

CHAPTER 24



Gender and Emotion in Context

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Gender differences in emotional functioning are widely documented, but are often inconsistent across personality, social, cultural, and situational variables, as well as types of emotional processes, quality of emotions, and task characteristics. This is not surprising, considering the adaptive communicative and motivational functions that emotions serve. Since males and females are often socialized to have different motives and goals—depending on their ages, cultural backgrounds, and socialization histories—gender differences should occur in emotional processes, but should also fail to generalize broadly, instead varying as a function of these same factors. Social/interpersonal goals that may differ for males and females include culturally prescribed gender roles (e.g., the role of child caretaker vs. economic provider); social motives, such as needs for intimacy versus control; and adapting to the power and status imbalances between the two sexes, in which men typically have higher power and status than do women (see Brody, 1999). Intrapersonal processes may also differ for males and females, including the ways in

which emotions and conflict are regulated and the types of self-schemas (e.g., independence vs. interdependence) that are maintained (Cross & Madson, 1997). Both interpersonal and intrapersonal processes may be influenced by a complex interaction or feedback loop between gender differences in underlying biological processes (such as temperament) and social and cultural responses to those differences (especially on the part of caretakers), which are in turn influenced by cultural values surrounding gender, gender roles, and differential emphases on collectivism versus individualism.

Recent research has focused on the complexities of when and how gender differences vary, with the theoretical frame being that gender differences in emotional functioning are both mediated and moderated by sociocultural, cognitive, biological, and behavioral variables. In turn, the variables that are found either to moderate or to mediate gender differences in emotional functioning give clues as to their etiology. In our chapter, we highlight contextual variations in gender differences in several different emotional processes, focusing on normal

adult populations. We also present an updated theoretical model for the etiology of gender differences.

STEREOTYPES AND DISPLAY RULES

The stereotype that females are more emotional than men is pervasive across several different cultures (Timmers, Fischer, & Manstead, 2003). Among North American samples, women are believed to be more emotionally intense (Robinson & Johnson, 1997), as well as more emotionally expressive (e.g., smiling, laughing, crying) and more skilled in the use of nonverbal cues related to emotion (Briton & Hall, 1995). However, stereotypes are also emotion-specific: Happiness, embarrassment, surprise, sadness, fear, shame, and guilt are believed to occur more in women, and anger, contempt, and pride more in men (e.g., Hess et al., 2000; Plant, Hyde, Keltner, & Devine, 2000). Although the distinction between expression and experience is not always made, when it is, the results consistently show stereotypes to be stronger for expression than for experience (Plant et al., 2000).

How well are the stereotypes supported by self-reports and behavioral data? In general, rather well. Stereotypes about gender differences in expression tend to correspond with self-reports of expression (see below); stereotypes about gender differences in nonverbal behavior correspond well with measured gender differences (Briton & Hall, 1995); and the belief that gender differences in expression are stronger than gender differences in experience is corroborated when researchers measure both simultaneously. For example, Kring and Gordon (1998) documented gender differences in facial expressions, but not in self-reports of experience, in response to evocative films.

To find that stereotypes are somewhat confirmed in self-reports or in actual behavior should be relatively unsurprising, because our most automatically encoded and retrievable memories are based on frequently occurring behaviors, which may form the basis for many stereotypes (Hasher & Zacks, 1984). On the other hand, as pointed out by Brody (1997), gender and emotion stereotypes are imprecise, are overly general, and ignore the importance of the modality in which an emotion is expressed, as well as the situational and cultural context within which emotional expression oc-

curs. Because stereotypes ignore both the social context and individual differences, they often lead to the erroneous assumption that gender differences are exclusively biological in origin.

Despite these cautions, stereotypes warrant a closer analysis, because they powerfully shape the reality of gender differences in at least two ways. First, in any given interaction, gender stereotypes can generate expectancies about our same- and opposite-sex partners that influence and elicit particular behaviors and emotional expressions, becoming self-fulfilling prophecies (Hall & Briton, 1993). Second, stereotypes have a strong implicit prescriptive aspect, taking the form of "display rules," which are cultural norms regulating how, when, and where emotions can be expressed by males and females in any particular culture. For example, across 48 countries, adults reported that happiness was more desirable for girls and that fearlessness and anger suppression were more desirable for boys (Diener & Lucas, 2004). Violating stereotypic display rules can lead to negative social consequences, such as social rejection and discrimination.

