Questions Related to the Appeasement Account

The appeasement account offers insights into certain questions raised by our review. For example, observers typically identify the embarrassment display less accurately than the displays of such emotions as disgust. This may be because embar-

arrassment signals both submissiveness and affiliation (Algoe & Keltner, 1996), thereby more frequently prompting secondary interpretations such as shame and amusement. Embarrassment may occur later in development than other emotions (Lewis, 1993) because it requires the integration of the submissive and affiliative systems. Finally, if shame primarily involves the submissive system, one would expect shame to emerge earlier in development than would embarrassment (see Lewis et al., 1989, for an opposing prediction). These sorts of issues need to be explored.

The appeasement account also raises several questions regarding embarrassment. First, Are there other appeasement-related emotions or traits? Appeasement and the reduction of social threat seem to relate to a variety of states and traits, including depression (Gilbert & Trower, 1990) and social phobia and humiliation (Ohman, 1986). Shame, in particular, seems to involve appeasement. Evidence indicates that the self-reported tendency to experience shame correlates with submissive behavior and a sense of personal inferiority and helplessness (Gilbert, Pehl, & Allan, 1994). The nonverbal display of shame involves submissive gaze aversion, bowed head, and constricted posture (Keltner & Harker, in press). Why might embarrassment and shame both serve appeasement functions?

Embarrassment and shame appear to appease others for different transgressions and through different processes (see Keltner et al., in press). Embarrassment, as we have seen, follows transgressions of social conventions and appeases others by eliciting light-hearted emotions in observers, such as amusement, which incline observers to discount the importance of the transgression (Cupach & Metts, 1990, 1992; Cupach et al., 1986; Keltner et al., in press; Sharkey, 1991; Sharkey & Stafford, 1990; Tangney et al., 1996). Shame follows more serious transgressions of standards related to the core self (Tangney et al., 1996) and appeases observers by eliciting sympathy (Keltner et al., in press), which leads observers to offer forgiveness and help (Eisenberg et al., 1989)—which are more likely to elevate the ashamed individual's negative sense of self.

Finally, How does human embarrassment differ from nonhuman appeasement as a function of the representational processes that relate to embarrassment? In general, theorists have argued that human cognition broadens the range of elicitors and possible responses of human emotion (see Keltner & Haidt, 1997; and Scherer, 1994). Representational processes are certain to shape human embarrassment in more specific ways as well. First, the representation of others' states prompts the experience, development, and differentiation of the self-conscious emotions, contributing to distinctions humans make between self-conscious emotions and anger or distress (Bennett & Gillingham, 1991) and among embarrassment, shame, and guilt (e.g., Tangney et al., 1996). The representation of others' emotions also leads humans to experience vicarious embarrassment in response to another's chagrin. Nonhuman appeasement processes, in contrast, are less likely to be so differentiated or to involve such vicarious responses. Second, self-representational capacities allow humans to elaborate the experience of embarrassment and shame into moral concepts involving evaluations of the self in relation to standards and rules. These emotion-laden concepts are central to social practices in which humans negotiate defini-

tions of right and wrong, and they motivate the avoidance of rule violations (e.g., Ausubel, 1955; Keltner & Haidt, 1997; Kochanska, 1993; Moore, 1993). Nonhuman appeasement processes, in contrast, seem to be primarily elicited by concrete, physical events and not elaborated into symbolic concepts that guide social practices and behavior.

Summary of the Accounts of Embarrassment

The five accounts of embarrassment answer different questions, focus on different aspects of emotion, and are most uniquely suited to explain different kinds of evidence. Although in certain instances the accounts clearly make different predictions, together they converge on what one might consider a prototypical process of embarrassment. Embarrassment typically begins when an individual acts in a way that violates rules of a conventional nature, thus momentarily threatening the individual's social identity within the interaction. The individual responds with submissive and affiliative behavior. This behavior, in turn, evokes reconciliation-related behavior in others that restores the social interaction and, more broadly, the individual's social identity.

Conclusions, Questions, and Future Prospects

This article began with two simple questions: What are the forms of embarrassment? and What accounts for the nature of embarrassment-related responses? Our review showed that the antecedents, appraisals, experience, expressive behavior, and—to a certain extent—autonomic physiology of embarrassment are distinct from those of related emotions. These different responses of embarrassment have drawn the attention of theorists who have offered accounts of the causes, effects, and functions of embarrassment. Although these accounts pertain to different kinds of evidence, their conceptual overlap is significant; they converge on the notion that embarrassment serves an important appeasement function in social interactions.

Numerous questions regarding embarrassment and related states remain and deserve further empirical attention. Studies of embarrassment in other cultures are limited (for exceptions, see Abu-Lughod, 1986; Edelmann & Iwawaki, 1987; Haidt & Keltner, 1997; and Sueda & Wiseman, 1992) and raise the question of How do other cultures represent, display, and experience embarrassment? In cultures in which embarrassment is more prominent, are there more widely agreed on antecedents and nonverbal displays of embarrassment? In cultures in which embarrassment has more positive connotations, as in India (Shweder, 1993), does embarrassment involve more positive experiences and nonverbal displays? More systematic study needs to be undertaken of cultures in which embarrassment seems to have more significant costs for the self, as in Japan (Lebra, 1983) where studies indicate embarrassment seems to involve greater criticism, less humor, and the greater inclination to apologize (Edelmann & Iwawaki, 1987). We hope that our review of the responses of embarrassment points to productive methods for addressing such questions.

