

## **Social Functions of Emotions at Four Levels of Analysis**

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In this paper we integrate claims and findings concerning the social functions of emotions at the individual, dyadic, group, and cultural levels of analysis. Across levels of analysis theorists assume that emotions solve problems important to social relationships in the context of ongoing interactions. Theorists diverge, however, in their assumptions about the origins, defining characteristics, and consequences of emotions, and in their preferred forms of data. We illustrate the differences and compatibilities among these levels of analysis for the specific case of embarrassment. We close by suggesting research strategies that incorporate a social-functional perspective.

### **INTRODUCTION**

The primary function is to mobilize the organism to deal quickly with important interpersonal encounters.

—Ekman, 1992, p. 171

Emotions are a primary idiom for defining and negotiating social relations of the self in a moral order.

—Lutz & White, 1986, p. 417

Early studies of emotion tended to focus on the “intrapersonal” aspects of emotion, mapping the determinants and characteristics of emotional response within the individual.<sup>1</sup> Many of the initial functional accounts of emotion similarly highlighted how emotions solve problems within the

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<sup>1</sup> The obvious exception to this statement is the research on the interpersonal or inter-organismic functions of facial expressions, beginning with Darwin (1872/1965), and carried on since the 1960s by Ekman (1993), Izard (1977), and others.

individual, for example as “interrupts” that prioritise multiple goals of the individual (e.g. Simon, 1967; Tomkins, 1962).

Several developments have led researchers to examine more closely the “interpersonal” functions of emotions. Researchers have begun to uncover how emotions structure relationships between parents and children (e.g. Bowlby, 1969), siblings (Dunn & Munn, 1985), and romantic partners (Levenson & Gottman, 1983). Emotions, such as anger and embarrassment, have been shown to have systematic effects on other individuals (e.g. Averill, 1980; Keltner & Buswell, 1997; Miller & Leary, 1992). Ethological studies suggest how emotions guide social interactions such as courtship and appeasement rituals (Eibl-Eibesfeldt, 1989). Finally, the growing contact between anthropologists (Abu-Lughod, 1986; Lutz & White, 1986) and psychologists (Haidt, Koller, & Dias, 1993; Markus & Kitayama, 1991; Mesquita & Frijda, 1992; Russell, 1991) in the new field of cultural psychology (Shweder, 1990) has led to greater awareness of the ways that emotions construct and are constructed by cultural practices and institutions.

These converging trends have inspired a wave of research and theory in a variety of disciplines on the connections between emotions and the social environment (Campos, Campos, & Barrett, 1989; Clark, 1990; Frijda, 1986; Kemper, 1993; Lutz & Abu-Lughod, 1990; de Rivera & Grinkis, 1986; Tooby & Cosmides, 1990). Frijda and Mesquita (1994) have written thoughtfully about the social functions of emotions, particularly anger, shame, and guilt. However, we think the time is right for a more general discussion of the assumptions, claims, and empirical findings that can be brought together into a social functional perspective on the emotions.

Our aims in this review are as follows. First, we discuss what it means to take a social functional approach in the study of emotion. Second, we review claims about the social functions of emotion in anthropology, ethology, history, psychology, and sociology, highlighting illustrative empirical findings and conceptual issues. We then apply a social functional analysis to embarrassment, and conclude with a discussion of needed lines of empirical and theoretical inquiry.

We hope that this essay contributes some clarification to a growing field by distinguishing between social functions at four levels of analysis: (1) individual (intrapersonal); (2) dyadic (between two individuals); (3) group (a set of individuals that directly interact and has some temporal continuity); and (4) cultural (within a large group that shares beliefs, norms, and cultural models).<sup>2</sup>

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<sup>2</sup> Our framework was influenced by Averill's proposal (1992) that claims about emotions can be placed at the biological, psychological, or social levels of analysis. Although Averill's social level is clearly most relevant to the present paper, our review deals with studies that differ in their units of analysis, methods, and preferred forms of data, but would be classified at the social level. We therefore expanded Averill's social level into four different levels.