SELF-REPORT MEASURES

Self-report measures, though serving as the basis of much of the available evidence about emotion and expression, are problematic for three reasons. First, gender stereotypes may color participants' self-concepts and therefore their self-descriptions (Robinson & Clore, 2002). Some research supports this idea. The extent to which students endorsed gender stereotypes related to the extent to which they themselves reported experiencing different emotions from those of the opposite sex (Grossman & Wood, 1993). Second, stereotypical responding may be exacerbated by social desirability motives, which in turn may be influenced by display rules. And third, the important conceptual distinction between emotional experience and emotional expression is frequently blurred. The items to which participants are asked to respond may not make the distinction; the commonly used term "emotional," for example, implies both experience and expression. Or participants may have difficulty making this distinction even if they are asked to do so. With these cautions in mind, we review studies that have used self-report measures.

Self-Reports of General Emotional Experience and Expression

Many studies find that women rate themselves as more emotionally expressive than men report themselves to be (e.g., Simon & Nath, 2004). Gross and John (1998) factor-analyzed six frequently used self-report measures of emotional expression and identified five factors: positive expressivity, negative expressivity, the intensity of emotional expression, expressive confidence (such as enjoying acting), and masking or emotional regulation (such as suppressing anger). Women rated themselves significantly higher on the first three of these factors. Greater intensity is found for women both in their descriptions of specific emotional experiences (Hess et al., 2000; Tobin, Graziano, Vanman, & Tassinari, 2000) and on global self-report measures such as the Affect Intensity Measure (AIM; Diener, Sandvik, & Larsen, 1985). Intensity must be distinguished from frequency, however. In the 1996 General Social Survey, involving more than 1,300 respondents, there was no overall gender difference in reports of overall frequency of emotional experience (Simon & Nath, 2004). Estimates of overall frequency may mask differences for specific emotions, however, as we demonstrate in the next section.

Finally, there is emotional contagion: Women report a higher likelihood of “catching” the emotions of others than men report (Doherty, 1997). This self-reported difference is corroborated, for certain emotions, when facial muscle activity is recorded through electromyography (Dimberg & Lundquist, 1990). Emotional contagion combined with facial feedback processes (Strack, Martin, & Stepper, 1988) could contribute to women’s greater reported intensity of experience.

Self-Reports of Specific Emotions

The specific positive emotions reported more intensely or more frequently by women include joy, love, affection, warmth, and feelings of well-being (see Brody, 1993; Fischer & Manstead, 2000). Higher female reporting of positive emotions emerges most clearly in situations involving intimate interpersonal relationships. When interpersonal situations are not the focus—for example, when participants are asked about total frequency in the past week—women report significantly less positive

affect than men report (Simon & Nath, 2004). Females also generally report more empathy and sympathy than do males; these emotions are hard to classify as either positive or negative (see Lennon & Eisenberg, 1987). However, gender differences in empathy become smaller from ages 22 to 92 (Schieman & Van Gundy, 2000), reflecting either developmental or generational effects. Many negative emotions—including disgust; sadness; feelings of vulnerability, such as fear, anxiety, and hurt; and feelings of dysphoric self-consciousness, such as shame and embarrassment—are generally reported more by women than by men (see, e.g., Brody, 1999; Hess et al., 2000; Simon & Nath, 2004; Fischer, Rodriguez Mosquera, van Vianen, & Manstead, 2004), although gender differences in shame are inconsistent (Simon & Nath, 2004) and can vary depending on the gender-role-related relevance of the target situation (Ferguson, Eyre, & Ashbaker, 2000). Sadness, depression, and dysphoria are also reported to be more intense and of longer duration by women than by men (Scherer, Wallbott, & Summerfield, 1986).

Although men may express more anger through vocal, facial, and behavioral modalities than women, the data on gender differences in anger from research using self-report questionnaires are inconsistent. When asked general questions about how many days per week they get angry, men and women report no differences (Simon & Nath, 2004). However, when asked about the intensity of their anger, sometimes women report getting more intensely angry than men (e.g., Simon & Nath, 2004) and sometimes they show no gender differences, as was shown across 37 different countries (Fischer et al., 2004). Reports of anger are sometimes, but not always, heightened in women and girls when a situational context is specified, especially one involving interpersonal relationships (e.g., Buntaine & Costenbader, 1997; Chaplin, Cole, & Zahn-Waxler, 2005; Kring, 2000). Compared to men, women also report more enduring experiences of anger (Simon & Nath, 2004), are more likely to report hurt or disappointment in response to anger-inducing situations (Brody, 1993), and are more likely to report feeling ashamed after expressing anger (Kring, 2000), but are also more likely to view their anger as appropriate (Simon & Nath, 2004).