Continued and more direct examination of the blush is most certainly needed to determine its relation to nonverbal behavior,

its variation across cultures, its underlying physiological mechanisms, and whether it varies when associated with embarrassment, shame, or anger. Are there different kinds of blushes, as suggested by some (Leary et al., 1992)? Does the blush have a function of its own (e.g., Castelfranchi & Poggi, 1990), perhaps heightening the signal value of other appeasement gestures or signaling affiliation, as we have speculated? Or is the blush simply a by-product of other psychological processes, such as social attention (e.g., Darwin, 1872)? Do individuals in whom the blush is less visible display embarrassment more clearly in other nonverbal behaviors, as the studies of the coordination of the response channels of embarrassment (e.g., Leary et al., 1996) would suggest?

Additional research needs to be done on individual differences in embarrassment, which have important social correlates (Keltner et al., 1995; Miller, 1995). Research has found that individual differences in embarrassment are quite stable by Age 3 (Lewis et al., 1991), indicating that embarrassment proneness is present early and likely to play an important role in the development of personality. These findings raise interesting questions. What biological factors predispose the young infant to embarrassment? What environmental factors, perhaps parental criticism, contribute to the proneness to embarrassment? What are the social consequences of this early proneness to embarrassment? Research that addresses these questions will offer another approach for identifying the biological substrates, social causes, and functions of embarrassment.

The role of embarrassment in social interactions, such as teasing, flirtation, conformity, and punishment (e.g., Moore, 1993), needs to be further explored to more directly document the social functions of embarrassment as well as its social costs. The factors that govern the systematic relations between displays of embarrassment and observers' responses of amusement, laughter, and sympathy need to be explored, as do the relations between observers' anger and disgust and individuals' embarrassment and shame. In conducting this research, researchers are likely to further document how embarrassment is part of orderly social behavior and, more generally, how emotions are central to human social life.

References

- Abu-Lughod, L. (1986). *Veiled sentiments*. Berkeley, CA: University of California Press.
- Adams, D. B. (1980). Motivational systems of agonistic behavior in muroid rodents: A comparative review and neural model. *Aggressive Behavior*, 6, 295–346.
- Adams, D. B. (1981). Motivational systems of social behavior in male rats and monkeys: Are they homologous? *Aggressive Behavior*, 7, 5–18.
- Albonetti, M. E., Dessi-Fulgheri, F., & Farabollini, F. (1990). Intrafemale agonistic interactions in the domestic rabbit (*Oryctolagus cuniculus* L.). *Aggressive Behavior*, 16, 77–86.
- Algoe, S. B., & Keltner, D. (1996). *Perceptions of dominance, submissiveness, cold-heartedness, and affiliation in facial expressions of emotion*. Manuscript in preparation, University of California, Berkeley, Department of Psychology.
- Ameyaw-Akumfi, C., & Hazlett, B. A. (1975, December 19). Sex recognition in the crayfish *Procambarus clarkii*. *Science*, 190, 1225–1226.