As we describe later, researchers working at each level differ in the systems they refer to, their preferred kinds of data, and the theoretical traditions within which they explain the origins and defining characteristics of emotions. Our aim will be to specify the differences and similarities in the accounts offered at each of the four levels, and to show how these levels can be put together to create a more complete understanding of the social functions of emotions.

## SOCIAL-FUNCTIONAL ACCOUNTS OF EMOTION

Functional explanations, although a bit more recent to the field of emotion (Johnson-Laird & Oatley, 1992; Keltner & Gross, this issue), have long been used in biology and the social sciences. Functional explanations refer to the history of some object (e.g. behaviour or trait), as well as the regular consequences that benefit the system in which the object or trait is contained. As Merton (1968) stated, functional explanations hinge on "interpreting data by establishing their consequences for larger structures in which they are implicated".

Functional accounts vary according to the kind of system being analysed. For biological systems within an individual organism, a strong functionalism that specifies which features were shaped or selected for the consequences they bring about is usually appropriate. For example, the heart can only be understood as a pump working within a circulatory system "designed" by natural selection to fulfil a specific function—pumping blood at variable rates—within that larger system. At the cultural level of analysis, greater caution must be observed when making functional claims. Some institutions and cultural practices may have been designed to benefit the rich and powerful, as a Marxist might say, or to perpetuate themselves, as a meme theorist might say (Dawkins, 1976). But because there is no over-arching selection mechanism culling out inefficient or poorly adapted cultures, one cannot assume (as Malinowski did in his early pronouncements), that every practice and every artefact serves a "vital" function and "represents an indispensable part within a working whole" (Malinowski, 1926, quoted by Emmet, 1967). As a consequence, current cultural anthropologists generally employ a milder functionalism. They look at cultural facts and practices to see how they may play self-regulating or self-maintaining roles within larger systems, without assuming that every cultural practice has a conservative or stabilising effect. Because people have agency in a way that biological subsystems do not, it is now widely recognised that the best-laid plans of ruling elites are often contested and subverted by those they are meant to control.

Functional approaches to the emotions should therefore vary by level of analysis as well. Theorists working at the individual and dyadic levels of

analysis, concerned with the effects of emotions within the individual or between interacting individuals (e.g. Bowlby, 1969; Ekman, 1992; Izard, 1977; Nesse, 1990, Ohman, 1986; Plutchik, 1980), espouse a functionalism that is consistent with adaptationist arguments found in evolutionary theory. These theorists argue that emotions were designed by natural selection, and that the core components of emotions are biologically based and genetically coded. Within an evolutionary framework it can be assumed that emotional expressions and action tendencies were selected because they produced consequences that improved the individual's inclusive fitness.<sup>3</sup>

Many theorists working at the group and cultural levels of analysis, in contrast, are engaged in what Geertz (1973) called an "interpretive science" in search of meaning, rather than an experimental science in search of laws and mechanisms. Emotions are seen as cultural products, constructed by individuals or groups in social contexts, and linked to construals of the self, patterns of social hierarchy, language, or requirements of socioeconomic organisation (Lutz & Abu-Lughod, 1990). Social constructions often have consequences, but there is no equivalent to natural selection, selecting the emotional constructions with the best consequences. Rather, socially constructed emotions fit with social structures and other cultural facts in ways that make sense from an interpretive viewpoint, rather than an efficiency viewpoint.

Despite these differences, theorists at all levels of analysis address a few common questions, such as: Why do people have emotions? What are the consequences of having and expressing emotions, and how might those consequences reveal what emotions were designed or constructed to do? In answering these questions, theorists at all levels also share a few assumptions. First, social functional accounts of emotions assume that people are social by nature, and meet the problems of survival in relationships (e.g. Lutz & White, 1986). Second, social-functional accounts portray emotions as means of co-ordinating social interactions and relationships to address those problems (e.g. Averill, 1980; Eibl-Eibesfeldt, 1989; Ekman, 1992; Lutz & White, 1986; Tooby & Cosmides, 1990). Emotions are thought of as relatively automatic, involuntary, and rapid responses that help humans regulate, maintain, and use different social relationships, usually (though not always) for their own benefit (Bowlby, 1969; Frank, 1988; Hazan & Shaver, 1987; Lutz & White, 1986; Nesse, 1990; Johnson-Laird & Oatley, 1992). Third, emotions are portrayed as dynamic processes that mediate the individual's relation to a continually changing social environment

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<sup>3</sup> Although any particular feature might have begun as an accidental "spandrel" (Gould, 1996) or as a "serviceable associated habit" (Darwin, 1872/1965), which was later shaped by selection pressures.

