Short research note

The influence of gender, social roles, and facial appearance on perceived emotionality

URSULA HESS[1]*, PASCAL THIBAULT[1],
REGINAL B. ADAMS Jr.[2] AND ROBERT E. KLECK[3]
[1]*University of Quebec at Montreal, Canada*
[2]*The Pennsylvania State University, USA*
[3]*Dartmouth College, USA*

Abstract

One of the most pervasive gender stereotypes in Western culture concerns expectations regarding men's and women's emotionality. Whereas men are expected to be anger prone, women are expected to smile more. At the same time, men are generally perceived as more facially dominant and facially dominant individuals are expected to show more anger. That is, both facial appearance and social role expectations would lead observers to expect men to show more anger. The present research had the goal to disentangle the unique contribution of these two factors. As it is impossible in our society to fully untangle the influence of these factors since they are highly confounded, we created an alien society where these factors could be unconfounded. In this alien world, Deluvia, child rearing is exclusively assumed by a third gender, the caregiver, whereas men and women share the same social roles. The facial appearance of the Deluvians was varied along the dominance continuum. The results showed that facially dominant Deluvians, regardless of gender, were expected to show more anger, disgust, and contempt and less happiness, fear, sadness, and surprise. Also, the nurturing caregivers were expected to show less anger, contempt, and disgust as well as more fear, sadness, and surprise, regardless of facial appearance. No effect of gender per se on perceived emotionality was found. Copyright © 2009 John Wiley & Sons, Ltd.

One of the best-established gender stereotypes in Western cultures regards men's and women's emotionality (e.g., Fischer, 1993). Specifically, women are expected to smile more than men, but also to be overall more emotional than men, whereas men are expected to show more power-based emotions such as anger and contempt. Two different types of explanations for these gender expectations have been proposed and studied: Social roles and facial appearance.

SOCIAL ROLES AND GENDER EMOTION STEREOTYPES

Two types of social role considerations have been advanced as pertinent in this context: The level of power/status that is attributed to an expresser and the level of nurturing versus agentic behavior that is expected from an expresser. The perceived power or status of the expresser has been cited as an explanation for gender expectations regarding smiling as well as for the display of anger. Specifically with regard to smiling, Henley (1977, 1995) as well as LaFrance and Henley (1994) emphasize that women are generally considered to have less power/status than men and that smiling in women is therefore a form of appeasement behavior that is adaptive for a low power/status individual. Conversely, anger expressions in men are perceived as more appropriate because of men's higher status/power. Averill (1997), for example, has made the

*Correspondence to: Ursula Hess, Department of Psychology, University of Quebec at Montreal, CP 8888, station A, Montreal, QC, H3C 3P8, Canada.
E-mail: hess.ursula@uqam.ca

argument that anger has an ''entrance requirement'' of power. That is, for an anger display to be *perceived* as legitimate, the expresser has to have the power to address the anger-eliciting event successfully. This view is congruent with appraisal theories of emotion (e.g., Frijda, 1986; Scherer, 1999) that include ''power potential'' as a necessary requirement for anger experiences. In this context, Maybury (1997, cited in Shields, 2000) found that anger displays by high status protagonists were judged as more appropriate, favorable, and situationally motivated than those of low and medium status protagonists.

The second explanation for the stereotypical expectations regarding appropriate emotion displays by women and men focuses on their respective nurturing versus agentic roles (e.g., Brody & Hall, 2000; Shields, 2000). Specifically, it is generally assumed that women's nurturing role favors the acquisition of superior interpersonal skills and the ability to communicate nonverbally, whereas men's roles are seen as more agentic and hence may foster more goal directed displays (Eagly & Steffen, 1984).

More recently, LaFrance and Hecht (1999, 2000) have combined the power based and the role based explanations by proposing that higher power individuals have more leeway to show what they feel, whereas low status/power individuals are more strictly bound by social rules and expectations. That is, because women have less power they are more closely bound by the social rules that demand more nurturing behavior from them.