Emotions that males sometimes report expressing or are reported by others to express

more frequently or intensely than females do are contempt, loneliness, pride, confidence, guilt, and excitement (Brody, 1993, 1999; Simon & Nath, 2004). However, gender differences in contempt, guilt, and loneliness have been inconsistent across studies, depending on situational circumstances, the characteristics of the particular samples assessed, and methodological variables (including differences between scenario-based methods and trait measures of these emotions) (Benetti-McQuoid & Bursik, 2005; Ferguson et al., 2000).

What Do Self-Reports Measure?

Women's reports of higher affective intensity on global self-report measures such as the AIM may not accurately reflect sex differences in emotion at the time feelings are initially expressed or evoked. When daily logs are used to report momentary emotions, either no gender differences have been found (Barrett, Robin, Pietromonaco, & Eyssell, 1998), or men have reported positive events in their lives to be more intense than women have reported theirs to be (Seidlitz & Diener, 1998). Moreover, subsequent global self-reports of emotion do not significantly relate to the intensity of emotional reactions reported at the time events occurred (Seidlitz & Diener, 1998). Robinson, Johnson, and Shields (1998) found that men and women retrospectively remembered their emotions as more gender-stereotypic than they actually were. In a theoretical review, Robinson and Clore (2002) argue that global and retrospective self-reports of emotion partially reflect memories for the contextual details of events. Women may have more sophisticated emotion concepts that can serve as retrieval cues, or they may encode emotional experiences in more detail than men do (Seidlitz & Diener, 1998). This may subsequently contribute to their reports of more intense emotions relative to men on global measures, even in the absence of gender differences in emotional intensity at the time feelings are actually expressed. These hypotheses are consistent with data that girls and women in the United States and Australia are faster in accessing, and are able to recall more, childhood memories of emotional experiences than their male counterparts (Davis, 1999), and also with data from Poland that women use more positive and negative emotion

words when recalling vivid memories than men do (Niedzwienska, 2003). It is also possible that there are gender differences in the mental imagery surrounding emotional events, and enhanced mental imagery has been found to be related to heightened affective responding (Miller et al., 1987).

Robinson and Clore (2002) also argue that as the delay lengthens between the occurrence of an emotional event and later recall, detailed memories fade, and self-reports of emotion increasingly rely on belief- and identity-consistent generalizations. Thus gender-stereotypic beliefs and identity may contribute to gender differences in global self-report measures. Alternative explanations for the discrepancy between global and specific measures are also possible, including the idea that in the time elapsed since an event, women may cumulatively experience more emotion than men—perhaps, for example, ruminating over the event, which retriggers emotional experiences. And, as pointed out earlier, global self-report measures often blur the distinction between emotional experience and emotional expressiveness.

However, the gender differences that appear on global self-report measures—with females reporting a wide range of both more frequent and more intense emotions than men—are unlikely to be solely determined by stereotypes, self-presentation biases, memory encoding, or other cognitive differences between males and females. Gender differences also appear on other measures of expressiveness, including observed interactions, the verbalization of emotion, facial expressiveness, and nonverbal measures.

VERBALIZATION OF EMOTION

Consistent with self-report data, women have been found to refer to both positive and negative emotions more often in conversations and in writing samples. For example, in writing a response story to a scenario in which they dealt with an obstructive travel agent, females made more emotional references than did males (Girdler, Turner, Sherwood, & Light, 1990; see also Brody, 1999). Female physicians have been found to engage patients in more talk about emotions than male physicians do (Roter, Hall, & Aoki, 2002).

In both self-descriptions and observations of marital interactions, wives are more willing to tell their husbands when they are feeling tense; they are more apt to disclose their feelings; and they are more apt to try to explain their feelings than are husbands (Burke, Weir, & Harrison, 1976). Observations of marriages corroborate that women express more emotions in words—especially more negative emotions, including more distress and anger—than men do. Men have been found to withdraw from criticism and marital conflict by “stonewalling,” which involves inhibiting facial action and minimizing listening and eye contact, more than their wives do (Levenson, Carstensen, & Gottman, 1994). A recent study of dating couples indicates that gender differences in interactions are moderated by levels of stress/discomfort with the discussion: In high-stress situations, gender differences are maximized, with men expressing less emotion, more restricted affect, and more withdrawal (Vogel, Wester, Heesacker, & Madon, 2003).