(Campos et al., 1989; Lazarus, 1991; Rosaldo, 1984), although the length of time that emotions are said to last varies from seconds or minutes (Ekman, 1992) to weeks or years (Frijda, Mesquita, Sonnemans, & Van Goozen, 1991).

Given these shared assumptions, there is every reason to believe that functional analyses of emotion will be "consilient" across levels (Wilson, 1998); that is, that emotion theorists can link and interrelate the four levels of analysis. We offer such a multilevel account of embarrassment near the end of this essay. But first, we summarise the claims and findings relevant to each of the four levels of analysis.

## Social Functions of Emotions at the Individual Level of Analysis

At the individual level of analysis, researchers generally focus on the patterns of change of intra-individual components of emotion. The individual organism is the system with respect to which the functions of emotions are interpreted. Research investigates emotion-related changes in the endocrine, autonomic, and central nervous systems (Davidson, 1993; LeDoux, 1996; Levenson, 1992) and emotion-related appraisal, action tendency, memory, perception, and judgement (Clore, 1994; Frijda, 1986; Lazarus, 1991; Scherer, 1984; Schwarz, 1990; Smith & Ellsworth, 1985). The preferred forms of data include physiological measurement, self-reports of emotion phenomenology, and the effects of emotion on measures of judgement, memory, and social perception.

Although researchers interested in emotion-related physiology, experience, and cognition have tended to focus on patterns of intrapersonal change, some of these changes are understood as preparations for or reactions to specific problems that arise in social interaction. Specific brain structures and neurotransmitter systems underlie emotion-related play and dominant aggression (Panksepp, 1982). Some emotion-related action tendencies are motivated by social concerns, such as sharing or providing comfort (Frijda & Mesquita, 1994).

Theorists have proposed that emotional responses within the individual serve two broad social functions (Oatley & Jenkins, 1996). First, the conscious feeling of emotion produced by appraisal processes is believed to *inform the individual* about specific social events or conditions, typically needing to be acted upon and changed (Campos et al., 1989). Affect is a kind of information (Clore, 1994; Schwarz, 1990). As examples, theorists have proposed that the feeling of anger provides an assessment of the fairness of events (Solomon, 1990), love informs the individual of the level of commitment to another (Frank, 1988), happiness may signal the reproductive potential of certain social actions (Nesse, 1990), and shame informs

the individual of his or her lower social status (Tangney, Miller, Flicker, & Barlow, 1996). As compelling as these claims seem, few empirical studies have directly examined whether specific emotions influence social judgments (for an exception, see Weiner, 1993, on the role of anger and sympathy in punitive judgements). Most studies of the effects of affect on cognition have examined more general positive and negative mood states (Schwarz, 1990).

Second, it has been claimed that certain emotion-related physiological (e.g. Levenson, 1992) and cognitive processes (Clore, 1994; Schwarz, 1990) *prepare the individual* to respond to problems or opportunities that arise in social interactions, even in the absence of any awareness of an eliciting event (Oatley & Jenkins, 1996). For example, empirical studies show that anger involves a shift of blood away from the internal organs towards the hands and arms (Levenson, Ekman, & Friesen, 1990), and heightened sensitivity to the injustices of other's actions (Keltner, Ellsworth, & Edwards, 1993), which presumably facilitates responses to threat or injustice. More generally, it follows that emotion-related physiology and cognition will be finely tuned to the specific nature of social events, as evident in brain-imaging studies showing that facial expressions of anger, disgust, fear, and sadness evoke activation in different brain regions in the perceiver (for a review, see Keltner & Ekman, in press). It is also implied that emotional responses within the individual will change in response to changes in the emotion-eliciting event. A recent study reveals that the effects of anger on social cognition appear to diminish when the anger-producing injustice is redressed (Lerner, Goldberg, & Tetlock, 1998).