- Asch, S. (1956). Studies of independence and conformity: 1. A minority of one against a unanimous majority. *Psychological Monographs*, 70, 1-70.
- Asendorpf, J. (1990). The expression of shyness and embarrassment. In W. R. Crozier (Ed.), *Shyness and embarrassment: Perspectives from social psychology* (pp. 87-118). Cambridge, England: Cambridge University Press.
- Ausubel, D. P. (1955). Relationships between shame and guilt in the socializing process. *Psychological Review*, 62, 378-390.
- Averill, J. R. (1992). The structural bases of emotional behavior. In M. S. Clark (Ed.), *Emotion* (pp. 1-24). Newbury Park, CA: Sage.
- Babcock, M. K. (1988). Embarrassment: A window on the self. *Journal for the Theory of Social Behaviour*, 18, 459-483.
- Babcock, M. K., & Sabini, J. (1990). On differentiating embarrassment from shame. *European Journal of Social Psychology*, 20, 151-169.
- Barrett, K. C., & Campos, J. J. (1987). Perspectives on emotional development II: A functionalist approach to emotions. In J. D. Osofsky (Ed.), *Handbook of infant development* (2nd ed., pp. 555-578). New York: Wiley-Interscience.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497-529.
- Baumeister, R. F., Stillwell, A. M., & Heatherton, T. F. (1994). Guilt: An interpersonal approach. *Psychological Bulletin*, 115, 243-267.
- Bennett, M. (1989). Children's self-attribution of embarrassment. *British Journal of Developmental Psychology*, 7, 207-217.
- Bennett, M., & Gillingham, K. (1991). The role of self-focused attention in children's attributions of social emotions to the self. *Journal of Genetic Psychology*, 152, 303-309.
- Bergler, E. (1944). A new approach to the therapy of erythrophobia. *Psychoanalytic Quarterly*, 13, 43-59.
- Berne, R. M., & Levy, M. N. (1988). *Cardiovascular physiology*. St. Louis, MO: Mosby.
- Bernstein, I., Williams, L., & Ramsay, M. (1983). The expression of aggression in old world monkeys. *International Journal of Primatology*, 4, 113-125.
- Borg, I., Staufienbiel, T., & Scherer, K. R. (1988). On the symbolic basis of shame. In K. R. Scherer (Ed.), *Facets of emotion: Recent research* (pp. 79-98). Hillsdale, NJ: Erlbaum.
- Boucher, J. D., & Brandt, M. E. (1981). Judgment of emotion: American and Malay antecedents. *Journal of Cross-Cultural Psychology*, 3, 309-314.
- Brown, B. R. (1970). Face-saving following experimentally induced embarrassment. *Journal of Experimental Social Psychology*, 6, 255-271.
- Brown, B. R., & Garland, H. (1971). The effects of incompetency, audience acquaintanceship, and anticipated evaluative feedback on face-saving behavior. *Journal of Experimental Social Psychology*, 7, 490-502.
- Brown, J., & Wiener, B. (1984). Affective consequences of ability versus effort ascriptions: Controversies, resolutions, and quandaries. *Journal of Educational Psychology*, 76, 146-158.
- Buck, R. W., & Parke, R. D. (1972). Behavioral and physiological response to the presence of a friendly or neutral person in two types of stressful situations. *Journal of Personality and Social Psychology*, 24, 143-153.
- Burgess, T. (1839). *The physiology or mechanism of blushing*. London: J. Churchill.
- Buss, A. H. (1980). *Self-consciousness and social anxiety*. San Francisco: Freeman.
- Buss, A., Iscoe, I., & Buss, E. H. (1979). The development of embarrassment. *Journal of Psychology*, 103, 227-230.
- Buswell, B. N., & Keltner, D. (1996). *The themes and variants of the embarrassment display*. Manuscript in preparation, University of Wisconsin—Madison, Department of Psychology.
- Cacioppo, J. T., Klein, D. J., Berntson, G. G., & Hatfield, E. (1993). The psychophysiology of emotion. In M. Lewis & J. M. Haviland (Eds.), *The handbook of emotions* (pp. 119-142). New York: Guilford Press.
- Calhoun, C., & Solomon, R. C. (1984). Introduction. In C. Calhoun & R. C. Solomon (Eds.), *What is an emotion: Readings in philosophical psychology* (pp. 3-40). New York: Oxford University Press.
- Campos, J. J., Barrett, K. C., Lamb, M. E., Goldsmith, H. H., & Stenberg, C. (1983). Socioemotional development. In M. M. Haith & J. J. Campos (Vol. Eds.), *Handbook of child psychology. Vol. 2: Infancy and development psychology* (4th ed., pp. 783-915). New York: Wiley.
- Capps, L., Yirmiya, N., & Sigman, M. (1992). Understanding of simple and complex emotions in non-retarded children with autism. *Journal of Child Psychology and Psychiatry*, 33, 1169-1182.
- Castelfranchi, C., & Poggi, I. (1990). Blushing as discourse: Was Darwin wrong? In W. R. Crozier (Ed.), *Shyness and embarrassment: Perspectives from social psychology* (pp. 230-254). Cambridge, England: Cambridge University Press.
- Clark, C. (1990). Emotions and the micropolitics in everyday life: Some patterns and paradoxes of "place." In T. D. Kemper (Ed.), *Research agendas in the sociology of emotions* (pp. 305-334). Albany: State University of New York Press.
- Cleckley, H. (1955). *The mask of sanity* (3rd ed.). St. Louis, MO: Mosby.
- Crozier, W. R., & Burnham, M. (1990). Age-related differences in children's understanding of shyness. *British Journal of Developmental Psychology*, 8, 179-185.
- Cupach, W. R., & Metts, S. (1990). Remedial processes in embarrassing predicaments. In J. Anderson (Ed.), *Communication yearbook* (pp. 323-352). Newbury Park, CA: Sage.
- Cupach, W. R., & Metts, S. (1992). The effects of type of predicament and embarrassability on remedial responses to embarrassing situations. *Communication Quarterly*, 40, 149-161.
- Cupach, W. R., Metts, S., & Hazleton, V., Jr. (1986). Coping with embarrassing predicaments: Remedial strategies and their perceived utility. *Journal of Language and Social Psychology*, 5, 181-200.
- Cutlip, W. D., II, & Leary, M. R. (1993). Anatomic and physiological bases of social blushing: Speculations from neurology and psychology. *Behavioural Neurology*, 6, 181-185.
- Darwin, C. (1872). *The expression of emotions in man and animals*. New York: Philosophical Library.
- Davidson, R. J., Ekman, P., Saron, C. D., Senulis, J. A., & Friesen, W. V. (1990). Approach-withdrawal and cerebral asymmetry: Emotional expression and brain physiology I. *Journal of Personality and Social Psychology*, 58, 330-341.
- Devinsky, O., Hafler, D. A., & Victor, J. (1982). Embarrassment as the aura of a complex partial seizure. *Neurology*, 32, 1284-1285.
- de Waal, F. B. M. (1986). The integration of dominance and social bonding in primates. *Quarterly Review of Biology*, 61, 459-479.
- de Waal, F. B. M. (1988). The reconciled hierarchy. In M. R. A. Chance (Ed.), *Social fabrics of the mind* (pp. 105-136). Hillsdale, NJ: Erlbaum.
- de Waal, F. B. M. (1989). Behavioral contrasts between bonobo and chimpanzee. In P. G. Heltue & L. A. Marquant (Eds.), *Understanding chimpanzees* (pp. 154-175). Cambridge, MA: Harvard University Press.
- de Waal, F. B. M., & Luttrell, L. M. (1985). The formal hierarchy of rhesus macaques: An investigation of the bared-teeth display. *American Journal of Primatology*, 9, 73-85.