FACIAL EXPRESSIONS AND OTHER NONVERBAL BEHAVIORS

Women are more accurate facial expressers of most emotions, both when posing deliberately and when being observed unobtrusively (Hall, 1984). A measure integrating facial, vocal, and postural expressions shows that girls express more sadness and anxiety than boys at ages 4 and 6, and over this 2-year period, boys decrease their expression of these emotions (Chaplin et al., 2005). Quantitative reviews have also concluded that women are more generally expressive with their faces and hands, and that they smile, laugh, and nod more than men do (Hall, 1984; LaFrance, Hecht, & Levy Paluck, 2003). It is important to note, however, that these behaviors do not have to reflect emotional states (Chovil, 1991–1992; Krauss, Chen, & Chawla, 1996). Smiling is notably ambiguous as to its “real” emotional meaning, with some authors suggesting the possibility that smiling in women reflects false positivity (women’s smiles were less congruent with the content of verbal statements than was the case for men; Bugental, Love, & Gianetto, 1971). However, women’s facial expressions were less discrepant from their words than were men’s in the research of Halberstadt, Hayes, and Pike

(1988), and women and men displayed Duchenne (enjoyment) and non-Duchenne (social) smiles in approximately equal proportions in Hecht and LaFrance’s (1998) study, meaning that women did not show an excessive proportion of emotionally artificial smiles.

Men may convey anger more clearly in their facial expressions than women do. For example, when participants were videotaped as they discussed angry, sad, and happy emotional memories, a panel of judges was subsequently able to identify men’s facial displays of anger (independent of verbal content) more accurately than women’s (Coats & Feldman, 1996). Men are also more facially reactive in response to angry stimuli than are women, as measured by facial electromyographic activity (Dimberg & Lundquist, 1990).

NONVERBAL DECODING SKILL

Across many studies, females score higher than males in identifying the meanings of nonverbal cues of face, body, and voice (Hall, 1978, 1984; McClure, 2000). Interestingly, most of the studies have tested sensitivity to expressions of affect, which is a female-stereotypic knowledge domain. When the knowledge domain is male-stereotypic (such as judging status or dominance), the differences appear to be much smaller or nonexistent (Schmid Mast & Hall, 2004). Evidence is also accumulating that performance on nonverbal decoding tasks is susceptible to motivational influences, which may have implications for the size of the obtained gender differences (Klein & Hodges, 2001).

EMOTIONAL COMPETENCE

Components of Emotional Competence

Theories of emotional intelligence define several emotion-related traits and skills to be important for adaptive functioning (Matthews, Zeidner, & Roberts, 2002), including perceiving emotions accurately, using emotion to facilitate thought, and understanding and managing emotion. Women score higher on all of these components on the Mayer, Salovey, and Caruso Emotional Intelligence Test (Day & Carroll, 2004; Mayer, Caruso, & Salovey, 2000). Consistent with this result is the large literature showing female advantage in perceiv-

ing nonverbally communicated emotions (see above).

Several other constructs can be seen as falling generally under the heading of emotional competence. Gohm and Clore (2000) found that women reported a greater tendency to pay attention to their emotions. When participants were clustered according to their pattern of scores on attention, clarity, and intensity, women predominated among those who were high on all three and those who were high on intensity but low on clarity (called "overwhelmed"), while men predominated among those who were low on all three and those who were low on intensity and high on clarity (called "cerebral").

Women and girls display more complex emotion knowledge than men and boys do when asked to describe emotional reactions of self and others in hypothetical scenarios (Ciarrochi, Hynes, & Crittenden, 2005). Ciarrochi et al. (2005) showed that a motivational manipulation brought men's performance up to the level of women's, but only after men spent a significantly longer amount of time on the task. As mentioned above with regard to nonverbal decoding accuracy, motivational factors may play an important role in emotion-related tasks.