In sum, women are expected to show less anger both because they have less power and because they occupy nurturing roles and these two can combine as low power individuals are more tightly bound by social roles. Yet, whereas the role expectations for women are based on the fact that women give birth and hence are necessarily involved in nurturing tasks, it is not necessarily always the case that women have less power. Hence, even though the two factors lead to the same prediction—women show less anger—they represent different underlying causes.

This notion also implies that for high dominant women anger displays should be perceived as more appropriate because high dominant individuals are freer to show what they feel. Hence in an anger-eliciting situation a high dominant woman should be free to show anger. Conversely, as men are not bound by their social role to not show anger, they are always freer than women in general to show anger.

This was indeed what (Hess, Adams, & Kleck, 2005) found in a recent study. When a woman was presented as highly dominant in a vignette describing an anger-eliciting event, she was expected to show as much anger as a man. In contrast, when she was presented as low dominant she was expected to show a sadness expression, though for the low dominant man anger was still perceived as appropriate.

FACIAL APPEARANCE AND EMOTION STEREOTYPES

Yet, perceived levels of dominance and affiliation, irrespective of social role, may be important in this context as well. Specifically, dominance and affiliation are perceived behavioral dispositions that can be signaled by facial appearance and the pertinent perceptive cues are confounded with gender. A high forehead, a square jaw and thicker eyebrows have been linked to perceptions of dominance (Keating, 1985; Keating, Mazur, & Segall, 1981; Senior, Phillips, Barnes, & David, 1999; Zebrowitz & Collins, 1997) and are typical for men's faces (Brown & Perrett, 1993; Burton, Bruce, & Dench, 1993), whereas a rounded baby-face with large eyes is both feminine (Brown & Perrett, 1993; Burton et al., 1993) and perceived as more approachable (Berry & Brownlow, 1989) and warm (Berry & McArthur, 1986) and is more typical for women's faces. Thus, perceptions regarding the relative dominance and affiliation of men and women based on their gender specific facial appearance may in fact underlie expectations regarding men's and women's emotionality.

Consistent with this line of argument, a series of studies (Hess, Adams, & Kleck, 2004; Hess et al., 2005) found that both ratings of the perceived likelihood to show anger and happiness and ratings of the intensity of actual displays of these affects are influenced by facial dominance and affiliation cues. Specifically, mediational analyses showed that the tendency to perceive women as more likely to show happiness, as well as surprise, sadness, fear was mediated by their higher perceived affiliation; and, for fear and sadness, lower perceived dominance. Conversely, the tendency to perceive men as more prone to show anger, disgust, and contempt was partially mediated by both their higher level of perceived dominance and their lower level of perceived affiliation (Hess et al., 2005).

In a similar vein, Becker, Kenrick, Neuberg, Blackwell, and Smith (2007) proposed that anger has evolved to mimic masculinity whereas happiness has evolved to mimic femininity. They could show that faces that vary in masculinity cues (as manipulated by the eyebrow ridge) are rated as more angry to the degree that they are perceived as more masculine. That is, they found some physical overlap between masculine morphology and an angry appearance. In this sense, Hess,

Adams, Grammer and Kleck (2008) showed that androgynous individuals who show anger are more readily perceived as male whereas androgynous individuals who show happiness are more readily perceived as female.

This leads to the possibility that what has previously been described as a gender bias is rather a dominance/affiliation bias that applies equally to men and women. In this sense what has appeared to be a gender bias would be better described as an artifact of the unequal distribution of facial features associated with attributions of dominance and affiliation across genders. Put another way, the reason we ascribe different emotions to men and women is not based on their gender, but rather on differences in appearance, specifically, the different levels of dominance and affiliation that are signaled by male and female faces respectively. If facial appearance cues were indeed the sole determinant of perceived emotionality then in a society of androgynous appearing men and women, where there would be no visible difference in appearance between genders, there would also be no differential attribution of emotions to the two genders.

