

She's Emotional. He's Having a Bad Day: Attributional Explanations for Emotion Stereotypes

Lisa Feldman Barrett
Boston College, Massachusetts General
Hospital/Harvard Medical School

Eliza Bliss-Moreau
University of California, Davis

People believe that women are the more emotional sex. This belief stems less from what men and women actually do than from the explanations given for their behaviors. In 2 studies, participants who were given situational information about the causes of emotional expression in target faces nonetheless more frequently judged feminine targets depicting emotions as “emotional” (i.e., a dispositional attribution for the emotional behavior), whereas they more frequently judged masculine targets as “having a bad day” (i.e., a situational attribution for the emotional behavior). These findings help explain the pervasive belief that women are more emotional when compared with men, even when the scientific veracity of this belief is questionable.

Keywords: emotion, attribution, sex differences

Both scientists and lay people alike are preoccupied with the question of whether men and women differ systematically in their emotional responses. Books in the popular press assume that women are emotionally complex and expressive, whereas men are stoic and reserved (e.g., Baron-Cohen, 2003; Gray, 1992; Pease & Pease, 2001). Women supposedly evolved brains that are wired for more emotionality (Brizendine, 2006; Vigil, in press). In novels, women are portrayed as having more extreme emotional lives when compared with men (cf. Seligman, 2002). Some people even believe that women are too emotional to be elected President of the United States (Nagourney, 2006). Academic reviews confirm the existence of this stereotype (e.g., Brody & Hall, 1993; Fischer & Manstead, 2000; LaFrance & Banaji, 1992; Shields, 1987). The belief that women are prone to greater emotion may help explain and even justify why women continue to be underrepresented in positions of economic and political power that require a level head and a steady hand. Jobs that require rational decision making and high levels of performance in demanding circumstances would presumably be unsuitable for those who cannot keep their head under pressure (Lutz, 1990).

Are Women Really More Emotional?

Despite the prevailing belief that women are the more emotional sex, consistent scientific evidence for sex differences in emotional

responding remains elusive. Men and women differ in their emotional reports when they are influenced by gender role knowledge (Grossman & Wood, 1993; Robinson & Clore, 2002), but not when reporting their momentary or immediate responses to specific events (Barrett, Robin, Pietromonaco, & Eysell, 1998; Robinson, Johnson, & Shields, 1998). Women report that they are more emotionally expressive than are men (Barrett et al., 1998), and perceivers generally agree (Kring & Gordon, 1998). In fact, a recent meta-analysis of studies relying almost exclusively on perceiver-based judgments of behavior (i.e., studies based on ratings made by parents and teachers, or on self-ratings, rather than on objective, instrument-based measurements such as electromyographic activity of facial muscle movements) found that girls have a more emotional temperament when compared with boys (Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006).

The evidence for consistent sex differences in emotional responding using instrument-based measures of emotional behavior is less clear, however. In studies that examine electromyographically measured facial muscle movement responses to evocative stimuli such as slides and movies, some studies have reported sex differences (e.g., Bradley, Codispoti, Cuthbert, & Lang, 2001; Dimberg & Lundqvist, 1988; Grossman & Wood, 1993; Lundqvist, 1995, Experiment 1; Schwartz, Brown, & Ahern, 1980), but some have not (Kelly, Forsyth, & Karekla, 2005; Lundqvist, 1995, Experiment 2; Lundqvist & Dimberg, 1995; Sloan, Bradley, Dimoulas, & Lang, 2002). Some studies report greater activity in corrugator (brow) but not zygomatic (smile) activity in response to affectively potent slides (Lang, Greenwald, Bradley, & Hamm, 1993), whereas others find the exact opposite pattern (Greenwald, Cook, & Lang, 1989). Sometimes women smile more than men (LaFrance, Hecht, & Paluck, 2003) and sometimes less (Ansfield, 2007). Even with this mixed pattern of findings, the assumption that women are more emotionally expressive when compared with men remains pervasive. In fact, some studies of emotional processing have exclusively used female participants on the assumption that women are more emotional than men (Dimberg & Karls-

Lisa Feldman Barrett, Department of Psychology, Boston College; Departments of Psychiatry and Radiology, Massachusetts General Hospital/Harvard Medical School. Eliza Bliss-Moreau, Department of Psychiatry and Behavioral Sciences, California National Primate Research Center, University of California, Davis.