Emotion Regulation

Emotion regulation or management consists of behavioral, cognitive, attentional, physiological, or emotional strategies to eliminate, maintain, or change emotional experience and/or expression (Ochsner & Gross, 2005), with closely related constructs being coping strategies and defense mechanisms. These constructs include the ideas that people attempt to control emotional processes in accordance with cultural pressures (display rules, stereotypes, and power/status imbalances), and/or in accordance with personality-related factors (self-construals, motives, conflicts and goals, with a primary goal being the avoidance of painful affect; Cramer, 2002; Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998). Because cultural pressures and personality-related factors differ by gender, it should not be surprising to find gender differences in emotion regulation strategies. Men report or are observed to use more problem-solving, behavioral, suppression, and externalizing emotion regulation strategies than women do, including

blaming others, taking active steps, and engaging in distracting or avoidance activities such as exercise (Brody, Muderrisoglu, & Nakash-Eisikovits, 2002; Cramer, 2002; Gross & John, 2003). Women report or are observed to use more social support strategies; internalizing strategies, such as blaming themselves; and emotion-focused strategies, such as ruminating, consisting of passively focusing attention on negative affect rather than taking active steps (Cramer, 2002; Nolen-Hoeksema & Jackson, 2001; Thayer, Newman, & McClain, 1994). The gender difference in rumination has been found to be mediated by trauma and chronic strain histories (Nolen-Hoeksema, Larson, & Grayson, 1999), as well as by several attributions, including the uncontrollability of negative emotions and feelings of responsibility for social relationships (Nolen-Hoeksema & Jackson, 2001).

Gender differences in emotion regulation strategies need to be qualified by type of emotion and situation. For example, women report that they exert more control over anger, contempt, and disgust than do men, and men report that they exert more control over fear and surprise than do women across four different cultures (Matsumoto et al., 1998). Moreover, women choose rumination strategies when in neutral or depressed moods, but choose distraction when in angry moods (Rusting & Nolen-Hoeksema, 1998).

Personality factors, including motives, may also moderate gender differences in emotion regulation. Females report regulating anger and sadness to protect others' feelings, whereas males attempt to maintain control and to avoid nonsupportive interpersonal reactions (Timmers, Fischer, & Manstead, 1998; Zeman & Shipman, 1998). Agreeableness, one of the Big Five personality factors consisting of such characteristics as helpfulness and sympathy, is a stronger predictor of self-reported efforts to control emotions for women than for men (Tobin et al., 2000).

Although both avoidance and emotion-focused coping strategies tend to be nonadaptive for both sexes (Thayer et al., 1994), evidence indicates that some regulation and defense strategies may be differentially adaptive for each gender, varying in complex ways as a function of type of situation, how gender-stereotypic the defense is, and the quality of the emotion being regulated (Brody et al., 2002).

SITUATIONAL AND RELATIONSHIP SPECIFICITY

In What Situation Is Emotion Being Expressed?

Gender differences in each modality of emotional expression shift depending on the particular situation. For example, when participants recorded their emotions in response to random beeps by pagers for a 1-week period, women reported more positive affect states (e.g., happy and friendly, as opposed to unhappy and angry) while at work than they did while at home. The opposite was true of men: They reported more positive affect states while at home (Larson, Richards, & Perry-Jenkins, 1994). That women might experience more negative states in marriage than men do is consistent with Stets's (1997) observational study of married couples in videotaped discussions. Women's verbal and nonverbal behavior was much more negative than that of their husbands.

Studies also indicate that the meaning of a situation for the two sexes affects patterns of emotional expressiveness. For example, women reported relatively more hurt and sadness when partners rejected them, in accordance with interdependent self-construals, while men reported relatively more hurt and sadness when partners demanded more intimacy, in accordance with independent self-construals (Brody et al., 2002).

To Whom Is Emotion Being Expressed?

Some critical aspects of context affecting emotional expressiveness are the characteristics of the participants in the interaction and the nature of their relationship, including their level of familiarity and intimacy, their power and status with respect to each other, and their genders. For example, both men and women express more emotions and more intense emotions to people they know intimately and feel closer to (Barrett et al., 1998). Barrett et al. (1998) speculate that women's tendencies to rate their interpersonal interactions as more intimate than men's may partially mediate gender differences in emotional intensity. Women from a wide variety of cultures also express emotions to a greater number of people than men, who tend to limit themselves to expressing emotions only to intimate partners (Rimé, Mesquita, Philippot, & Boca, 1991). Women also report

controlling their emotions less with family members than males do (Matsumoto et al., 1998).

Both sexes are also more comfortable disclosing feelings (with the possible exception of anger) to women than to men (Timmers et al., 1998). In a meta-analysis of sex differences in self-disclosure (which includes but is not limited to the disclosure of feelings), women self-disclosed more to female partners, but not more to male partners, than males did (Dindia & Allen, 1992). Anger may be the only feeling that is verbally disclosed or directed more toward men than toward women, especially in situations in which no provocation is involved (Bettencourt & Miller, 1996).

