

5. Gender differences in nonverbal communication of emotion

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There is a large accumulation of research on gender differences in nonverbal communication. By nonverbal communication we mean specific behaviors such as smiling or gazing, as well as accuracy in nonverbal communication. Summaries of these gender differences are available (Hall, 1978, 1984, 1987; LaFrance & Hecht, this volume; Vrugt & Kerkstra, 1984). The present chapter is also concerned with gender and nonverbal communication, but differs from earlier treatments in that we discuss a selected group of nonverbal behaviors with specific interest in analyzing the role of *emotion* in understanding the gender differences.

Before beginning, it is important to make several points. First, nonverbal behavior does not necessarily signify emotion. Some examples will easily make this point. Smiles can serve the function of "listener responses" that signal comprehension and cue the other person to keep speaking (Brunner, 1979). Gaze is used to help coordinate the intricate process of turn-taking in conversation (Cappella, 1985). Hand movements aid in the process of speech encoding (Krauss, Chen, & Chawla, 1996). These are but a few examples of non-emotional meanings and functions of nonverbal cues.

Second, even when nonverbal cues *do* indicate emotion, it is often difficult to identify what emotion is being felt. Nonverbal cues do not have fixed, dictionary-like meanings. So, a smile might convey either joy or anxiety, looking at someone might signify hostility or fascination, and so forth. Although someday we might understand the relations among contextual factors, motivational states, and specific muscle configurations well enough to permit a confident identification of which particular emotions are being conveyed by which nonverbal behaviors, in our present state of knowledge we are often unable to do so.

Finally, even if nonverbal behavior is conveying emotional information, and even if we can identify which emotion is being conveyed, there is often great ambiguity about the authenticity of the display. People have considerable control over their nonverbal behavior (particularly facial expressions) and can therefore put on false expressions, intensify

the expression of their true feelings, mask their true emotion with a neutral expression, and so forth. The issue of intentionality and authenticity is particularly relevant in the case of facial expressions such as smiling (see, for example, Buck, 1991; Chovil, 1991; Fernández-Dols & Ruiz-Belda, 1995; Fridlund, 1991; Frank, Ekman, & Friesen, 1993; Kraut & Johnston, 1979). Such ambiguities make some issues in the interpretation of gender differences particularly difficult.

These ambiguities provide serious obstacles to reaching firm conclusions about the relations among nonverbal behavior, emotions, and gender. Nevertheless, we undertake to examine these relations in hopes that a small amount of theoretical progress will result. We consider smiling, expressiveness/expression accuracy, and decoding (judgment) accuracy. These three categories of behavior have been well examined with respect to gender, and they show relatively large gender differences (Eagly, 1995; Hall, 1998). The word "relatively" is important here. In absolute terms psychological gender differences tend to be rather small. However, the nonverbal differences are larger than many other psychological gender differences (including cognitive skills, attitudes, personality, and other social behaviors) (Hall, 1998).

For smiling, expressiveness/expression accuracy, and decoding accuracy, we will first present a summary of gender differences, especially as they relate to emotion. We will then present a theoretical model that attempts to capture the rich diversity of possible explanatory factors for these gender differences, again with special attention to the role that emotion might be playing. Our model emphasizes *proximal* factors, that is, factors that are the more immediate precursors of smiling, such as motives that are aroused in a particular social situation or characteristics of that situation.

We recognize that a complete model would include more distal factors, which themselves could be grouped into *distal biological influences* and *distal environmental influences*. Some authors have argued for a likely biological influence on nonverbal gender differences (Andersen, 1998; Graham & Ickes, 1997). We concur that biological adaptation has surely played a role in shaping the human behavioral repertoire. Because many of the "problems" our progenitors faced were social in nature, it is indeed likely that socially important needs, motives, and emotions were favored by selection pressures. Examples would be the need to belong (Baumeister & Leary, 1995), the need to understand others (Stevens & Fiske, 1995), and the capacity for specific emotions such as guilt and gratitude (Leakey & Lewin, 1978). The ability to convey and interpret nonverbal information would have been adaptive to humans too (Darwin, 1872/1965; Fridlund, 1994).