- de Waal, F. B., & Ren, R. (1988). Comparison of the reconciliation behavior of stump-tail and rhesus macaques. *Ethology*, 78, 129–142.
- de Waal, F. B. M., & van Roosmalen, A. (1979). Reconciliation and consolation among chimpanzees. *Behavioral Ecology and Sociobiology*, 5, 55–66.
- de Waal, F. B. M., & Yoshihara, D. (1983). Reconciliation and redirected aggression in rhesus monkeys. *Behaviour*, 85, 224–241.
- Dixon, A. F. (1983). Observations on the evolution and behavioural significance of "sexual skin" in female primates. *Advances in the Study of Behaviour*, 13, 63–106.
- Drummond, H., & Osorno, J. L. (1992). Training siblings to be submissive losers: Dominance between booby nestlings. *Animal Behaviour*, 44, 881–893.
- Edelmann, R. J. (1982). The effect of embarrassed reactions upon others. *Australian Journal of Psychology*, 34, 359–367.
- Edelmann, R. J. (1987). *The psychology of embarrassment*. Chichester, UK: Wiley.
- Edelmann, R. J. (1990). Embarrassment and blushing: A component-process model, some initial descriptive and cross-cultural data. In W. R. Crozier (Ed.), *Shyness and embarrassment: Perspectives from social psychology* (pp. 205–229). Cambridge, England: Cambridge University Press.
- Edelmann, R. J., Asendorpf, J., Contarello, A., Georgas, J., Villanueva, C., & Sammuner, V. (1987). Self-reported verbal and non-verbal strategies for coping with embarrassment in five European cultures. *Social Science Information*, 26, 869–883.
- Edelmann, R. J., & Hampson, S. E. (1979). Changes in nonverbal behavior during embarrassment. *British Journal of Social and Clinical Psychology*, 18, 385–390.
- Edelmann, R. J., & Hampson, S. E. (1981a). Embarrassment in dyadic interaction. *Social Behavior and Personality*, 9, 171–177.
- Edelmann, R. J., & Hampson, S. E. (1981b). The recognition of embarrassment. *Personality and Social Psychology Bulletin*, 7, 109–116.
- Edelmann, R. J., & Iwawaki, S. (1987). Self-reported expression and consequences of embarrassment in the United Kingdom and Japan. *Psychologia*, 30, 205–216.
- Edelmann, R. J., & McCusker, G. (1986). Introversiveness, neuroticism, empathy, and embarrassment. *Personality and Individual Differences*, 7, 133–140.
- Eibl-Eibesfeldt, I. (1989). *Human ethology*. New York: Aldine de Gruyter Press.
- Eisenberg, N., Fabes, R. A., Miller, P. A., Fultz, J., Shell, R., Mathy, R. M., & Reno, R. R. (1989). Relation of sympathy and distress to prosocial behavior: A multimethod study. *Journal of Personality and Social Psychology*, 57, 55–66.
- Ekman, P. (1972). Universals and cultural differences in facial expressions of emotion. In J. Cole (Ed.), *Nebraska Symposium on Motivation* (pp. 207–283). Lincoln: University of Nebraska Press.
- Ekman, P. (1984). Expression and the nature of emotion. In K. Scherer & P. Ekman (Eds.), *Approaches to emotion* (pp. 319–344). Hillsdale NJ: Erlbaum.
- Ekman, P. (1992). An argument for basic emotions. *Cognition and Emotion*, 6, 169–200.
- Ekman, P. (1993). Facial expression and emotion. *American Psychologist*, 48, 384–392.
- Ekman, P., & Friesen, W. V. (1976). Measuring facial movement. *Journal of Environmental Psychology and Nonverbal Behavior*, 1, 56–75.
- Ekman, P., & Friesen, W. V. (1978). *Facial action coding system: A technique for the measurement of facial movement*. Palo Alto, CA: Consulting Psychologists Press.
- Ekman, P., Levenson, R. W., & Friesen, W. V. (1983, September 16). Autonomic nervous system activity distinguishes between emotions. *Science*, 221, 1208–1210.