CULTURAL SPECIFICITY

Across 37 countries, women report more intense emotions that last longer and are expressed more overtly than do men (Fischer & Manstead, 2000). In other cross-cultural studies, females express more nonverbal emotional reactions—including facial reactions, vocal reactions, body movements, laughing, and smiling—when expressing joy, sadness, fear, and anger than males do (Scherer et al., 1986). Moreover, in a six-nation study using U.S. and Japanese college students as posers of facial expressions, the emotions portrayed by females were more accurately judged by every cultural group, even though the photographs were intended to be standardized exemplars (Biehl et al., 1997). However, interactions among gender of judge, gender of poser, and culture have also been found to exist for at least some emotions (Matsumoto, 1992).

Gender differences in emotional expression across cultures are likely to vary as a function of cultural values, especially individualistic versus collectivistic values (giving priority to personal goals vs. loyalty to collective/group goals). Collectivism needs to be distinguished from relational values, which prioritize maintaining intimate relationships and which are more characteristic of women than men across cultures (Kashima et al., 1995). In Fischer and Manstead's (2000) data, the extent of gender differences in the intensity and duration of joy, shame, disgust, and guilt, and in the nonverbal behaviors associated with those emotions, were greater in individualistic than in collectivistic countries. Similarly, gender differences in the

reported intensity of emotion in response to scenarios depicting joy, fear, and anger were not significant in a sample of American blacks, who are hypothesized to have more collectivistic values than other American ethnic groups (Vrana & Rollock, 2002). Fischer and Manstead (2000) theorize that males in individualistic cultures are especially likely to minimize emotional expressions, because expressing emotions might threaten the control that is critical to their status.

PHYSIOLOGICAL AROUSAL

Research suggests that gender differences in physiological arousal, including changes in heart rate, blood pressure, skin conductance, and levels of catecholamines (epinephrine and norepinephrine), are specific to particular physiological measures and emotions, as well as to particular tasks and circumstances (see Brody, 1999). In the same situations, some measures of arousal (such as neuroendocrine functioning or blood pressure) show men to be more aroused than women, while others (such as cardiovascular reactivity) show inconsistent or contradictory gender difference patterns (Polefrone & Manuck, 1987; Neumann & Waldstein, 2001). Type of emotion, age, and ethnicity may moderate gender differences. For example, men show higher levels of skin conductance to fearful films than women, but not to films evoking other emotions (Kring & Gordon, 1998). Although 15- to 50-year-old women show higher cardiac reactivity than same-age men when recalling angry or scary memories, no gender differences are evident when recalling sad or happy memories. In men and women over 50, no gender differences in cardiac reactivity are found across emotions (Labouvie-Vief, Lumley, Jain, & Heinze, 2003). The moderating effects of ethnicity are evident in a study showing that American black men exhibit greater cardiovascular reactivity to imagined emotional situations than other groups do (Vrana & Rollock, 2002).

Internalizers, Externalizers, Generalizers, and Low Responders

Gender differences in the patterns of correspondence between physiological arousal and other modes of emotional expression (e.g., self-reports) are consistent with gender differences

in emotion regulation, and in fact often provide clues as to emotion control strategies. Earlier work on gender differences in patterns of relationships (Buck, 1977; Manstead, 1991) suggested that men were more often “internalizers” (showing physiological arousal with no overt emotional expressions), whereas women were more often “externalizers” (showing overt emotional expressions with no corresponding physiological arousal). More recent studies confirm these patterns, but also indicate that women are relatively more likely than men to be “generalizers” (Brody, 1999)—that is, to show concordance in their expression of emotion, even at young ages (Quas, Hong, Alkon, & Boyce, 2000), and especially at high levels of physiological reactivity (Avero & Calvo, 1999). In contrast, men are more likely than women to be “low responders” (Kring & Gordon, 1998), showing no or low levels of expression across modalities. Discordance among males may be related to maintaining control or suppressing the behaviors and self-reports that correspond to arousal (Avero & Calvo, 1999), whereas concordance among females may be related to heightened emotional awareness of self and others and to female-stereotypic gender roles that encourage emotional expression.

Exceptions to these patterns have been noted in the literature on marital interaction, in which husbands’ arousal has sometimes been found to be more likely to correspond to negative affect than wives’ (Levenson et al., 1994, but see Kiecolt-Glaser et al., 1996). Moreover, men’s cardiovascular reactivity is more often related to their expression and suppression of anger than is women’s (Burns & Katkin, 1993).