To us other points remain less obvious, however. First, it is not neces-

sary to posit that differences between males' and females' nonverbal behaviors and skills have evolved biologically; the observed differences could have come about through *cultural* learning and adaptation following from reproductive differences (e.g., the fact that for most of human history, lactation required that women stay near infants). Second, it seems likely that our biology prepares us to *learn about* or perhaps to be *pre-attuned* to nonverbal information, rather than providing us with innate knowledge of specific cue meanings and rules of usage (in contrast to Andersen, 1998, who in arguing that women's superior social skills are innate, implied both innate knowledge and motivation). Thus, a discussion of the evolutionary basis of nonverbal gender differences must identify what, exactly, has evolved differently – is it capacities, motives, knowledge, values, or what? It is our own view that although nonverbal behavior is biologically driven, the gender differences are likely to be experience dependent.

Distal *environmental* influences on gender differences include both what type of learning environment is provided to males versus females and what type of learning environment males and females are attracted to (see Brody & Hall, in press). Different social-learning environments would provide different experiences which in turn could lead to different repertoires of social behavior and social skills. For example, role expectations, folk wisdom, and stereotypes about females and males influence how each is socialized in society (Eagly, 1987). Mothers may talk more about emotions and display more varied facial expressions around their daughters than their sons (Kuebli, Butler, & Fivush, 1995; Malatesta, Culver, Tesman, & Shepard, 1989) because they believe females are more expressive or need to be more expressive than males. A more emotionally expressive, emotionally responsive, and emotionally differentiated environment in childhood could lead to more opportunities for nonverbal skill development in females, as well as to more motivation to display gender-appropriate behavior.

Smiling: Overview of gender differences

Hall's (1984) meta-analysis of male versus female social smiling used as its index of effect size the point-biserial correlation (r) between gender and smiling, with gender coded so that positive values indicated more female smiling and negative values indicated more male smiling. This same index of effect size is used in the present chapter. For 15 studies of adolescent and older samples, the average effect was $r = .30$ (Hall, 1984). In an updating of this review undertaken for the present chapter, an average effect of $r = .33$ was found for an additional 15 studies (the citations are available from the first author).

In the much larger quantitative review of LaFrance and Hecht (this volume), the average effect for social smiling was $r = .20$, a smaller value that may be due to LaFrance and Hecht entering unknown effect sizes as zero; in fact, when unknown effect sizes were included as zero in the earlier review, the average effect size was also .20 (Hall, 1984). In spite of this discrepancy, and acknowledging that there are numerous moderating influences (Hall & Halberstadt, 1986; LaFrance & Hecht, this volume), there is no contesting that the preponderance of research finds that women smile more than men do in social interaction.

Explanations for women's smiling

Because of the kinds of ambiguities discussed at the outset of this chapter, and because gender is obviously not under experimental control, it is extremely difficult to know what explains the gender difference in smiling (or any other nonverbal behavior), and, in particular, whether the difference is related to emotion. This problem is compounded by the typical form of research in which nonverbal behavior is examined in a gross quantitative way, for example by counting how many smiles occurred. Such methods permit only superficial conclusions about emotion since they pool expressions that might have diverse meanings.

While gender-role norms are the most commonly cited possible explanation for the smiling difference (as well as other nonverbal differences) (e.g., Henley, 1977; LaFrance & Hecht, this volume), a more comprehensive picture must include other proximal causes besides role conformity. The theoretical model we describe here is preliminary, and moreover we can present it in detail only for smiling, since that is what we are discussing first. When we discuss the other nonverbal behaviors, we will use the smiling model as the prototype, noting some of the differences that may pertain.

Figure 5.1 reveals that rather than trying to model the male-female difference, we consider female smiling by itself. We do this because the factors that increase women's smiling may not work simply in reverse for men. Later we will identify paths and/or factors that might be different for men. At the theoretical level, at least, treating the sexes separately provides some clarity over an analysis of differences (e.g., effect sizes in a meta-analysis), since differences by definition obscure the actual performance levels of men and women (for further discussion of this problem, see Hall, 1987).