- Ekman, P., Sorenson, E. R., & Friesen, W. V. (1969, April 4). Pan-cultural elements in facial displays of emotions. *Science*, 164, 86–88.
- Fadem, B. H. (1989). Sex differences in aggressive behavior in a marsupial, the gray short-tailed opossum (*Monodelphis domestica*). *Aggressive Behavior*, 15, 435–441.
- Farabollini, F. (1987). Behavioral and endocrine aspects of dominance and submission in male rabbits. *Aggressive Behavior*, 13, 247–258.
- Feldman, H. N. (1994). Domestic cats and passive submission. *Animal Behaviour*, 47, 457–459.
- Fernandez-Espejo, E., & Mir, M. (1990). Ethological analysis of the male rat's socioagonistic behavior in a resident-intruder paradigm. *Aggressive Behavior*, 16, 41–55.
- Figler, M. H., Finkelstein, J. E., Twum, M., & Peeke, H. V. S. (1995). Intruding male red swamp crayfish, *Procambarus clarkii*, immediately dominate members of established communities of smaller, mixed-sex conspecifics. *Aggressive Behavior*, 21, 225–236.
- Fink, E. L., & Walker, B. A. (1977). Humorous responses to embarrassment. *Psychological Reports*, 40, 475–485.
- Fox, M. W. (1973). Social dynamics of three captive wolf packs. *Behaviour*, 47, 290–301.
- Frank, R. H. (1988). *Passions within reason*. New York: Norton.
- Frijda, N. (1986). *The emotions*. Cambridge, England: Cambridge University Press.
- Gilbert, P., Pehl, J., & Allan, S. (1994). The phenomenology of shame and guilt: An empirical investigation. *British Journal of Medical Psychology*, 67, 23–36.
- Gilbert, P., & Trower, P. (1990). The evolution and manifestation of social anxiety. In W. R. Crozier (Ed.), *Shyness and embarrassment: Perspectives from social psychology* (pp. 144–180). Cambridge, England: Cambridge University Press.
- Ginsburg, J. J., Pollman, V. A., & Wauson, M. S. (1977). An ethological analysis of nonverbal inhibitors of aggressive behavior in male elementary school children. *Developmental Psychology*, 13, 417–418.
- Goffman, E. (1956). Embarrassment and social organization. *American Journal of Sociology*, 62, 264–271.
- Goffman, E. (1967). *Interaction ritual: Essays on face-to-face behavior*. Garden City, NY: Anchor.
- Gross, E., & Stone, G. P. (1964). Embarrassment and the analysis of role requirements. *American Journal of Sociology*, 70, 1–15.
- Haidt, J., & Keltner, D. (1997). *Culture and emotion: New methods and new emotions*. Manuscript in preparation, University of Virginia, Department of Psychology.
- Halberstadt, A. G., & Green, L. R. (1993). Social attention and placation theories of blushing. *Motivation and Emotion*, 17, 53–64.
- Hare, R. D. (1978). Electrodermal and cardiovascular correlates of psychopathy. In R. D. Hare & D. Schalling (Eds.), *Psychopathic behavior: Approaches to research* (pp. 107–143). Chichester, England: Wiley.
- Harré, R. (1990). Embarrassment: A conceptual analysis. In W. R. Crozier (Ed.), *Shyness and embarrassment: Perspectives from social psychology* (pp. 87–118). Cambridge, England: Cambridge University Press.
- Hashimoto, E., & Shimizu, T. (1988). A cross-cultural study of the emotion of shame/embarrassment: Iranian and Japanese children. *Psychologia*, 31, 1–6.
- Hauser, M. D. (1996). *The evolution of communication*. Cambridge, MA: MIT Press.
- Heckhausen, H. (1984). Emergent achievement behavior: Some early developments. In J. Nicholls (Ed.), *Advances in motivation and achievement. Vol. 3: The development of achievement motivation* (pp. 1–32). Greenwich, CT: JAI Press.
- Heinrich, B. (1989). *Ravens in winter*. New York: Summit Books.