## Social Functions of Emotions at the Dyadic Level of Analysis

At the dyadic level of analysis, researchers focus on how emotions organise the interactions of individuals in meaningful relationships. The interacting dyad is the system with respect to which the consequences of behaviours are interpreted. Researchers here focus on the communication of emotion in facial, vocal, and postural channels (e.g. DePaulo, 1992; Fernald, 1992; Fridlund, 1992; Klinnert, Campos, Sorce, Emde, & Svejda, 1983; Ohman, 1986; Scherer, 1986), properties of dyadic emotions, such as "contingency", "matching", "linkage", and "synchrony" (e.g. Field, Healy, Goldstein, & Uthertz, 1990; Levenson & Gottman, 1983; Tronick, 1989), and how emotions operate in other social interactions, such as greeting rituals (Eibl-Eibesfeldt, 1989), discourse (Bretherton, Fritz, Zahn-Waxler, & Ridgeway, 1986), and attachment and caregiving (Bowlby, 1969; Hazan & Shaver, 1987). The preferred forms of data are laboratory and naturalistic observations of interactions in humans and other species,

and manipulations of emotional behaviour as social stimuli (e.g. Dimberg & Ohman, 1996).

Theorists working at the dyadic level of analysis have argued that emotional expressions *help individuals know others' emotions, beliefs, and intentions*, thus rapidly co-ordinating social interactions. Thus, relevant evidence indicates that the communication of emotion conveys information to receivers about senders': Current emotions (Ekman, 1993; Scherer, 1986), social intentions (Fridlund, 1992), and orientations towards the relationship, for example, as a dominant or submissive individual (Knutson, 1996). The communication of emotion also conveys information about objects in the environment: brief exposure to a model's fearful behaviour towards a phobic object (snake) leads observers to develop similar fearful responses to the phobic object (Mineka & Cook, 1993); and children rely on parents' facial emotion to assess whether ambiguous situations, stimuli, and people are safe or dangerous (Klinnert et al., 1983).

Second, emotional communication *evokes complementary and reciprocal emotions in others* that help individuals respond to significant social events. For example, research has documented that anger displays elicit fear-related responses, even when those displays are presented subliminally (Dimberg & Ohman, 1996). Similarly, displays of distress elicit sympathy-related responses in observers (Eisenberg et al., 1989). In turn, emotions evoked in others are associated with behaviours, such as avoidance, helping, affiliation, and soothing, which help meet the goals of interacting individuals.

Third, emotions *serve as incentives or deterrents for other individuals' social behaviour* (Klinnert et al., 1983). Developmental research finds that emotional responses reward others' shifts in attention and goal-directed behaviour (Tronick, 1989), and thus play an important role in learning. In a similar vein, studies find that laughter occurs at the end of utterances (Provine, 1993), suggesting that laughter rewards desirable social behaviour.

## Social Functions of Emotions at the Group Level of Analysis

At the group level of analysis, researchers focus on how emotions help collections of interacting individuals who share common identities and goals meet their shared goals, or the superordinate goals of the group. Groups, such as families, work groups, or social clubs, are the systems with respect to which the functions of emotion are interpreted. Researchers focus on phenomena such as: The differential distribution of emotion across group members (e.g. Collins, 1990; Kemper, 1993); collective emotion (Durkheim, 1915/1954; de Waal, 1996); emotion directed at other

groups (e.g. Frijda & Mesquita, 1994); and role-related implications of emotional experience in group contexts (e.g. Clark, 1990). The preferred forms of data include the behaviour of group members in naturalistic and experimental contexts (e.g. Keltner, Young, Heerey, Oemig, & Monarch, 1998), ethnographies of small groups of people (Abu-Lughod, 1986; Briggs, 1970), and animal groups (e.g. de Waal, 1996), although such descriptions can sometimes be placed at the dyadic and cultural levels of analysis as well.