As the title of figure 5.1 indicates, we believe the factors influencing women's smiling are affective, cognitive, and motivational. Although the figure does not show it, we assume there are influences *among* these

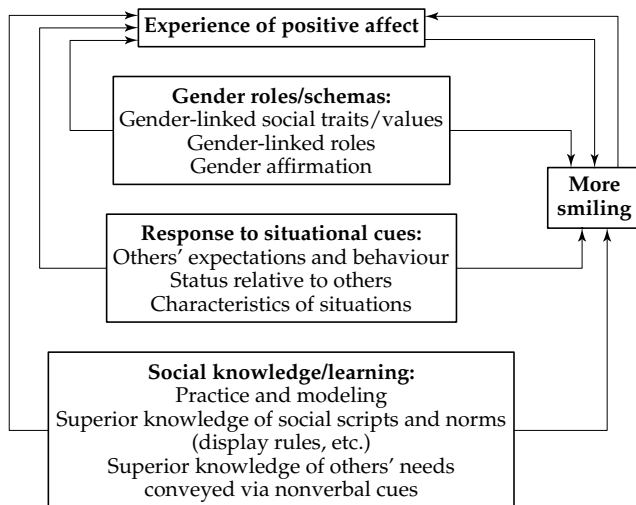


Figure 5.1 Affective, cognitive, and motivational factors in women's smiling

factors; for example, there could be an arrow from "gender-linked values" to "superior knowledge of social scripts and norms" because of the possibility that such values may promote skill development. We leave off these arrows for the sake of readability.

At the top of the list of possible explanatory factors is *positive affect*, under which we would include happiness and its variants such as pleasure, joy, contentment, enjoyment, and fun. The arrow going to increased smiling shows that, consistent with the "read-out" function of nonverbal behavior (Buck, 1984), more positive affect increases smiling. (At this point it is necessary to insert the cautionary "other things being equal." Obviously other factors could dampen this relationship, for example self-presentational goals that might suppress smiling; Friedman & Miller-Herringer, 1991.)

The arrow that goes from smiling back to positive affect is an extremely important feature of this model. It acknowledges the role of facial feedback in intensifying positive affect (e.g., Strack, Martin, & Stepper, 1988). Thus, *regardless of what factor or factors produced the smiling*, once smiling occurs it is likely to have a feedback effect on positive affect, which in turn could produce more smiling.

The following factor, called *gender roles/schemas*, encompasses a wide range of interrelated elements. By "gender-linked social values" we mean prosocial values and traits that are correlated with gender, for example interpersonal trust (Johnson-George & Swap, 1982), interpersonal orientation (Swap & Rubin, 1983), experience with intimacy (Reis,

Senchak, & Solomon, 1985), and positive attitudes toward other people and relationships (e.g., Filsinger, 1981; Matlin & Gawron, 1979; Warr, 1971). It can reasonably be suggested that one manifestation of these values and traits is smiling; for example, a person who is higher on interpersonal trust might smile because they wish to show others that they are trusted.

Note that feedback is present here too, not from smiling to positive affect as was the case above, but *from gender-linked social values to positive affect*. Such feedback can be predicted because holding and acting on positively valued traits is rewarding (Wood, Christensen, Hebl, & Rothgerber, 1997).

By "gender-linked roles" we refer to prescriptions for a gendered division of labor within the context of social interaction, notably the idea that men and women have separate responsibilities for task and socio-emotional processes, respectively (Parsons & Bales, 1955). To the extent that the social situation calls forth women's responsibility to look out for people's emotional welfare, and to the extent that smiling serves this function (helping others feel included, at ease, accepted, etc.), then this role division would produce more female smiling. Feedback occurs here as well. Because it is likely to be rewarding both to be in charge of social processes and outcomes, to feel self-efficacious, and to make others feel good, we would expect that the fulfillment of this role function in turn promotes positive affect in women.¹

By "gender affirmation" we refer to motives that are less complex, and probably more basic, than those identified so far. Underlying some gender-related nonverbal displays is the simple need to signal gender to oneself and others – what Birdwhistell called "tertiary sex characteristics" (Birdwhistell, 1970). As the first author's teenage daughter promptly replied when she was asked why boys smile less than girls, "They don't want to act like a girl." Thus, a woman could smile not because it conveys any particular message or emotional meaning, but simply because it affirms which social category she belongs to. As with the previous factors, this too would have a feedback effect insofar as reaffirming one's gender is rewarding.²

The next explanatory factor, *response to situation*, refers to a woman's perceptions of, and responses to, her social environment. To the extent that she believes other people expect her to smile more, *and* to the extent that she values others' approval, she is likely to smile more. By the same token, others' actual behaviors (which may be following from these expectations and their fulfillment) may induce more smiling; for example, others may treat her in a kindly manner, smile at her more, etc. There is indeed evidence that people smile at women more than at men (Rosenthal, 1976), and, moreover, that smiling is reciprocated in social

interaction (Cappella, 1981). Here the concept of self-fulfilling prophecy is obviously relevant. And, to the extent that a woman finds it rewarding to meet others' expectations, again there would be feedback creating more positive affect in her.