However, this position seems too simplistic. It is likely that social roles would have some influence in that the demand to nurture infants seems to require a certain level of affiliation and a need to suppress anger. Further, given the close association of gender to strength and size, these should be reasonable predictors of emotionality in some regards. Women are in fact physically weaker than men and we may therefore reasonably expect them to be more easily afraid of threatening objects or submissive rather than angry when aggressed against.

THE CONTRIBUTIONS OF SOCIAL ROLES AND FACIAL APPEARANCE FOR GENDER EMOTION EXPECTATIONS

In sum, two types of explanations for the pervasive beliefs regarding men's and women's emotionality found in Western cultures have been advanced. One is based on social role factors such as the distribution of power and nurturing versus agentic roles between the genders, whereas the other is based on the relative distribution of facial appearance cues associated with perceived dominance and affiliation across genders. As mentioned above, it is unlikely that one or the other exclusively underlies gender emotion stereotypes. Rather it is to be expected that both contribute. As they are based on two factors which are conceptually different—social roles on one hand and facial appearance on the other, which are confounded in everyday life because the individuals who occupy these roles have normally different appearances—the question is raised as to whether these factors can be disentangled. The question is not without general interest. Specifically, social roles are—up to a point—malleable and can change over time. In contrast, the cues we use as markers of dominance are the same that are used by other primates suggesting that these cues are considerably less malleable.

As mentioned earlier, it is almost impossible to disentangle the unique contribution of power, status, social roles, and facial appearance to gender expectations. In Western countries, men tend to occupy powerful social positions in politics and business and in many countries of this world they exclusively occupy these positions. Women not only exclusively bear children but also overwhelmingly are responsible for their upbringing, thereby assigning themselves a nurturing role. Thus, the relevant factors are for all intents and purposes heavily confounded in every day life.

However, it is not uncommon in science fiction to question gender roles and to imagine worlds where such roles are different from ours. This may include the addition of genders other than male and female or the redistribution of child rearing tasks (e.g., Cogenitors, in Star Trek Enterprise episode #48). We therefore created a science fiction scenario in which a planet is inhabited by members of a race that has three genders: Male, female, and caregiver. We manipulated social roles by describing the male and female as exactly equal in social dominance, whereas the submissive and nurturing role was assigned to a caregiver who was described as entirely responsible for the bearing and upbringing of the young. We varied the facial appearance of the members of each gender to be high, medium, or low in facial cues to dominance. Affiliation was not varied as the simultaneous manipulation of both sets of facial features led to extreme looking individuals, even in this context.

METHOD

Participants

A total of 1453 (391 men, 3 gender unknown) individuals with a mean age of 24 years (range = 15 to 85) participated in the study. A minimum of 130 participants was recruited for each of the nine conditions. Participants were recruited at parks

and public places in the larger Montreal area as well as in public spaces and classrooms at the University of Quebec at Montreal, the University of Montreal, and The Pennsylvania State University.

Stimulus Material

Faces

A series of male and female faces were modified to represent ''Aliens.'' The modified faces were rated in a pretest, regarding their level of extraversion, dominance, attractiveness, femininity, affiliativeness, and trustworthiness on bipolar seven-point Likert-type scales. Based on these ratings two male and two female based faces each that were high, intermediate, or low in dominance as well as intermediate in affiliation were selected. Figure 1 shows examples of the ''Aliens'' used for this experiment.

Story

Social roles were manipulated by presenting participants with a short description of an alien planet, Deluvia, and its inhabitants. The story emphasized that the nurturing role of childrearing was exclusively assumed by a third gender, the caretaker, who generally has only minimal education and if not taking care of children is usually employed in nursing. In contrast, the male and female Deluvians were both described as highly educated and working in the same professions. The main industries of Deluvia were described as space engineering and medicine. The story mentioned that Deluvians of the three sexes are rather similar in appearance and included photographs with three faces labeled Man, Woman, and Caregiver. Participants saw only one of the four sets of faces. The faces and labels were counterbalanced across participants so that each face was labeled as any of the three sexes in a complete 3 (facial dominance) × 3 (assigned gender) design.