Many thanks to Natalya Yemelyanova and Lauren Brennan for their help in conducting Experiments 1 and 2, respectively. Preparation of this article was supported National Institute of Mental Health Independent Scientist Research Award K02 MH001981 and National Institutes of Health Director's Pioneer Award DP1OD003312 to Lisa Feldman Barrett.

Correspondence concerning this article should be addressed to Lisa Feldman Barrett, Department of Psychology, Boston College, Chestnut Hill, MA 02467. E-mail: barrettl@bc.edu

son, 1997; Canli, Zhao, Brewer, Gabrieli, & Cahill, 2000; Stemmler, Heldmann, Pauls, & Scherer, 2001).

Explanations for Emotional Behavior in Men and Women

A pressing and curious question, then, is why people continue to believe that women are the more emotional sex when the evidence to support this belief is inconclusive at best. One possible answer is that the belief is rooted not in how men and women routinely feel or behave, but in the way that people explain those feelings and behaviors. There is a tremendous amount of evidence that people believe another person's behavior is caused by his or her personality (i.e., a dispositional attribution of cause) or by the immediate context (i.e., a situational attribution of cause; for a comprehensive review, see Gilbert, 1998). Often, when inferring the cause of another person's behavior, perceivers engage in something called *correspondence bias* by assuming that the behavior reflects something deep, essential, and unique about the target person (i.e., inferring a dispositional cause for behavior) when, in fact, such behavior is a clear response to situational demands (e.g., Gilbert & Malone, 1995). It is possible that people believe that women are the more emotional sex because they are treating women's emotional behavior as evidence of an emotional nature, whereas men's emotional behavior is evidence that the situation warrants such behavior.

Although there is a considerable literature examining sex-based stereotypes of emotion, most have not focused on whether perceivers show a stronger correspondence bias for female expressions of emotion when compared with male expressions. Prior research on sex-based perceptions of emotion has addressed whether emotion is differentially seen in male and female faces (Haviland, 1977; Schiffenbauer & Babineau, 1976), whether particular behaviors are seen in faces that appear to be male or female (e.g., is anger or disgust seen more often in male and happiness or sadness or fear in female faces; Becker, Kenrick, Neuberg, Blackwell, & Smith, 2007; Condry & Condry, 1976; Plant, Hyde, Keltner, & Devine, 2000; Plant, Kling, & Smith, 2004; Tendayi & Abrams, 2003; Widen & Russell, 2002; but see Hess, Adams, & Kleck, 2004), or whether different intentions (Forgas, O'Connor, & Morris, 1983; Hess, Blairy, & Kleck, 2000) or responsibilities (Kleinke & Kane, 1997; Morrongiello & Rennie, 1998) are inferred from facial behaviors in male as compared with female target faces.

Only two published sources provide evidence that perceivers are more likely to make a dispositional attribution for female (vs. male) expression of emotion. First, Shields (2002) described a vignette study (originally published in Shields & Crowley, 1996) where, after reading a short description of a target person expressing emotion in an emotion-provoking situation (i.e., having one's car stolen), perceivers provided situational reasons for the emotional expression when the target was male but dispositional reasons when the target was female. Second, a recently published article demonstrated that women's angry expressions are attributed to internal characteristics, whereas men's behaviors are attributed to the external circumstances (Brescoll & Uhlmann, 2008). In comparison with a male target expressing anger during a videotaped "job interview," a female target expressing anger was described as being an angrier person (Experiment 1) who was less in control (Experiment 2). Furthermore, providing an external reason

for the target person's angry behavior eliminated the gender-based correspondence bias (Experiment 3).

Yet, there is a wealth of empirical evidence that perceivers spontaneously attribute the cause of behavior to the person rather than the situation—that is, they make spontaneous trait inferences—when they encode visual information about a target (i.e., a face). Furthermore, this correspondence bias maintains even after situational information is provided (Todorov & Uleman, 2002, 2004). We hypothesized that perceivers would be more likely to spontaneously engage in a correspondence bias when viewing women (vs. men) expressing a range of emotions (i.e., not just anger).