Although few empirical studies can be placed at the group level of analysis, theorists have made several provocative claims worthy of empirical study. First, emotions have been claimed to *help individuals define group boundaries and identify group members* (e.g. Durkheim, 1915/1965). Collective ecstasy and awe may give group members the sense of communal identity (Heise & O'Brien, 1993), whereas fear, hatred, and disgust towards nongroup members may sharpen group boundaries (Heise & O'Brien, 1993; Frijda & Mesquita, 1994). Consistent with these speculations, the experimental induction of fear of death has been shown to increase ingroup solidarity and outgroup derogation (Greenberg et al., 1990). Social anxiety additionally motivates individuals to avoid behaviours that would ostracise them from groups (Baumeister & Tice, 1990).

Within groups, the differential experience and display of emotion may *help individuals define and negotiate group-related roles and statuses* (e.g. Clark, 1990; Collins, 1990). Certain emotions are said to relate to, or constitute different roles and social statuses, for example, sympathy is part of playing a nurturant role, and displays of embarrassment mark lower status. Consistent with this view, empirical studies have documented associations between an individual's status in a group and differences in joking and laughter (Cosier, 1960), and embarrassment, anger, contempt, and fear (Keltner et al., 1998). Several cultures have a word that describes both a feeling, related to shame or embarrassment, and a deferential action directed at high-status individuals (*lajya* and *hasham*; see later). Additional research needs to establish whether the differential experience and display of emotion actually establishes an individual's role or status in a group, and whether these effects are independent of individual differences in the predisposition towards certain emotions.

Finally, recent animal evidence suggests that collective emotional behaviour may *help group members negotiate group-related problems*. In a suggestive study, chimpanzee groups were observed to engage in exuberant, celebratory affiliation just prior to the allocation of valuable resources (de Waal, 1996). This behaviour was believed to solidify social bonds that might be threatened by conflict related to distributing resources.



## Social Functions of Emotions at the Cultural Level of Analysis

At the cultural level of analysis, researchers have focused on how emotions are shaped by historical and economic factors, on how emotions are embedded in cultural institutions and practices, and on the cultural norms and scripts for the proper expression and experience of emotions. The culture is the system with respect to which the functions of emotion are interpreted. Cultures are sometimes equated with nations or societies, but more often a culture is restricted to a community of shared meanings, as in D'Andrade's (1984, p. 116) treatment of culture as: "learned systems of meaning, communicated by means of natural language and other symbol systems, having representational, directive, and *affective functions*, and capable of creating cultural entities and particular senses of reality" (emphasis added). Culture not only creates the social world, it guides people in the affective reactions needed to function in that world. Some of the main areas of research include: How culture shapes emotion by shaping the self (Lutz, 1988; Markus & Kitayama, 1991); the social structures within which emotions are experienced (Abu-Lughod, 1986; Fiske, 1992); and culture-specific valuations of the experience and expression of emotion, for example in relation to gender, age, and social status (e.g. Lutz, 1990; Shweder & Haidt, in press). The methodological emphasis is interpretive, and the preferred forms of data include ethnographies and "thick descriptions" (Geertz, 1973) of social practices; linguistic formations such as emotion lexicons (Russell, 1991), and metaphors (Lakoff, 1987); and historical documents and other meaning-laden cultural products, such as etiquette manuals (Elias, 1978) or cultural myths and legends (Miller, 1997).

Theorists working at the cultural level of analysis have attributed several social functions to emotion, some of which overlap with those at the group level of analysis. First, emotions are claimed to *play a critical role in the processes by which individuals assume cultural identities*. Culture-specific concepts of emotional deviance are believed to motivate culturally appropriate behaviour (Thoits, 1985). Embarrassment (Goffman, 1967) motivates conformity and the proper playing of one's roles, whereas disgusts motivates the avoidance and shunning of people who violate key values within a culture (Rozin, Haidt, & McCauley, in press).