Procedure

Participants were asked to carefully read the story and to respond to four questions regarding its content (e.g., what are Deluvia's main industries) to verify whether they had indeed read the text. They were then asked to look at one of the faces
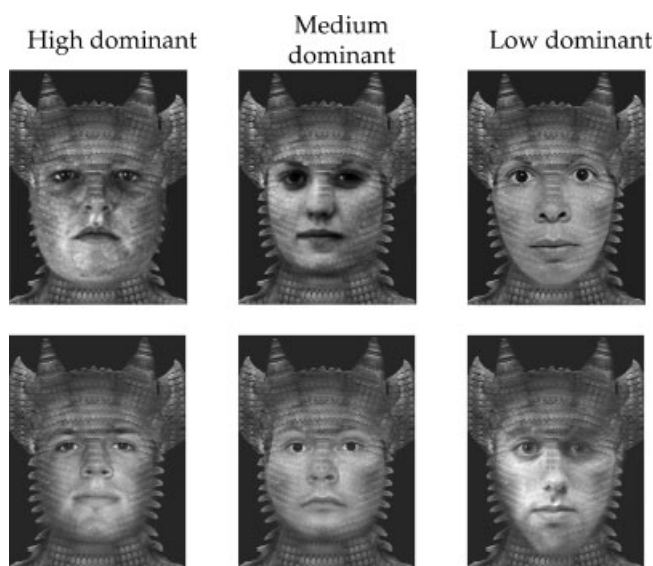

Figure 1.   Example for low, medium and high dominant Deluvians

and to rate the likelihood that this Deluvian would show each of the following emotions: Anger, contempt, disgust, fear, sadness, happiness, and surprise. Ratings were made on seven-point scales anchored with 0—not at all and 6—very likely.

RESULTS

To assess the influence of facial dominance, two 3 (man, woman, caregiver) × 3 (high, medium, low facial dominance) multivariate analysis of variance were conducted on the positive and negative emotion ratings collapsed over exemplars. Significant effects were followed up with univariate tests.

MANOVA Results

The MANOVA on the negative emotion ratings (anger, disgust, contempt, fear, sadness) yielded a main effect for facial appearance, $F(10, 2854) = 6.42$, $p < .001$, which was univariately significant for all emotions except disgust, for which it was marginally significant ($p = .056$), as well as a main effect of assigned sex, $F(10, 2854) = 5.47$, $p < .001$, which was univariately significant for all emotions. The interaction was not significant, $F(20, 5716) = .58$, $p = .928$.

The MANOVA on the positive emotion ratings (happiness, surprise) yielded a main effect of facial appearance, $F(4, 2886) = 6.74$, $p < .001$, which was univariately significant for both emotions, as well as a significant main effect of assigned sex, $F(4, 2886) = 2.59$, $p = .035$, which was univariately marginally significant for both happiness ($p = .082$) and surprise ($p = .081$). Again the interaction effect was not significant, $F(8, 2886) = .52$, $p = .845$.

The significant effects of facial appearance and assigned sex were followed up by univariate tests. The effect of assigned sex was decomposed into two sets of planned contrasts. To assess the specific influence of social roles, a planned contrast comparing the ratings for the men and the women with the ratings for the caregivers was conducted. A further planned contrast compared ratings for men and women to assess gender effects. Figures 2 and 3 show the means for the likelihood to show a specific emotion as a function of facial appearance and assigned sex.