In the present article, we report two studies that modified the spontaneous trait inference paradigm (Todorov & Uleman, 2002, 2004; Todorov, Gobbini, Evans, & Haxby, 2007) to examine the hypothesis that perceivers initially and spontaneously believe that women's emotional behavior is caused by their emotional nature, whereas men are emotional because the situation warrants it. We examined whether people make different attributions when the same emotional behaviors portrayed in male versus female faces are paired with situational information. We hypothesized that this bias would maintain when perceiving female targets, even when situational information for emotional behaviors was available at encoding.

Pictures of male and female faces depicting either anger, sadness, fear, or disgust were first paired with sentences describing situations that could have reasonably caused the emotional expression (e.g., a face depicting "anger" was paired with the sentence "was yelled at by boss"; see Figure 1). Because most posed depictions of emotion used in perception experiments are caricatures with limited ecological validity, we presented participants with emotional expressions that were of moderate intensity. After viewing all face-sentence pairs, participants performed an attribution task in which they viewed each target face alone and quickly judged whether the target was "emotional" or "having a bad day." Because all target faces were paired with situational cues at the outset, participants had sufficient information to make situational attributions (i.e., "having a bad day") for all target faces. In line with sex-based stereotypes for emotion, however, we predicted that participants would be more likely to make dispositional ("emotional") person judgments for female targets than for male targets. Furthermore, we examined the possibility that perceivers would remember the emotional expressions depicted by women as



Figure 1. An example of male and female depictions of anger, Experiment 1.

more intense than those depicted by men. Following the attribution task, participants were shown the target expressions and more intense versions of those expressions, and they were asked to judge which face they had seen before.

Experiment 1

Method

Participants. Forty-eight students (24 women) at Boston College ranging in age from 18 to 38 years ($M = 21.25$ years, $SD = 3.54$) participated in this study to fulfill a course research requirement or for monetary compensation.

Materials. Eight identities (four male and four female), each depicting a caricature expression of anger, fear, sadness, or disgust (for a total of 32 individuals), were used for stimuli development (Matsumoto & Ekman, 1988; Tottenham, Borscheid, Ellertsen, Marcus, & Nelson, 2002). We chose these emotion categories because, according to discrete emotion accounts, anger, fear, sadness, and disgust are supposed to have readily recognizable facial expressions. These expressions therefore provided a good foundation for testing our attribution hypothesis. Stimuli were morphed using MorphMan (Stoik Imagining, 2000) to create composites that reflected signal strength of 44.4% and 88.8% for each emotion category; for example, anger depictions were created by morphing an identity depicting neutral behavior (representing 0%) and the same identity depicting an angry expression (representing 100%). The sentences that were paired with the face stimuli are presented in Table 1.

Procedure. Participants were told that they would first be viewing pictures of people paired with descriptions of situations and to imagine each person in the situation so as to remember both later. Then, participants viewed 32 face–sentence pairings four times for a total of 128 trials. Only 44.4% strength faces served as target faces (i.e., were paired with descriptions of emotionally evocative situations). Each face was presented focally, with a sentence beneath it that corresponded to the emotion behavior depicted by the face. The face–sentence pairs were displayed on a computer screen for 3,000 ms with a 1-s intertrial interval (ITI). Two task versions were created to randomize the face–sentence pairings so that, across participants, every sentence was paired with both male and female targets. Participants were told that they would be asked to recognize the faces and recall the sentences later in the experiment.

Following the pretest phase, participants began the attribution phase during which they were shown the target faces without the sentences and were asked to quickly decide whether each target person was “emotional” (by pressing the *L* key on a standard keyboard that had been labeled *E*) or “having a bad day” (by pressing the *S* key which had been labeled *B*; response keys were counterbalanced across participants). Participants were told to make their decisions quickly, much like the snap judgments that people make in everyday life. Specifically, participants were told “a snap judgment is made quickly without any effort; it is like a gut reaction. For example, if you see a person yelling, you might assume that he or she is overly reactive or you might assume that he or she just experienced something upsetting. In the next task, we’d like you to judge whether a person is emotional or having a bad day.” Participants were shown all faces twice, for a total of 64 trials. Both judgments and response latencies were recorded during the attribution phase. Participants were instructed to keep their hands on the keyboard to facilitate fast responding. Faces were shown until a judgment was rendered ($ITI = 1$ s).