Emotions are also embedded in socialisation practices that *help children learn the norms and values of their culture*. For example, developmental (e.g. Bretherton, et al., 1986; Dunn & Munn, 1985) and cross-cultural studies (e.g. White, 1990) indicate that emotional conflicts engage individuals in conversations about cultural notions of right and wrong and redressing wrongdoing. Displays of disgust by parents, for example, are likely to be

important in toilet training and negative socialisation (Rozin et al., in press). The emotional reactions of parents and other “local guardians of the moral order” (Shweder, Mahapatra, & Miller, 1987) may be the most important guides that children use in figuring out the contours of their moral world.

Finally, some theorists have asserted that cultural constructions of emotional experience *reify and perpetuate cultural ideologies and power structures* (e.g. Hochschild, 1990). Much as at the group level, the selective experience and expression of emotion for certain groups justifies their position with a culture. Thus, drawing on stereotypes of the emotions of subordinated groups, Lutz has argued that cultural discourses about female emotionality relegate women to positions of subordinate status (Lutz, 1990). It would be interesting to document how gender stereotypes of emotion are indeed used to justify subordinate positions for women, and whether these stereotypes actually create gender differences in emotional response.

### CASE STUDY: THE SOCIAL FUNCTIONS OF EMBARRASSMENT

We have reviewed evidence and theory about the many social functions of emotion. Emotions inform people about social events and prepare their bodies and minds for action. Emotions co-ordinate social interactions. Emotions help individuals define their identities and play their roles within groups, and emotions mark or strengthen boundaries between groups. Finally, emotions simultaneously create and are shaped by cultural practices and symbol systems. All of these functions, interpreted with respect to four different kinds of systems, can occur simultaneously and in mutually interlocking ways. Although conflicts or incompatibilities across levels are possible in principle, in practice the social functions of emotion at one level are likely to work in tandem with the social functions of the adjoining levels. To illustrate the compatibility and consilience of these various functional perspectives, we will work through the case of embarrassment in detail.

Initially, most theorists ignored the social functions of embarrassment. Darwin’s analysis of embarrassment focused on the blush, which he posited was simply a side-effect of social attention (Darwin, 1872/1965). Although Goffman (1967) hinted at certain functions of embarrassment, he primarily concentrated upon its chaotic display and painful experience. Recent studies of the causes, characteristics, and social consequences of embarrassment, however, have led researchers to claim that embarrassment serves an appeasement function, reconciling social relations following transgressions of social norms (Keltner & Buswell, 1997; Miller & Leary, 1992). At

each level of analysis, we see that embarrassment serves this appeasement function in a different way.

At the individual level of analysis, self-report narrative studies have revealed that prototypical forms of embarrassment typically follow some disruption in social interactions (Parrott & Smith, 1991; Silver, Sabini, & Parrott, 1987). Embarrassment is defined by the sense of personal failure and lowered status (e.g. Tangney et al., 1996), which may signal to the individual which social actions to avoid, thus motivating participants to stay within the bounds of appropriate behaviour. Consistent with this claim, evidence indicates that people will forego personal gain to avoid embarrassment, and once embarrassed, they engage in corrective behaviour that restores their social standing (see Keltner & Buswell, 1997).

Social transgressions require some form of appeasement or repair. Empirical studies at the dyadic level of analysis indicate that the display of embarrassment brings about reconciliation. Embarrassment is signalled by blushing, a controlled smile, face touching, downward movements of the head and eyes, and inhibited speech (Keltner & Buswell, 1997). These behaviours have been shown to signal the embarrassed person's commitment to social norms, and to prompt forgiveness in others (for a review, see Keltner, Young, & Buswell, 1997).

Theorists working at the group level of analysis have proposed, consistent with our general review, that embarrassment helps establish and maintain group hierarchies and norms (e.g. Clark, 1990). How might this work? One possibility is that embarrassment is embedded in group practices, which have specific consequences at the individual and dyadic levels of analysis. Group practices, such as teasing and shaming, produce different levels of embarrassment in group members (Keltner et al., 1998). For individuals, the differential experience of embarrassment in group contexts may signal their positions in the group hierarchy. Dyadic interactions in teasing and shaming may lead to reconciliation and enhanced group bonds.