Facial Appearance Effects

The univariate follow-up tests were significant or marginally significant for the three high dominant emotions (anger, contempt, and disgust), $F(2, 1430) = 14.03$, $p < .001$; $F(2, 1430) = 3.66$, $p = .030$; $F(2, 1430) = 2.88$, $p = .056$, respectively (see Figure 2). Tukey HSD *post hoc* tests ($p < .05$) showed that as predicted, the aliens with high dominant faces were rated as significantly more likely to show these emotions than were the aliens with low dominant faces. Ratings for the aliens with medium dominant faces were intermediate and for contempt and disgust did not significantly differ from
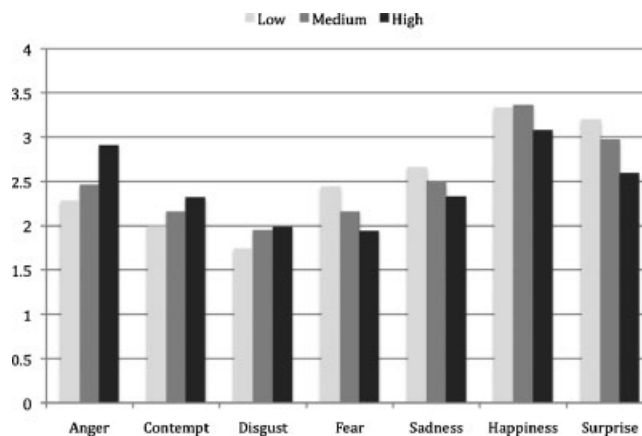

Figure 2.   Perceived likelihood for the Deluvian to show anger, contempt, disgust, fear, sadness, happiness, and surprise as a function of facial dominance
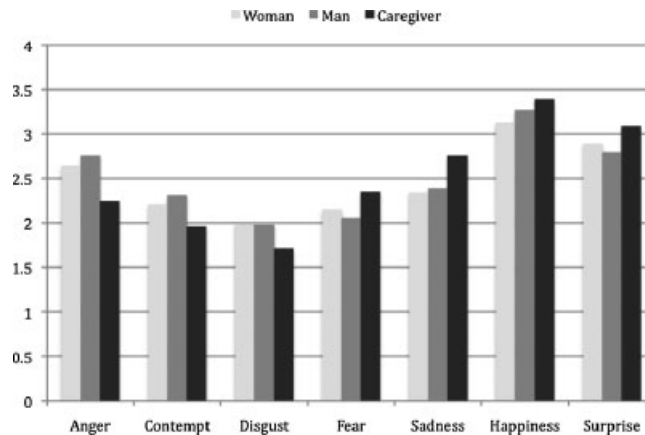
Figure 3. Perceived likelihood for the Deluvian to show anger, contempt, disgust, fear, sadness, happiness, and surprise as a function of assigned gender

either low or high dominant faces. For anger ratings intermediate faces were significantly different from high dominant faces.

In addition, follow-up univariate tests found mirroring facial appearance effects for fear, $F(2,1430) = 10.71$, $p < .001$, sadness, $F(2,1430) = 3.67$, $p = .026$, happiness $F(2, 1443) = 3.04$, $p = .048$, and surprise, $F(2, 1443) = 12.12$, $p < .001$. As predicted, the aliens with the low dominant faces were rated as significantly more likely to show these emotions than were the aliens with either low or medium dominant faces. Ratings for intermediate faces were generally intermediate except for happiness where they were highest but did not differ from ratings for low dominant faces. For sadness ratings of medium dominant faces did not differ from either low dominant or high dominant faces. In the case of fear, ratings for intermediate faces differed from ratings for low dominant faces and for surprise ratings for intermediate faces differed from ratings for high dominant faces.

Social Role and Gender Effects

Univariate follow-up tests showed that significant or marginally significant main effects of assigned gender emerged for anger, $F(2, 1430) = 10.47$, $p < .001$, contempt, $F(2, 1430) = 5.12$, $p = .006$, disgust, $F(2,1430) = 4.69$, $p = .009$, fear, $F(2, 1430) = 3.35$, $p = .029$, sadness, $F(2, 1430) = 6.92$, $p = .001$, happiness $F(2,1443) = 2.50$, $p = .082$, and surprise, $F(2,1443) = 2.52$, $p = .081$ (see Figure 3).

Of specific interest for the present inquiry are the planned contrasts comparing on one hand the ratings for the men and the women with the ratings for the caregivers to assess social role effects and on the other, ratings for men and women to assess gender effects.

Social Role Effects

Specifically, as predicted, caregivers were expected to show less anger ($p < .001$), contempt ($p = .002$), disgust ($p = .002$) but more fear ($p = .018$), sadness $p < .001$, and surprise ($p = .053$) as well as marginally more happiness ($p = .067$) than the men or the women for whom expectations did not differ.