Following the attribution phase, participants completed a recognition phase during which they viewed each target (44.4% signal strength) face along with its stronger counterpart (the 88.8% version of the same identity) and were asked to decide which of the two faces they had seen previously. Participants were instructed to press the *I* key labeled *L* on the left-hand side of the keyboard if they thought that the previously seen (44.4% intensity) face appeared on the left; they pressed the *O* key labeled *R* on the right-hand side if the target face appeared on the right. Faces were displayed until a judgment was rendered ($ITI = 1$ s), and both judgments and response latencies were recorded.

Finally, participants were given 8 min to write down all the sentences they could remember from the pretest phase. Participants were instructed to be as complete and accurate as possible.

Results and Discussion

Both male and female perceivers showed a stronger correspondence bias (i.e., made more dispositional attributions) for female compared with male target faces depicting emotional expressions. Despite being given situational information to explain the emotional behavior on every trial, both male and female participants were more likely to judge that women’s emotional behavior was caused by their emotional nature, whereas men’s behavior was caused by a situation that warrants it. The mean frequency of

Table 1
Sentences Paired With Face Stimuli by Emotion Condition (Experiment 1)

Sad	Fear	Anger	Disgust
Was disappointed by a lover	Was threatened by an attacker	Was cut off by another driver	Got sprayed by a skunk
Buried a family pet	Was trapped in a burning building	Was pushed and fell to the ground	Took a large gulp of sour milk
Attended the funeral of a grandparent	Heard footsteps in the dark	Got yelled at by the boss	Saw a gruesome movie scene
Was separated from a best friend	Witnessed an armed robbery	Was elbowed in an elevator	Cleaned up putrid garbage
Remembered a depressing memory	Was chased by an angry bear	Did not get promoted at work	Saw an animal get run over by a car
Watched a friend cry inconsolably	Lost control of the car at high speed	Got cheated by a neighbor	Watched a leg being amputated
Got some bad news	Became stranded outside in a lightning storm	Was insulted by a stranger	Stepped into a puddle of vomit
Lost a family heirloom	Found a rattlesnake in the house	Argued with a coworker	Was served rotten eggs for breakfast

dispositional attributions in each condition is presented in Figure 2. A 2 (sex of target) \times 4 (emotion: sad, fear, anger, disgust) \times 2 (sex of participant) analysis of variance (ANOVA), with sex of target and emotion as within-subject variables, indicated that participants made more dispositional attributions for emotional expressions depicted by female targets when compared with those depicted by male targets, $F(1, 46) = 10.96, p < .002, \eta^2 = .19$. This main effect was moderated by a marginally significant sex of target by emotion interaction, $F(3, 138) = 2.29, p < .081, \eta^2 = .05$. An examination of the marginal means indicated that participants attributed the emotional expressions of women to a dispositional cause (i.e., to their presumably more emotional nature) at higher rates for sadness, fear, and anger, but that they did not differ in how they explained male and female depictions of disgust. Furthermore, a significant main effect for emotion, $F(3, 138) = 28.90, p < .001, \eta^2 = .39$, indicated that participants, in general, made more situational (or the fewest dispositional) attributions for disgust expressions, regardless of whether those expressions were depicted by a male or female target. In fact, people were most likely to make dispositional attributions for depictions of sadness, followed by depictions of fear, then anger, and then disgust (all marginal mean differences significant at $p < .05$). All other effects did not reach statistical significance, including the main effect for sex of participant, $F(1, 46) = 0.18, p < .67$.¹

The differences in causal attributions that we observed did not translate into differential memory for male and female target faces depicting emotion, as evidenced by a 2 (sex of target) \times 4 (emotion: sad, fear, anger, disgust) \times 2 (sex of participant) ANOVA on recognition judgments with sex of target and emotion as within-subject variables. The mean recognition accuracy for each condition is presented in Figure 3. The main effect for emotion was significant, $F(3, 138) = 12.12, p < .001, \eta^2 = .21$, such that participants were better able to recognize target faces depicting anger and disgust than those depicting sadness and fear (marginal means comparison, $p < .05$). This main effect was moderated by an emotion by sex of target interaction, $F(3, 138) = 3.12, p < .02, \eta^2 = .064$, reflecting that participants were more accurate in recognizing female target faces depicting anger when compared with male target faces depicting anger ($p < .05$); participants did not differ in their recognition rates for male and female targets in any other emotion category (although their memory was marginally better for female vs. male faces depicting fear).