NEURAL SUBSTRATES OF EMOTIONAL FUNCTIONING

With the advent of new technology, particularly functional magnetic resonance imaging (fMRI) and positron emission tomography (PET), researchers are studying potential gender differences in the brain regions involved in emotional expression, perception, and experience, especially in limbic system activation and brain lateralization (Schienle, Schafer, Stark, Watler, & Vaitl, 2005). Although recent fMRI and PET data are intriguing, they are also plagued with small sample sizes, the lack of a coherent theoretical model incorporating the idea that biological development is both influ-

enced by and influences the social context, and inconsistencies in interpretation. Researchers often fail to consider that gender differences in the activation of a specific brain region in response to emotional stimuli can result from a multitude of processes, including differences in attention, the quality of emotional experience, the imagery associated with the experience, or the expression of emotion in different modalities (Wager & Ochsner, 2005). Activation itself has been confusingly interpreted to indicate that an area of the brain is both strong or weak for a particular function (Brody, 1999). We hope that these limitations will be addressed as the field progresses.

ETIOLOGY OF GENDER DIFFERENCES

Gender-role-related differences in motives, goals, and social status are consistent with many of the data we have reviewed about gender differences in emotional processes. For example, the emotions that women display more than men (e.g., warmth, happiness, shame, fear, and nervousness), their relatively stronger abilities in emotional decoding, and their higher facial and nonverbal expressiveness may be related to motives for affiliation and intimacy; to a self-schema based on interdependence; to perceived vulnerability in the face of lower power; and to their traditional gender roles (including child caretaking and social bonding, which necessitate reading others' emotion signals). Greater male pride, loneliness, and contempt are consistent with the male roles of differentiating from and competing with others; with maintaining a relatively high-status position; and with a self-schema based on individualism or independence. Moreover, the differing types of emotion regulation strategies used by women and men, and their differing rationales for using them (avoiding interpersonal conflict vs. maintaining control), are also consistent with gender-role-related motives and undoubtedly contribute to some of the gender differences in patterns of expressiveness, including concordance/externalizing and discordance/internalizing. That gender differences in various aspects of emotional functioning become minimized as adults age is also consistent with the idea that emotions are adaptive for gender roles, which become less rigid in later life (Gutmann, 1987).

However, social and gender-role-related variables cannot always account for gender differences in emotion. For example, evidence indicates that status differences do not account well for gender differences in nonverbal behavior (Hall, Coats, & Smith LeBeau, 2005). In our view, multiple interrelated factors contribute to the etiology of gender differences that span cultural, biological, societal, interpersonal, and intrapersonal levels of analysis. Furthermore, these multiple causes coexist with multiple moderating factors. We propose two etiological models that encompass proximal and distal factors; interpersonal and intrapersonal feedback processes; and the complex intertwining of situational, sociocultural, biological, personality, and cognitive factors both over time and in specific situations.

A Developmental Perspective

The first model includes distal factors, such as gender differences in temperament, family socialization history, gender-segregated play patterns, and cultural values, all of which contribute to the nature of gender differences. An integration of these factors involves a feedback loop in which differing temperamental characteristics of male and female infants elicit differential responses from caretakers and peers, who are also conforming to cultural pressures and display rules for gender socialization. Differing temperamental characteristics include higher activity and arousal levels in males and faster maturation rates for effortful control processes in females (see Brody, 1999; Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006). Although in the past this model also included higher levels of sociability/empathy in females as a gender difference possibly rooted in temperament (Brody, 1999; Brody & Hall, 2000), a recent meta-analysis (Else-Quest et al., 2006) suggests that there are gender differences in infant arousal (favoring boys) and in infant effortful control processes, including inhibitory control and attention focusing (favoring girls), but not in infant sociability. Infant gender differences in self-control may partly contribute to the higher levels of agreeableness and sociability characterizing females later in development (Goodwin & Gotlib, 2004) because higher levels of self-control (along with early language development) would make it more likely that girls would attend to socioemotional relationships and rules. In turn, agreeableness

is a significant predictor of other emotional processes that are heightened in women, including emotional intensity and efforts to regulate emotions (Tobin et al., 2000).