- Herold, E. S. (1981). Contraceptive embarrassment and contraceptive behavior among young single women. *Journal of Youth and Adolescence*, 10, 233–242.
- Higgins, E. T. (1987). Self-discrepancy theory: A theory relating to self and affect. *Psychological Review*, 94, 319–340.
- Izard, C. E. (1971). *The face of emotion*. New York: Appleton-Century-Crofts.
- Izard, C. E. (1977). *Human emotions*. New York: Plenum Press.
- Jaeger, R. G., Goy, J. M., Tarver, M., & Marquez, C. E. (1986). Salamander territoriality: Pheromonal markers as advertisements by males. *Animal Behaviour*, 34, 860–864.
- James, W. (1884). What is an emotion? *Mind*, 9, 188–205.
- Jensen, P., & Wood-Gush, D. G. M. (1984). Social interactions in a group of free-ranging sows. *Applied Animal Behavioral Science*, 12, 327–337.
- John, O. P. (1990). The “Big Five” factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In L. Pervin (Ed.), *Handbook of personality theory and research* (pp. 66–100). New York: Guilford Press.
- Keltner, D. (1995). The signs of appeasement: Evidence for the distinct displays of embarrassment, amusement, and shame. *Journal of Personality and Social Psychology*, 68, 441–454.
- Keltner, D. (1996). Facial expressions of emotion and personality. In C. Malatesta-Magai & S. H. McFadden (Eds.), *Handbook of emotion, aging, and the lifecourse* (pp. 385–402). New York: Academic Press.
- Keltner, D., & Buswell, B. (1996). Evidence for the distinctness of embarrassment, shame, and guilt: A study of recalled antecedents and facial expressions of emotion. *Cognition and Emotion*, 10, 155–172.
- Keltner, D., & Gross, J. J. (in press). Functional accounts of emotion. *Cognition and Emotion*.
- Keltner, D., & Haidt, J. (1997). Social functions of emotions. Manuscript in preparation, University of California, Berkeley, Department of Psychology.
- Keltner, D., & Harker, L. (in press). The forms and functions of the nonverbal display of shame. In P. Gilbert & B. Andrews (Eds.), *Interpersonal approaches to shame*. Oxford, England: Oxford University Press.
- Keltner, D., Moffitt, T., & Stouthamer-Loeber, M. (1995). Facial expressions of emotion and psychopathology in adolescent boys. *Journal of Abnormal Psychology*, 104, 644–652.
- Keltner, D., & Stoey, L. (1996). *Embarrassment and responses to condom education*. Unpublished manuscript, University of California, Berkeley, Department of Psychology.
- Keltner, D., Young, R., & Buswell, B. N. (in press). Appeasement in human emotion, personality, and social practice. *Aggressive Behavior*.
- Keltner, D., Young, R. C., Oemig, C., Heerey, E., & Monarch, N. D. (1997). *The social and emotional functions of teasing: Threat, appeasement, and reconciliation in groups and romantic couples*. Manuscript submitted for publication, University of California, Berkeley, Department of Psychology.
- Kochanska, G. (1993). Toward a synthesis of parental socialization and child temperament in early development of conscience. *Child Development*, 64, 325–347.
- Koutnik, D. L. (1980). Submissive signaling in mule deer. *Animal Behaviour*, 28, 312–313.
- Kudryavtseva, N. N. (1991). A sensory contact model for the study of aggressive and submissive behavior in male mice. *Aggressive Behavior*, 17, 285–291.
- Kummer, H. (1968). *Social organization of Hamadryas baboons*. Chicago: University of Chicago Press.
- La Barre, W. (1947). The cultural basis of emotions and gestures. *Journal of Personality*, 16, 49–69.
- Laurie-Ahlberg, C. C., & McKinney, F. (1979). The nod–swim display of male green-winged teal (*Anas crecca*). *Animal Behaviour*, 27, 165–172.
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- Leary, M. R., Britt, T. W., Cutlip, W. D., II, & Templeton, J. L. (1992). Social blushing. *Psychological Bulletin*, 112, 446–460.
- Leary, M. R., Landel, J. L., & Patton, K. M. (1996). The motivated expression of embarrassment following a self-presentational predicament. *Journal of Personality*, 64, 619–636.
- Leary, M. R., & Meadows, S. (1991). Predictors, elicitors, and concomitants of social blushing. *Journal of Personality and Social Psychology*, 60, 254–262.
- Leary, M. R., Rejeski, W. J., & Britt, T. W. (1990, June). *Distinguishing embarrassment from social anxiety*. Paper presented at the 2nd annual meeting of the American Psychological Society, Dallas, TX.
- Leary, M. R., Rejeski, W. J., Britt, T., & Smith, G. E. (1994). *Physiological differences between embarrassment and social anxiety*. Manuscript submitted for publication, Wake Forest University, Department of Psychology.
- Lebra, T. S. (1983). Shame and guilt: A psychocultural view of the Japanese self. *Ethos*, 11, 192–209.
- Lemerise, E. A., & Dodge, K. A. (1993). The development of anger and hostile interactions. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 537–546). New York: Guilford Press.
- Leresche, L. A. (1976). Dyadic play in Hamadryas baboons. *Behaviour*, 57, 190–205.
- Levenson, R. W. (1992). Autonomic nervous system differences among emotions. *Psychological Science*, 3, 23–27.
- Levenson, R. W. (1994). Human emotions: A functional view. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion* (pp. 123–126). Oxford, England: Oxford University Press.
- Levenson, R. W., Ekman, P., & Friesen, W. V. (1990). Voluntary facial activity generates emotion-specific autonomic nervous system activity. *Psychophysiology*, 27, 363–384.
- Levin, J., & Arluke, A. (1982). Embarrassment and helping behavior. *Psychological Reports*, 51, 999–1002.
- Lewis, M. (1993). Self-conscious emotions: Embarrassment, pride, shame, and guilt. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 353–364). New York: Guilford Press.
- Lewis, M., Alessandri, S. M., & Sullivan, M. W. (1992). Differences in shame and pride as a function of children’s gender and task difficulty. *Child Development*, 63, 630–638.
- Lewis, M., Stanger, C., Sullivan, M. W., & Barone, P. (1991). Changes in embarrassment as a function of age, sex, and situation. *British Journal of Developmental Psychology*, 9, 485–492.
- Lewis, M., Sullivan, M. W., Stanger, C., & Weiss, M. (1989). Self development and self-conscious emotions. *Child Development*, 60, 146–156.
- Lindsay-Hartz, J. (1984). Contrasting experiences of shame and guilt. *American Behavioral Scientist*, 27, 689–704.
- Lutz, C., & White, G. (1986). The anthropology of emotions. *Annual Review of Anthropology*, 15, 405–436.
- MacDonald, L. M., & Davies, M. F. (1983). Effects of being observed by a friend or stranger on felt embarrassment and attributions of embarrassment. *Journal of Psychology*, 113, 171–174.
- Marcus, D. K., Wilson, J. R., & Miller, R. S. (1996). Are perceptions of emotion in the eye of the beholder? A social relations analysis of judgments of embarrassment. *Personality and Social Psychology Bulletin*, 22, 1220–1228.
- Masters, R. D. (1988). Nice guys DON’T finish last: Aggressive and appeasement gestures in media images of politicians. In M. R. A. Chance & D. R. Omark (Eds.), *Social fabrics of the mind* (pp. 277–296). Hove, England: Erlbaum.