Participants did not have more of a correspondence bias for female faces depicting emotion because they failed to remember the sentences paired those faces. Recall rates for sentences were subjected to a 2 (sex of target) \times 4 (emotion: sad, fear, anger, disgust) \times 2 (sex of participant) ANOVA with sex of target and emotion as within-subject variables. Mean recall rates are presented in Figure 4. A significant main effect for emotion, $F(3, 138) = 3.66, p < .014, \eta^2 = .074$, indicated that participants were better able to remember disgust sentences than fear sentences (the recall of both was not significantly different from recall for sad and anger sentences; marginal means comparison, $p < .05$). This main effect was modified by an emotion by sex of target interaction, $F(3, 138) = 4.19, p < .007, \eta^2 = .083$, reflecting that participants were better able to recall the sentences paired with sad and angry female faces when compared with those paired with male faces ($p < .05$). There was no difference between the sentences remembered for male versus female faces depicting fear or disgust. If

anything, then, the results indicate that participants were better able to remember target sentences that were paired with female target faces.

Finally, we examined whether participants made more dispositional attributions for emotional behaviors in faces that were paired with less intense situational causes. A second sample of participants ($N = 37$, 16 men; mean age = 21.75 years, $SD = 2.9$) rated how intensely evocative each situation was on a 4-point Likert-type scale (1 = *mild*, 4 = *extremely evocative*). The intensity of the situational causes varied with each emotion, $F(3, 108) = 39.31, p < .001, \eta^2 = .522$, such that the disgust-evoking situations were significantly more intense than were the anger- and fear-evoking situations, which in turn were more intense than the sadness-evoking situations. Although the pattern of dispositional attributions across emotion categories generally matched the intensity of the evoking situations, a hierarchical linear modeling analysis indicated that on a trial-by-trial basis there was no overall relationship between the intensity of the evocative situation with which a face was paired and the attribution given to the emotional behavior on that face, $t(47) = 0.77, p < .45$.

In summary, this experiment demonstrated that perceivers are more likely to show a correspondence bias when judging the cause of emotional behaviors in women when compared with men. In Experiment 2, we replicated this finding, and also examined whether the increased tendency to show a correspondence bias was somehow linked to the degree to which faces looked feminine (i.e., to the physical features of female vs. male faces).

Experiment 2

People of all ages who have facial qualities that resemble an infant (e.g., round face, smaller chin, larger eyes) are subject to what has been called the *baby-face overgeneralization effect* (Zebrowitz & Motepare, 2005) whereby they are judged to be psychologically similar to babies. Feminine faces are morphologically similar to baby faces (Enlow, 1982), leading to the possibility that inferences about female emotionality, just like other aspects of the female sex role stereotype (Friedman & Zebrowitz, 1992), result from this perceptual overgeneralization. To examine the possibility that the correspondence bias is linked to the perceived femininity of faces, participants in Experiment 2 viewed real male and female faces, as well as morphed androgynous faces (creating by morphing a male and female face each expressing the same emotion); these faces were made to appear either male or female by pairing them with a masculine or a feminine hairstyle. We predicted that, if sex-based differences in emotion attribution are linked to the perceptual features of male and female faces, then participants would make more dispositional attributions for target faces that appear to be more feminine.

Method

Participants. Forty-six participants (23 men) at Boston College ranging in age from 18 to 38 years ($M = 19.4$ years, $SD =$

¹ After removing outliers (1.2% of trials), we also examined both raw and log-transformed response latencies to render attribution judgments, but no significant differences were found. These results are not discussed any further, but are available from Lisa Feldman Barrett on request.