The socialization of emotion is especially influenced by characteristics of the family system, including the parents' own temperaments, their gender role attitudes and behaviors, the quality of their marital relationships, their cultural and socioeconomic backgrounds, and the gender constellation of the children in their families (Brody, 1999). The quality of parent-child narrative discourse and interaction has been found to vary as a function of the gender composition of the parent-child dyad and the type of emotion displayed or discussed. For example, fathers attend more to their preschool daughters' emotions of sadness and anxiety than to their sons', and to their sons' expressions of anger than to their daughters'; parental attention also predicts the later expression of sadness and anxiety 2 years later (Chaplin et al., 2005). This and other research suggests that boys learn to be less expressive of, and more controlling of, emotions communicating vulnerability as they develop. Mothers use more emotion labels in conversations with preschool daughters than with sons, and mothers' use of emotion labels significantly predicts individual differences in children's use of emotion labels (Cervantes & Callanan, 1998). And, consistent with feminist object relations analyses of development, when fathers are more involved in child care, sons and daughters express less gender-role-stereotypic emotions (Brody, 1997). Finally, gender-segregated peer groups and differentiated patterns of play both elicit and reinforce gender-role-specific emotional styles (Rose & Rudolph, 2006).

Putting Distal and Proximal Causes Together: The Example of Smiling

The second model integrates distal factors (such as gender differences in social roles and cultural values, social knowledge, and developmental history) with proximal factors (including characteristics of the situation, especially quality of affect and others' expectations and treatment by others) to account for gender differences in expressiveness, using smiling as an illustration (Hall, Carter, & Horgan, 2000). A key feature is a set of feedback processes that intensify women's positive affect during social interaction and thereby increase their smiling.

Smiling itself enhances positive affect through both physiological mechanisms and attributional processes (Strack et al., 1988).

If we take women's greater smiling as a starting point, regardless of its immediate cause, facial feedback would produce more positive affect in women than in men. Positive psychological feedback can also follow from smiling due to gender-related motives and traits. For example, if women smile partly to fulfill their internalized conception of "femininity," this would reinforce their feelings of femininity and generate positive affect, which would produce more smiling. Other gender-related motives are interpersonal trust, liking for others, and capacity for intimacy. Some of these motives intrinsically imply more positive affect and smiling (such as liking others). But, in addition, the knowledge that one has acted on these motives (showing that one is trusting, that one likes others, etc.) produces positive affect, because one is acting in concordance with a gender-relevant value (Wood, Christensen, Hebl, & Rothgerber, 1997). In turn, others respond favorably, contributing to the cycle. Women may also use smiling in the service of social skills to put others at ease, facilitate interaction, and defuse conflict. Again there would be positive feedback, because it is reinforcing to feel socially competent and to know that one has promoted comfort and communication, which in turn promotes more smiling. And others' favorable reactions produce positive affect and more smiling. Finally, smiling itself is highly reciprocal: The more one is smiled at, the more one will smile back (Hinsz & Tomhave, 1991). Reciprocity, combined with emotional contagion, should increase the intensity of women's positive affect and smiling.

Thus women experience numerous positive feedback cycles involving their own behavior, their cognitions, their physiological processes, and others' behaviors. These sum to create enhanced positive affect in their immediate social interactions compared to men's, which ultimately influences how much they smile relative to men.

Hankin and Abramson's (2001) model for women's heightened depression is also based on feedback cycles involving frequent exposure to negative events, heightened negative affect, and cognitive vulnerability factors. The similarity between the two models highlights the need for research on how the quality of immediate social interactions relates to or predicts

long-term emotional styles, as well as how non-verbal expressions (such as smiling) relate to generalized affective states (such as depression).

CONCLUDING THOUGHTS

As in our chapters in the first two editions of this volume (Brody & Hall, 1993, 2000), we have continued to find consistent gender differences in several different emotional processes across several types of data. For example, gender stereotypes have frequently been borne out by data on actual patterns of behavior. We have also emphasized that gender differences in any particular modality of emotional expression are culturally and situationally specific. We have argued that the differential expression of emotions for the two sexes is adaptive for the successful fulfillment of gender roles, and we have alluded to a developmental etiological model that integrates a multiplicity of variables, including temperament and socialization factors. Finally, using smiling as an example, we have shown that proximal affective experiences, including motivational, personality, and cognitive determinants and feedback cycles, are likely to be important determinants of differential affective experiences.

The numerous variables involved in understanding both how and when gender differences occur, as well as their origins, make the research process in this area particularly complex. The most productive research strategy in this area is one that investigates how the correlates and patterns of emotional functioning differ for each gender, incorporating a diverse set of biological, personality, social, cognitive, and cultural variables as both mediators and moderators.

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