Effects of Assigned Gender

Planned contrasts did not reveal any differences between ratings for assigned men and women.

DISCUSSION

As expected, we found no effects as a function of an individual being described as a men or a women but did find effects for both facial appearance and social roles. The predicted facial appearance effect emerged for the low dominant emotions fear, sadness, and surprise as well as for the high dominant emotions anger, disgust, and contempt, thereby supporting previous research emphasizing the importance of dominant facial appearance for the perception of these emotions (Hess et al., 2004, 2005).

The facial appearance effect for fear parallels findings by Marsh, Adams, and Kleck (2005) who studied the effect of facial maturity, which is conceptually related to dominance, on the perception of fear expressions. Overall, these data support previous findings that dominant appearance overlaps with an angry appearance and hence leads observers to expect more anger and anger related emotions from an individual who is perceived as dominant. Conversely, these individuals are expected to show less of submission related emotions such as fear and sadness.

Social role effects emerged for all emotions. In Quebec little distinction is made between disgust and contempt (and to a lesser degree anger) and in colloquial speech the same word (écoeuré) can be used for these emotions. In addition contempt is perceived to be a very agentic emotion and a means to express moral and social superiority. Hence it is not surprising that social role expectations influence the attribution of these emotions. That the nurturing caregiver was expected to show more happiness is consistent with the nurturing stereotype. The case for fear and sadness is more intriguing. Both are emotions related to withdrawal and can signal a need for affiliation (Hess, Blairy, & Kleck, 2000) which is part of a nurturing stance.

Further, Hess et al. (2000) found that women are expected and expect themselves to show sadness in reaction to a wide range of emotion eliciting situations, including situations that typically elicit anger in men. They are also expected to show more fear than men in fear situations. The present data seem to suggest that this expectation may be less a function of gender than of female social role demands. Interestingly, no interaction effect emerged. That is, in this context, social role and facial appearance make independent contributions to perceiver responses.

The present data suggest that both facial appearance and social roles contribute to create expectations regarding a person's emotionality. In contrast, gender in terms of a simple male—female distinction was not found to have an effect. Even though these findings can only be considered suggestive of the actual variance explained by each factor in the "real world" they nonetheless suggest that our expectations regarding a man's or a woman's emotionality is largely based on their different facial appearances and, to a lesser extend, on their social roles. In a society like the Deluvian society, where men and women look similar and perform the same tasks, no gender differences *per se* would be expected.

REFERENCES

Averill, J. R. (1997). The emotions: An integrative approach. In R. Hogan, J. A. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 513–541). San Diego, CA: Academic Press.

Becker, D. V., Kenrick, D. T., Neuberg, S. L., Blackwell, K. C., & Smith, D. M. (2007). The confounded nature of angry men and happy women. *Journal of Personality and Social Psychology*, *92*, 179–190.

Berry, D. S., & Brownlow, S. (1989). Were the physiognomists right? Personality correlates of facial babyishness. *Personality and Social Psychology Bulletin*, *15*, 266–279.

Berry, D. S., & McArthur, L. Z. (1986). Perceiving character in faces: The impact of age-related craniofacial changes on social perception. *Psychological Bulletin*, *100*, 3–10.

Brody, L. R., & Hall, J. A. (2000). Gender, emotion, and expression. In M. Lewis, & J. M. Haviland (Eds.), *Handbook of emotions* (2nd ed., pp. 447–460). New York: Guilford Press.

Brown, E., & Perrett, D. I. (1993). What gives a face its gender? *Perception*, *22*, 829–840.

Burton, A. M., Bruce, V., & Dench, N. (1993). What's the difference between men and women? Evidence from facial measurement. *Perception*, *22*, 153–176.

Eagly, A. H., & Steffen, V. J. (1984). Gender stereotypes stem from the distribution of women and men into social roles. *Journal Personality and Social Psychology*, *46*, 735–754.