- Mech, L. D. (1970). *The wolf*. Garden City, NY: Natural History Press.
- Metts, S., & Cupach, W. R. (1989). Situational influence on the use of remedial strategies in embarrassing predicaments. *Communication Monographs*, *56*, 151–162.
- Miller, R. S. (1987). Empathic embarrassment: Situational and personal determinants of reactions to the embarrassment of another. *Journal of Personality and Social Psychology*, *53*, 1061–1069.
- Miller, R. S. (1992). The nature and severity of self-reported embarrassing circumstances. *Personality and Social Psychology Bulletin*, *18*, 190–198.
- Miller, R. S. (1995). On the nature of embarrassability: Shyness, social evaluation, and social skill. *Journal of Personality*, *63*, 315–339.
- Miller, R. S. (1996). *Embarrassment: Poise and peril in everyday life*. New York: Guilford Press.
- Miller, R. S., & Leary, M. R. (1992). Social sources and interactive functions of embarrassment. In M. Clark (Ed.), *Emotion and social behavior* (pp. 322–339). New York: Russell Sage Foundation.
- Miller, R. S., & Tangney, J. P. (1994). Differentiating embarrassment from shame. *Journal of Social and Clinical Psychology*, *13*, 273–287.
- Modigliani, A. (1968). Embarrassment and embarrassability. *Sociometry*, *31*, 313–326.
- Modigliani, A. (1971). Embarrassment, facework, and eye contact: Testing a theory of embarrassment. *Journal of Personality and Social Psychology*, *17*, 15–24.
- Moore, D. B. (1993). Shame, forgiveness, and juvenile justice. *Criminal Justice Ethics*, *12*, 3–25.
- Mosher, D. L., & White, B. R. (1981). On differentiating shamer and shyness. *Motivation and Emotion*, *5*, 61–74.
- Nagel, E. (1979). *The structure of science* (2nd ed.). Indianapolis, IN: Hackett.
- Ohman, A. (1986). Face the beast and fear the face: Animal and social fears as prototypes for evolutionary analysis of emotion. *Psychophysiology*, *23*, 123–145.
- Parkinson, B., & Manstead, A. S. R. (1992). Appraisal as a cause of emotion. In M. S. Clark (Ed.), *Emotion* (pp. 122–149). Newbury Park, CA: Sage.
- Parrott, W. G., Sabini, J., & Silver, M. (1988). The roles of self-esteem and social interaction in embarrassment. *Personality and Social Psychology Bulletin*, *14*, 191–202.
- Parrott, W. G., & Smith, S. F. (1991). Embarrassment: Actual vs. typical cases and classical vs. prototypical representations. *Cognition and Emotion*, *5*, 467–488.
- Pellis, S. M., & Pellis, V. C. (1993). Influence of dominance on the development of play fighting in pairs of male Syrian golden hamsters (*Mesocricetus auratus*). *Aggressive Behavior*, *19*, 293–302.
- Plutchik, R. (1984). Emotions: A general psychoevolutionary theory. In P. Ekman & K. Scherer (Eds.), *Approaches to emotion* (pp. 197–220). Hillsdale NJ: Erlbaum Press.
- Preuschoft, S. (1992). “Laughter” and “smile” in Barbary macaques (*Macaca sylvanus*). *Ethology*, *91*, 220–236.
- Ramenofsky, M. (1984). Agonistic behaviour and endogenous plasma hormones in male Japanese quail. *Animal Behaviour*, *32*, 698–708.
- Redican, W. K. (1975). Facial expressions in nonhuman primates. In L. A. Rosenblum (Ed.), *Primate behavior* (pp. 103–194). New York: Academic Press.
- Redican, W. K. (1982). An evolutionary perspective on human facial displays. In P. Ekman (Ed.), *Emotion in the human face* (2nd ed., pp. 212–280). New York: Cambridge University Press.
- Ricks, C. (1974). *Keats and embarrassment*. Oxford, England: Clarendon Press.
- Roseman, I. J., Spindel, M. S., & Jose, P. E. (1990). Appraisals of emotion-eliciting events: Testing a theory of discrete emotions. *Journal of Personality and Social Psychology*, *59*, 899–915.
- Roseman, I. J., Wiest, C., & Swartz, T. (1994). Phenomenology, behaviors, and goals differentiate discrete emotions. *Journal of Personality and Social Psychology*, *67*, 206–221.
- Rothstein, S. I. (1980). The preening invitation or head-down display of parasitic cowbirds: II. Experimental analysis and evidence for behavioural mimicry. *Behaviour*, *75*, 148–184.
- Ruch, W. (1993). Exhilaration and humor. In M. Lewis & J. M. Haviland (Eds.), *The handbook of emotion* (pp. 605–616). New York: Guilford Press.
- Ruma, E. H. (1967). *Conscience development in delinquents and non-delinquents: The relationship between moral judgment, guilt, and behavior*. Unpublished doctoral dissertation, Ohio State University, Department of Psychology.
- Ruma, E. H., & Mosher, D. L. (1967). Relationship between moral judgment and guilt in delinquent boys. *Journal of Abnormal Psychology*, *72*, 122–127.
- Rummel, L., & Goetzinger, C. (1975). The communication of intraspecific aggression in the common loon. *The Auk*, *92*, 333–346.
- Russell, J. A. (1991). Culture and categorization of emotion. *Psychological Bulletin*, *110*, 426–450.
- Russell, J. A. (1994). Is there universal recognition of emotion from facial expression? A review of cross-cultural studies. *Psychological Bulletin*, *115*, 102–141.
- Sabini, J. (1994). *Social psychology* (2nd ed.). New York: Norton.
- Sandegren, F. E. (1976). Agonistic behavior in the male northern elephant seal. *Behaviour*, *57*, 136–158.
- Sattler, J. M. (1965). A theoretical, developmental, and clinical investigation of embarrassment. *Genetic Psychology Monographs*, *71*, 19–59.
- Sattler, J. M. (1966). Embarrassment and blushing: A theoretical review. *Journal of Social Psychology*, *69*, 117–133.
- Scheff, T. J. (1988). Shame and conformity: The deference emotion system. *American Sociological Review*, *53*, 395–406.
- Schenkel, R. (1967). Submission: Its features and functions in wolf and dog. *American Zoologist*, *7*, 319–329.
- Scherer, K. R. (1994). Emotion serves to decouple stimulus and response. In P. Ekman & R. J. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 127–130). New York: Oxford University Press.
- Schill, T., & Althoff, M. (1975). Drug experiences, knowledge, and attitudes of high- and low-guilt individuals. *Journal of Consulting and Clinical Psychology*, *43*, 106.
- Schlenker, B. R., & Leary, M. R. (1982). Social psychology and self-presentation: A conceptualization and model. *Psychological Bulletin*, *92*, 641–669.
- Semin, G. R., & Manstead, A. S. R. (1982). The social implications of embarrassment displays and restitution behavior. *European Journal of Social Psychology*, *12*, 367–377.
- Semin, G. R., & Papadopoulou, K. (1990). The acquisition of reflexive social emotions: The transmission and reproduction of social control through joint action. In G. Duveen & B. Lloyd (Eds.), *Social representations and the development of knowledge* (pp. 107–125). Cambridge, England: Cambridge University Press.
- Sharkey, W. F. (1991). Intentional embarrassment: Goals, tactics, and consequences. In W. Cupach & S. Metts (Eds.), *Advances in interpersonal communication research* (pp. 105–128). Normal: Illinois State University Press.
- Sharkey, W. F., & Stafford, L. (1990). Responses to embarrassment. *Human Communication Research*, *17*, 315–342.
- Shaver, P., Schwartz, J., Kirson, D., & O'Connor, C. (1987). Emotion