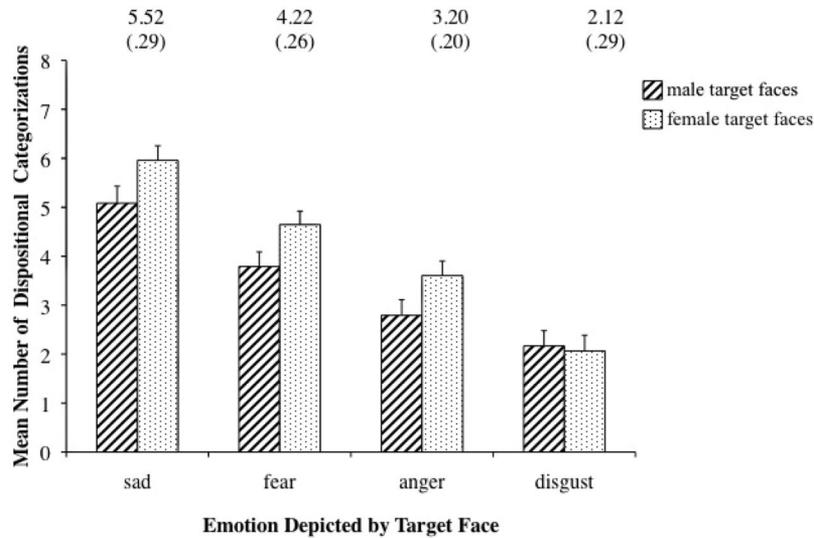


Figure 2. The mean frequency of dispositional attribution by condition, Experiment 1. Average rates of dispositional attribution for each emotion category, Experiment 1. Standard errors are presented in parentheses. The mean number of dispositional attributions for male targets was 3.46 ($SE = 0.15$); for female targets, it was 4.07 ($SE = 0.15$).

1.20) participated in this study to fulfill a course research requirement or for monetary compensation.

Materials and procedure. The materials and procedure were identical to Experiment 1 with the exception that half (16) of the target stimuli were androgynous faces constructed by morphing different male and female faces together (50% of each). Eight androgynous morphed faces were constructed and, following prior studies (Plant et al., 2004; Widen & Russell, 2002), were made to appear either male or female by pairing them with a masculine or a feminine hairstyle using Cosmo-

politan Virtual Makeover 3 (Broderbund Inc., 2003); this procedure produced a total of 16 target stimuli (2 “male” and 2 “female” target faces for each emotion category; see Figure 5 for an example). The other half of the target faces were true male and female faces similar to those used in Experiment 1, but their hair was also replaced (to make them appear less visually distinct from the androgynous target faces). In addition, because there is a general tendency for male facial traits to be lost in morphing so that faces appear more feminine (for a discussion, see Rhodes, 2006), we had a second group of

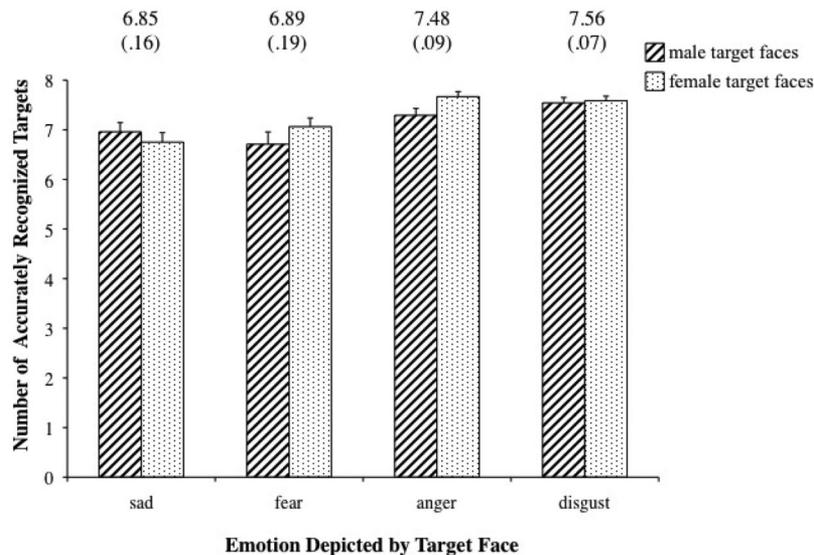


Figure 3. Mean recognition accuracy of emotion faces, Experiment 1. Mean recognition accuracy for each emotion category is presented. Standard errors are presented in parentheses. The mean recognition accuracy for male targets was 7.13 ($SE = 0.13$); for female targets, it was 7.27 ($SE = 0.10$).