Emotional contagion (Hatfield, Cacioppo, & Rapson, 1994) is yet another phenomenon relating to gender and positive affect: women have a stronger tendency to "catch" another's emotion compared to men (Doherty, 1997). Women's faces also show more emotion-appropriate electromyographic (EMG) response to various stimuli, for example, zygomatic muscle activity in response to positive stimuli and corrugator muscle activity in response to sad stimuli (Dimberg, 1990; Dimberg & Lundqvist, 1990; Lundqvist, 1995; Schwartz, Brown, & Ahern, 1980). When put together with the concept of facial feedback, it is only a small leap from the EMG studies to the hypothesis that women experience more emotion in response to affective stimuli. Therefore, if people display relatively high levels of positive affect toward women, then women's proclivity for contagion and facial responding could magnify their experience of positive affect.

As alluded to above, the question of how much a woman *wants* to conform to others' expectations is important. Obviously, such conformity can be reluctant and cynical. Smiling to avoid the negative consequences of violating gender expectations certainly occurs. In that case, fulfilling others' expectations may lead to more smiling, but may not have the positive effect on emotional experience shown in the model. Furthermore, a woman who finds others' expectations to be offensive might choose *not* to conform to them, which might have complex consequences for her affective state – she might feel pleased at not conforming but not pleased to receive negative responses from others.

The next situational element is "status relative to others" (Henley, 1977, 1995; LaFrance & Henley, 1994). It has been proposed that women's lower status compared to men underlies differences in women's and men's nonverbal behavior. This interpretation has the appeal of unifying a number of gender differences under one comprehensive explanation: women's behavior differs from men's in the same way that weak, subordinate, or submissive people's behavior differs from that of strong, superior, or dominant people. It is unclear as of this writing, however, whether smiling has the hypothesized relation to status because experimental manipulations of status or power mostly have not produced more smiling in the subordinate than in the superior (e.g., Hecht, 1995; Johnson, 1994). A study that found the predicted difference is problematic because it confounded low power with the request to make a favorable impression (Deutsch, 1990). Another study, of employees in a company interacting with one another (Hall &

Friedman, 1998), found that higher and lower status employees differed on several behaviors, but not on smiling. If lower status does influence women to smile more, it is reasonable to hypothesize that any impact on positive affect would be weak at best.

The final situational element is the situation itself, which includes the kinds of people in it. If, for example, the situation had babies or children in it, women might experience heightened pleasure and therefore smile; they might also believe that children need or expect to be smiled at and therefore smile. Meta-analyses have found that situational characteristics do moderate the smiling gender difference (Hall & Halberstadt, 1986; LaFrance & Hecht, this volume). As an example, Hall and Halberstadt (1986) rated the tenseness of the situation and found that the tenser it was, the greater was the difference between men's and women's smiling. By itself this finding is ambiguous with respect to *women's* smiling, since one cannot tell which sex was influenced by the tension (Hall, 1987). But one possibility is that tension has more of an effect on women's smiling than on men's. It would still be important to uncover whether women smile more in tense situations because *they* are tense or because they are working to alleviate the tension of others.

The final category of explanation in the model is *social knowledge/learning*, under which the first element is "practice and modeling." Behaviors that are overlearned and mostly out of conscious awareness (as nonverbal behaviors often are) can take on a life of their own. Once a behavior is firmly entrenched in one's repertoire, it can occur with no attendant psychological meanings other than habit itself. One antecedent to the development of such habits is same-sex modeling that starts early in life, whereby girls imitate what they see their mothers and other women doing. Another antecedent of the smiling habit would be the accumulated experience of smiling reciprocally to others. As with the "gender affirmation" function of smiling, there need not be much message content to a behavior acquired in these ways.