Finally, recent ethnographies reveal how self-conscious emotions related to embarrassment are involved in the assumption of culturally appropriate identities and the perpetuation of cultural norms and values. Awlad-Ali Bedouins and Oriya Indians have long traditions of strong patriarchal authority in which open expressions of female sexuality bring dishonour and threaten to destabilise masculine authority. When in the presence of high-ranking men, it is considered a virtue for women to display *hasham* among the Awlad-Ali (Abu Lughod, 1986) and to display *lajya* in Orissa, India (Menon & Shweder, 1994). Expressions of *hasham* and *lajya* honour patriarchal ideologies and hierarchies, and the possession of a well-cultivated liability to experience and express these emotions is a path to female honour and virtue in both cultures. Recent cross-cultural work demonstrates that if *lajya* must be equated with an English emotion

word, that word is embarrassment (Haidt & Keltner, in press). However, because North American middle class culture values hierarchy less and the expression of female sexuality more than do Oriyas, the experience of embarrassment cannot be equated with the experience of *lajya*. Embarrassment for Americans seems to lack the element of virtue and even pride that can be associated with the experiences of *lajya* and *hasham*.

## RESEARCH STRATEGIES FOR THE STUDY OF SOCIAL FUNCTIONS OF EMOTIONS

We have attempted to place many lines of research on the social functions of emotion into a taxonomy of four levels of analysis: Individual, dyadic, group, and cultural, all of which are complementary and interrelatable. In this final section, we look to the future and ask how a social-functional perspective, cognisant of different levels of analysis, can guide research. Most generally, we believe that integrative, cross-disciplinary work may be furthered by working at multiple levels of analysis, looking to adjoining levels for ideas and hypotheses. In terms of concrete research questions, we believe a social functional perspective points to two general issues that have only recently begun to receive systematic attention.

First, social functional accounts assume that emotions solve social problems. Emotions arise in response to social problems (e.g. injustice, establishing attachments, negotiating status hierarchies), and presumably change as those problems (or opportunities) are met. The dynamic relations between elements of emotional response and changing social problems merit attention. At the individual level of analysis, emotions can be linked to specific kinds and features of changing social events (e.g. Kemper, 1993). At the dyadic level of analysis, research should continue to examine how specific emotions emerge in response to relational problems, as has been done in studies relating the emergence of adolescent social hierarchies and the development of embarrassment, shame, and social anxiety (Ohman, 1986). Finally, it should be possible to predict and measure changes in the emotional life of groups and cultures as new social problems arise. For example, as individualism, commercialism, and changing sex roles spread through the young generation of a traditional society, do elders try to elicit more shame, and engage in more teasing and shaming rituals? With so much of Asia rapidly adopting Western modes of commerce, dress, and even housing, it should be possible to document changes in the distribution and valuation of emotions (including patterns of use, and emotion concepts) over the course of a decade.

Second, social functional perspectives posit that inferences about social functions derive from analyses of the systematic consequences of emotions.

Each emotion should have systematic effects on other individuals and features of the social environment that, for the most part, await discovery. Model research and relevant analytic procedures for ascertaining the social consequences of emotions have emerged in the study of more naturalistic emotional interactions between siblings (e.g. Dunn & Munn, 1985), romantic relationships (Levenson & Gottman, 1983), and parent-child interactions (e.g. Field et al., 1990). Experimental manipulations of emotional behaviour, as has been done in studies of the responses evoked by depressive maternal style (e.g. Cohn & Tronick, 1983) and posed facial expressions (Dimberg & Ohman, 1996), have the promise of making similar contributions to an understanding of the social functions of emotions.

In sum, the expansion of scholarship from intrapersonal to interpersonal functions of emotion points to several promising lines of enquiry that may integrate the insights and strengths of different disciplines. This conceptually and methodologically varied work can be understood and integrated by distinguishing among the individual, dyadic, group, and cultural levels of analysis. All four are necessary to understand the social functions of emotions.

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