- knowledge: Further exploration of a prototype approach. *Journal of Personality and Social Psychology*, 52, 1061–1086.
- Shearn, D., Bergman, E., Hill, K., Abel, A., & Hinds, L. (1990). Facial coloration and temperature responses in blushing. *Psychophysiology*, 27, 687–693.
- Shearn, D., Bergman, E., Hill, K., Abel, A., & Hinds, L. (1992). Blushing as a function of audience size. *Psychophysiology*, 29, 431–436.
- Shweder, R. S. (1993). The cultural psychology of the emotions. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 417–431). New York: Guilford Press.
- Silk, J. B. (1987). Correlates of agonistic and competitive interactions in pregnant baboons. *American Journal of Primatology*, 12, 479–495.
- Silver, M., Sabini, J., & Parrott, W. G. (1987). Embarrassment: A dramatic account. *Journal for the Theory of Social Behaviour*, 17, 47–61.
- Smith, C., & Ellsworth, P. (1985). Patterns of cognitive appraisal in emotion. *Journal of Personality and Social Psychology*, 48, 813–838.
- Solomon, R. C. (1976). *The passions*. New York: Anchor Press/Doubleday.
- Stipek, D., Recchia, S., & McClintic, S. (1992). Self-evaluation in young children. *Monographs of the Society for Research in Child Development*, 57, 1–84.
- Sueda, K., & Wiseman, R. I. (1992). Embarrassment remediation in Japan and the United States. *International Journal of Intercultural Relations*, 16, 159–173.
- Swanson, H. H. (1990). Sex differences in behavioral consequences of defeat in the rat are not organized by testosterone during early development. *Aggressive Behavior*, 16, 341–344.
- Tangney, J. P. (1990). Assessing individual differences in proneness to shame and guilt: Development of the Self-Conscious Affect and Attribution Inventory. *Journal of Personality and Social Psychology*, 59, 102–111.
- Tangney, J. P. (1991). Moral affect: The good, the bad, and the ugly. *Journal of Personality and Social Psychology*, 61, 598–607.
- Tangney, J. P. (1992). Situational determinants of shame and guilt in young adulthood. *Personality and Social Psychology Bulletin*, 18, 199–206.
- Tangney, J. P., & Fischer, K. W. (1995). *Self-conscious emotions: The psychology of shame, guilt, embarrassment, and pride*. New York: Guilford Press.
- Tangney, J. P., Marschall, D., Rosenberg, K., Barlow, D. H., & Wagner, P. (1992). *Children's and adult's autobiographical accounts of shame, guilt, and pride experiences: A qualitative analysis of situational determinants and interpersonal concerns*. Manuscript submitted for publication, George Mason University.
- Tangney, J. P., Miller, R. S., Flicker, L., & Barlow, D. H. (1996). Are shame, guilt, and embarrassment distinct emotions? *Journal of Personality and Social Psychology*, 70, 1256–1264.
- Tavuchis, N. (1991). *Mea culpa: A sociology of apology and reconciliation*. Stanford, CA: Stanford University Press.
- Tomkins, S. S. (1963). *Affect, imagery, consciousness. Vol. 2: The negative affects*. New York: Springer.
- Tomkins, S. S. (1984). Affect theory. In K. Scherer & P. Ekman (Eds.), *Approaches to emotion* (pp. 163–196). Hillsdale, NJ: Erlbaum.
- Turiel, E. (1983). *The development of social knowledge*. Cambridge, England: Cambridge University Press.
- van Hooff, J. A. R. A. M. (1972). A comparative approach to the phylogeny of laughter and smiling. In R. A. Hinde (Ed.), *Nonverbal communication* (pp. 209–237). Cambridge, England: Cambridge University Press.
- Wicker, F. W., Payne, G. C., & Morgan, R. D. (1983). Participant descriptions of guilt and shame. *Motivation and Emotion*, 7, 25–39.
- Wosegien, A., & Lamprecht, J. (1989). Nodding: An appeasement behaviour of pigeons (*Columba livia*). *Behaviour*, 108, 44–56.
- Wright, L. (1973). Functions. *Philosophical Review*, 82, 139–168.
- Yamagiwa, J. (1987). Intra- and inter-group interactions of an all-male group of Virunga mountain gorillas (*Gorilla gorilla beringei*). *Primates*, 28, 1–30.
- Yamagiwa, J. (1992). Functional analysis of social staring behavior in an all-male group of mountain gorillas. *Primates*, 33, 523–544.
- Young, R. C., Keltner, D., & Lingswieler, R. (1997). *Appeasement in the courtroom and politics*. Manuscript in preparation, University of California, Berkeley, Department of Psychology.

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