The remaining elements in the model refer to social knowledge that women may possess. If females know the rules of social interaction better than males, then the successful application of this superior knowledge may entail more smiling (for example, as part of maintaining "face" for others). To the extent that a woman gains reward from the knowledge that she has successfully applied her store of social wisdom, there should be a positive effect on her emotional experience.

In summary, our model suggests a rich variety of possible influences on women's smiling. Perhaps the most important contribution of this model is the feedback arrows that suggest there are many routes through which women's positive affect may be related to their smiling.

In particular, it poses a challenge to the implication that much of what women show during social interaction bears little relation to what they actually feel.

The idea that there is a special discordance between women's expression and their emotion gained support from Bugental's well-known article on "perfidious feminine faces" (Bugental, Love, & Gianetto, 1971), in which the positivity of women's facial expressions showed a poorer match with the positivity of their words than was the case for men. However, Halberstadt, Hayes, and Pike (1988) found the opposite in a well-designed study (see also Merten, 1997). In the same vein, LaFrance and Hecht (this volume) cite unpublished work suggesting that women produce relatively more inauthentic smiles than men do (where "inauthentic" smiles involve the mouth muscles without involvement of the eyes; Frank et al., 1993). However, studies by Hecht (1995) and Merten (1997) indicate the opposite. Thus, great caution is in order in assuming a mismatch between women's inner experience and their outward displays.

What about men's smiling?

Space constraints do not permit a full discussion of how the model might be amended to account for men's smiling. Some effects for men would simply be the inverse of those for women. For example, gender affirmation would inhibit rather than facilitate smiling in men. But some relations may be more complex. Consider the gender-affirmation example. While gender affirmation by men would inhibit their smiling, men would at the same time experience positive affect as a consequence of successful gender affirmation, which should (other things being equal) facilitate their smiling. That men end up smiling less than women may indicate that the inhibitory effect is stronger than the facilitative one, and/or that men's overall level of positive affect is lower than women's, meaning that (again, other things being equal) their overall level of smiling would be lower.

For men, the feedback arrows going from smiling back to affect may also be more complex than for women. Though men's lower smiling would minimize the positive affect that would have resulted from facial feedback, at the same time not smiling might increase positive affect because of the reduction in anxiety, confusion, etc., that would have come with performing a behavior that violates the norms for men.

Conformity to gender roles/schemas would also have implications for men's smiling. Characteristics such as being task oriented, competitive, and expressing strength or expertise might all inhibit smiling in men either because of the stereotypic association of smiling with

weakness or simply because smiling may not be functionally relevant to the fulfillment of these goals. This factor would also have a feedback arrow going to positive affect, because having and expressing these gender-linked motives might be intrinsically rewarding. For example, to the extent that less smiling makes it more difficult to "read" a person's emotional state, and to the degree to which remaining "unreadable" is associated with feelings of strength, mastery, competence, and "status" for men during interaction, we might expect men to feel good about smiling less. However, as above, there is a contradiction because this effect on positive feedback should promote, not inhibit, smiling.

Men's responses to the social situation could also serve to inhibit their smiling, and, again, the feedback processes could be complex. If people smile less at men, we would expect men's smiling to be reciprocally reduced, which could in turn reduce their positive affect through the reduction of facial feedback and also because they are experiencing a less positive social environment. However, it is also possible that a man's positive affect would be increased to the extent that fulfilling others' expectations is satisfying. Furthermore, when men are smiled at, an important consideration could be the gender of the other person. A man might feel increased positive affect when smiled at by a woman, but he may experience decreased positive affect when smiled at by a man, due to homophobia, suspicion, fear, etc., with further implications for his own smiling.

The final factor that might influence men's smiling is social knowledge/learning. The feedback arrows to positive affect from this factor could be both positive and negative. Positive affect would be experienced by successfully acting like those whose behavior has been modeled in the past. However, if the behaviors that males practice are less interpersonally oriented and less rewarding to others, the ultimate impact on emotional state could be negative. It is also reasonable to predict that if men do in fact possess less knowledge about norms, display rules, etc., then the feedback to their own affective state from this lack of knowledge would be negative. However, if men have different norms concerning smiling, then the feedback might be positive. For example, men might reserve smiling to those situations where there is a particular gain or they have a close relationship with the other person. Men may be aware of "others' needs" but choose not to smile because doing so would violate their internalized expectations. Thus the feedback to their affective state could be positive.