Fischer, A. H. (1993). Sex differences in emotionality: Fact or stereotype? *Feminism & Psychology*, *3*, 303–318.

Frijda, N. (1986). *The emotions*. Cambridge: Cambridge University Press.

Henley, N. M. (1977). *Body politics: Power, sex and nonverbal communication*. New York: Prentice Hall.

Henley, N. M. (1995). Body politics revisited: What do we know today? In P. J. Kalbfleisch, & M. J. Cody (Eds.), *Gender, power, and communication in human relationships* (pp. 27–61). Hillsdale, NJ: Lawrence Erlbaum Associates.

Hess, U., Adams, R. B., Jr., & Kleck, R. E. (2004). Facial appearance, gender, and emotion expression. *Emotion*, *4*, 378–388.

Hess, U., Adams, R. B., Jr., & Kleck, R. E. (2005). Who may frown and who should smile? Dominance, affiliation, and the display of happiness and anger. *Cognition and Emotion*, *19*, 515–536.

Hess, U., Adams, R.B.J., Grammer, K., & Kleck, R.E. (2008). If it frowns it must be a man: Emotion expression influences sex labeling. *Manuscript submitted for publication*.

Hess, U., Blairy, S., & Kleck, R. E. (2000). The influence of expression intensity, gender, and ethnicity on judgments of dominance and affiliation. *Journal of Nonverbal Behavior*, *24*, 265–283.

Keating, C. F. (1985). Human dominance signals: The primate in us. In S. L. Ellyson, & J. F. Dovidio (Eds.), *Power, dominance, and nonverbal communication* (pp. 89–108). New York: Springer Verlag.

Keating, C. F., Mazur, A., & Segall, M. H. (1981). A cross-cultural exploration of physiognomic traits of dominance and happiness. *Ethology and Sociobiology*, *2*, 41–48.

LaFrance, M., & Hecht, M. A. (1999). Option or obligation to smile: The effects of power and and gender on facial expression. In P. Phillipot, R. S. Feldman, & E. J. Coats (Eds.), *The social context of nonverbal behavior* (pp. 45–70). Cambridge, UK: Cambridge University Press.

LaFrance, M., & Hecht, M. A. (2000). Gender and smiling: A meta-analysis. In A. H. Fischer (Ed.), *Gender and emotion: Social psychological perspectives. Studies in emotion and social interaction. Second series* (pp. 118–142). Cambridge, UK: Cambridge University Press.

LaFrance, M., & Henley, N. M. (1994). On oppressing hypotheses: Or differences in nonverbal sensitivity revisited. In H. L. Radtke, & H. J. Stam (Eds.), *Power/gender: Social relations in theory and practice. Inquiries in social construction* (pp. 287–311). London, UK: Sage Publications.

Marsh, A. A., Adams, R. B., Jr., & Kleck, R. E. (2005). Why do fear and anger look the way they do? Form and social function in facial expressions. *Personality and Social Psychological Bulletin*, *31*, 73–86.

Maybury, K. K. (1997). The influence of status and sex on observer judgments of anger displays. Unpublished Doctoral Dissertation. University of California, Davis.

Scherer, K. R. (1999). Appraisal theory. In T. Dalgleish, & M. J. Power (Eds.), *Handbook of cognition and emotion* (pp. 637–663). Chichester, UK: John Wiley & Sons Ltd.

Senior, C., Phillips, M. L., Barnes, J., & David, A. S. (1999). An investigation into the perception of dominance from schematic faces: A study using the World-Wide Web. *Behavior Research Methods, Instruments and Computers*, *31*, 341–346.

Shields, S. A. (2000). Thinking about gender, thinking about theory: Gender and emotional experience. In A. H. Fischer (Ed.), *Gender and emotion: Social psychological perspectives* (pp. 3–23). Cambridge, UK: Cambridge University Press.

Zebrowitz, L. A., & Collins, M. A. (1997). Accurate social perception at zero acquaintance: The affordances of a gibsonian approach. *Personality and Social Psychological Review*, *1*, 204–223.