What is important to understand about how this model reflects on male smiling is that, as with women, there may be a pervasive relationship between expressed behaviors and internal emotional states.

However, for men the bidirectional relations between affective states, other proximal causes of smiling, and smiling itself may be more complex than is the case for women. In the case of women, a positive cycle exists such that virtually all of the hypothesized influences yield the same outcomes – positive affect and more smiling – which in turn reinforce one another. With men, there are contradictory processes such that some processes lead to more positive affect (and more smiling), while others lead to the reverse. The fact that some elements in the model are predicted to increase men's positive affect might explain why gender differences in smiling are not even greater than they are.

Expressiveness and expression accuracy

Overview of gender differences

We consider nonverbal expressiveness and expression accuracy together but it is important to point out how they differ. *Expressiveness* refers to facial and gestural animation. *Expression accuracy* refers to whether expressive movements accurately convey affective information to an audience. Within expression accuracy, there are two subtypes: *spontaneous* and *posed*. An expressor has high *spontaneous* expression accuracy if an observer can infer what the expressor's feelings are from his/her nonverbal behavior even though the expressor is not deliberately communicating. (The most common method for measuring spontaneous expression accuracy is the slide-viewing technique [Buck, 1984], in which expressors' faces are videotaped while they watch slides with emotional content, after which naive judges try to identify the slide from looking at the expressors' faces.) An expressor has high *posed* expression accuracy if he/she deliberately tries to convey affective messages through nonverbal cues and succeeds in doing so (in terms of an audience's judgments). These two kinds of expression accuracy are positively correlated.

Expressiveness

Hall's (1984) meta-analysis of facial expressiveness located only 5 studies but the average effect was $r = .45$, a rather strong tendency for females to be more facially expressive than males (EMG studies were not included). Gestural expressiveness, based on 7 results, also showed females to be more expressive ($r = .28$). Another 4 gestural results located since then had a very similar average effect size of $r = .27$ (citations available from first author).

Expression accuracy

Combining both spontaneous and posed expression accuracy, Hall (1984) found that females' nonverbal cues were more accurately judged than males' (average effect size $r = .25$, based on 35 studies). Ten more studies located for the present review yielded an average effect size r of .18 (citations available from first author). However, channel of communication is a moderator of this difference: the difference occurred for facial expression in the 1984 review but not for vocal cues, and, consistent with this, in the studies obtained for the present review the only one using vocal cues found a substantial male expressor advantage ($r = -.50$). If that result is omitted from the more recent summary, the average effect size is $r = .25$, identical to the 1984 review. Finally, in the Hall (1984) review, the gender difference was of equivalent magnitude for posed versus spontaneous accuracy.

In addition to this overall summary, one can ask whether the gender difference in expression accuracy varies depending on what emotion is being expressed. Based on the fact that some emotions are stereotyped as "female" (happiness, sadness, fear) and others as more "male" (anger, contempt, disgust) (Brody & Hall, 1993), one might predict a corresponding pattern of accuracy differences. We offer the following provisional summary of research on this question. Hall (1984) could discern no overall pattern in the studies available at that time, and the more recent study of Tucker and Friedman (1993) found the gender difference to be equally strong (in the female direction) for happiness and anger, and very small for sadness, a pattern that does not support the stereotypes. However, other studies done since the Hall (1984) review provide more support for the prediction based on stereotype. Tucker and Riggio (1988) found the gender difference to be greater (in the female direction) for happiness than for sadness, and smallest for disgust; and several studies found that the typical female expression advantage was diminished or reversed for anger (Coats & Feldman, 1996; Rotter & Rotter, 1988; Wagner, MacDonald, & Manstead, 1986).

But the cross-national study of Biehl, Matsumoto, Ekman, Hearn, Heider, Kudoh, & Ton (1997) challenges the conclusion that gender differences in expression accuracy parallel the gender stereotype of different emotions. Biehl et al. administered standard photographs of facial expressions to samples in the United States and 5 other countries, 3 of which were Asian. Effect sizes were not available in their article, but an analysis of the percentage of judges in each country who successfully judged the Caucasian expressors shows some very surprising patterns. If one considers just the United States sample judging Caucasian faces, the data support the hypothesis that men and women are better at

expressing gender-stereotypical emotions: accuracy was higher for men expressing anger, contempt, and disgust, and accuracy was higher for women expressing fear and happiness. However, data from the other national samples show some wide discrepancies from this pattern. For Japanese judges, the data suggest that women express anger and contempt better than men do; for Sumatrans and Vietnamese the data suggest that women express disgust better than men do; and for Sumatrans and Vietnamese, the data suggest that men express fear better than women do – all results that are inconsistent with the United States data and with the prevailing stereotype. What could account for these discrepant results, considering that the expressive stimuli were the *same* for all samples? The answer may be judgment biases: if judges believe “women don’t show anger,” then when presented with an angry female face they may choose other alternatives besides anger, which would lower her apparent accuracy at expressing anger. A bias to “see” female-stereotypic emotions in female faces would similarly inflate the apparent accuracy with which women express those emotions. Coats and Feldman (1996) were sensitive to this problem and applied Wagner’s (1993) correction for rating bias, concluding that rating bias did not explain the stereotypic pattern they obtained. Encouraging though this is, other studies remain vulnerable to rating-bias artifacts, and the data of Biehl et al. (1997) suggest that these should be considered further.

Before concluding this summary, one more finding deserves mention. Coats and Feldman (1996) found that for women, those who were more accurate expressors of happiness were judged more popular (using sociometric methods), but for men, those who were more accurate expressors of anger were judged more popular. This finding suggests that there are negative consequences for a person who has a relatively weak ability to express gender-stereotypic emotions. When we discuss decoding accuracy, we shall see this pattern repeated.

Explanations

Because of space constraints, it is not possible to discuss the full spectrum of possible explanatory factors for women’s expressiveness and expression accuracy. In brief, we believe that gender-linked social traits/values (see Zuckerman, DeFrank, Spiegel, & Larrance, 1982) and women’s responses to situational cues remain important. However, the proximal affective cause of the nonverbal behavior would not be positive affect, as it was in the case of smiling, but would be the *intensity of emotional experience*. Consistent with such a view, women report experiencing higher levels of emotional intensity, both positive and

negative, than men do (Diener, Sandvik & Larsen, 1985; Fujita, Diener, & Sandvik, 1991; Gross & John, 1985). Emotional contagion (Hatfield et al., 1994) may also play a significant part in this gender difference, as could women's greater ability to deliberately mimic expressions (Berenbaum & Rotter, 1992), both of which could, combined with internal feedback processes, serve to intensify women's emotional experience.

Another difference from the smiling model is that the feedback arrows that go from the proximal causes of the nonverbal behavior back to emotional state (those on the left side of the figure) would probably not be operative, the reason being that the proximal causes (identified in figure 5.1) should not serve to intensify one's feelings in a general sense. Finally, social knowledge/learning may play a stronger role than it did for smiling, especially for posed expression accuracy which obviously requires knowledge of nonverbal encoding rules. Success on posed expression tasks likely also draws on motivation (trying to do well), which is not likely to be the case for accuracy of spontaneous expression.

Nonverbal judgment accuracy

Overview of gender differences

The findings for accuracy in judging the meanings of nonverbal cues (decoding accuracy) are remarkably consistent across ages, gender of expressor, tasks, and cultures. In the first meta-analysis (Hall, 1978), women scored higher on average, with an effect size r of .20 (46 studies). In a second (nonoverlapping) review, Hall (1984) found an average effect size r of .25 (18 studies). In yet a third and non-overlapping review (done for this chapter, citations available from first author), the average effect size r was .26 (18 studies). The proportion of these studies showing females to score higher than males (regardless of p -value) is extremely high (84%, 91%, and 94% in the three summaries), and the proportion showing the difference to be statistically significant is also much higher than one would expect by chance.³

Underscoring the consistency and universality of this gender difference, Rosenthal, Hall, DiMatteo, Rogers, and Archer (1979) reported that females scored higher than males in 80% of 133 US and non-US samples that were administered the Profile of Nonverbal Sensitivity (PONS), a test of decoding face, body, and voice cues. The average effect size (r) was .20 – very close to that found in the summaries reported above. (Only a handful of the 133 PONS studies were included in those summaries, so the results are not redundant.) Other programs of

research, using different tests, have also found cross-cultural consistency in this gender difference (e.g., Biehl et al., 1997; Izard, 1971). Biehl, for example, found an overall female decoding advantage across six groups (USA, Japanese, Sumatran, Vietnamese, Polish, and Hungarian), two cultures of encoders (USA and Japanese), and six emotions, with an overall effect size of $r = .25$, which is remarkably similar to the overall effects found in earlier reviews.

Such consistency over geography and hundreds of studies is truly remarkable. Although the specific judgment tasks varied (including both posed and spontaneous expressions), virtually all of the studies involved judgment of affect. Therefore it can be concluded that there is a gender difference in accuracy of identifying affective messages from nonverbal cues.

The question of whether the gender difference varies with different emotions has not been thoroughly studied. In an unpublished meta-analysis of gender and decoding accuracy (Bauer, Kulkarni, & McGowan, 1997), the largest gender difference was for fear, with anger and joy in the next ranks. Gender differences for surprise, love, and sadness were extremely small. This pattern does not well match predictions based on which emotions are stereotypically associated with the sexes.

A final topic for summary concerns correlates of judgment accuracy. Data from children suggest that there are gender differences in the consequences of being deficient in judgment of particular emotions. Social adjustment/acceptance appears to be lower for girls when they are deficient at judging happy, sad, and fearful nonverbal cues, but lower for boys when they are deficient at judging angry nonverbal cues (Nowicki & Mitchell, 1998). Thus, there may be social consequences for children whose pattern of decoding accuracy does not fit with gender-stereotypical expectations.

Explanations

In the case of judgment accuracy, the amendments we would make to the model are similar to those we mentioned for expression accuracy, with an even more reduced role for the level or nature of currently experienced affect. However, it is important to note that almost all research on judgment accuracy is so far based not on actual interpersonal interaction, but on accuracy in judging a standard set of affective stimuli. When considering actual interaction additional factors may become operative. Patterson's (1995) analysis of the cognitive demands of on-line encoding and decoding suggests that currently experienced emotion (anxiety, for example) may siphon cognitive resources away

from one's capacity to process another interactant's cues and would therefore have an impact on judgment accuracy.

The path in the model pertaining to relative status follows from theoretical predictions that lower status people are more nonverbally sensitive (Henley, 1977; LaFrance & Henley, 1994). So far, the evidence does not support this hypothesis, and indeed some research finds the opposite (Hall & Halberstadt, 1997; Hall, Halberstadt, & O'Brien, 1997). As noted above, most research is based on standardized test scores. However, even when communication accuracy is measured between people engaged in actual interaction, the data do not suggest that the lower-status person is more motivated to decode cues accurately (Snodgrass, Hecht, & Ploutz-Snyder, 1998).⁴

Success on a nonverbal judgment task involves some mix of knowledge and effort. At present very little is known about the impact of motivation on nonverbal judgment accuracy (Nowicki & Richman, 1985), and in particular it is not known how differences in knowledge versus motivation may contribute to gender differences in nonverbal judgment accuracy (Graham & Ickes, 1997).

Conclusion

Our brief summary of findings showed that women smile more than men, are more expressive than men, and show higher levels of both expression accuracy and nonverbal judgment accuracy than men. In different ways, each of these differences is likely to be related to emotion. According to the theoretical model which we described most thoroughly for smiling in women, there are a number of distinct (though interrelated) causal factors, many of which have feedback arrows back to the expressor's emotional state. Thus, even when the direct cause of females' smiling is conformity to gender roles, positive affect may result from enacting those roles (stemming from both the act and its consequences), thus contributing to positive affect and more smiling.

We also mentioned some ways in which the factors influencing men's as opposed to women's smiling may be the same or different, the net result of which is the hypothesis that men actually experience less positive affect in interaction with predictable effects on behavior.

Expressiveness, expression accuracy, and judgment accuracy have, by definition, a relationship to emotion because typically the tasks and measures are based on affective cues. The question of which specific emotions are sent or judged with the greatest or least accuracy by each sex is not settled at the present time. There is, however, evidence that deficiencies in expressing and judging gender-stereotypic emotions may have negative social consequences.