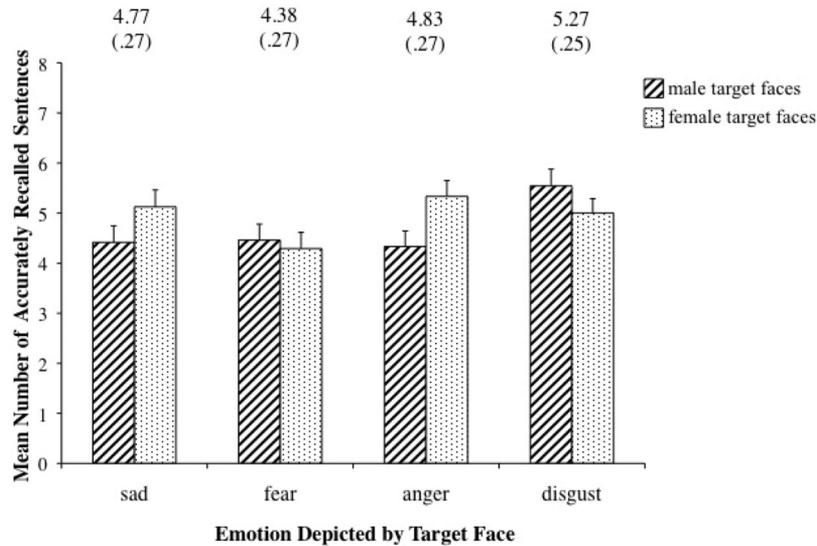


Figure 4. Mean recall accuracy for sentences, Experiment 1. Standard errors are presented in parentheses. The mean number of accurately recalled sentences previously paired with male targets was 4.69 ($SE = 0.24$); for female targets, it was 4.94 ($SE = 0.21$).

participants ($n = 29$; 14 men) rate the perceived masculinity or femininity of each target face (both the true and apparent “male” and “female” target faces) on a 5-point Likert-type scale (1 = *masculine*, 5 = *feminine*).

As in Experiment 1, sentences were counterbalanced across two task versions such that the sentences appearing with the “female” version of a morphed androgynous face in one version appeared with the “male” version of the face in other. The sentence set was the same as that used in Experiment 1 with minor changes. Some sentences were modified to reduce their extremity and to make the situations described more comparable in their intensity (see Table 2).

Results and Discussion

As we expected, an analysis of the subjective masculinity and femininity ratings indicated a face type (morphed vs. real face) by sex of target (male vs. female) interaction, $F(1, 28) = 87.82$, $p <$

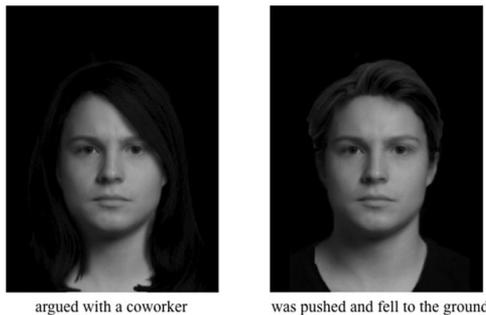


Figure 5. An example of morphed male and morphed female depictions of anger, Experiment 2.

.001, $\eta^2 = .76$, such that morphed male faces were rated as significantly more feminine than were true male faces, whereas there was no difference in the degree of femininity seen in the morphed versus true female faces (see Figure 6). We categorized the faces on the basis of their subjective degree of masculinity or femininity (any face with a rating of 3 or more was classified as feminine), and conducted a 2 (face type: morphed vs. real face) \times 2 (sex of target) \times 4 (emotion: sad, fear, anger, disgust) \times 2 (sex of participant) ANOVA, replicating the findings from Experiment 1. Both male and female perceivers showed a greater correspondence bias (i.e., made a greater number of dispositional attributions) for feminine ($M = 0.52$, $SE = 0.02$) relative to masculine ($M = 0.45$, $SE = 0.02$) faces, $F(1, 44) = 5.05$, $p < .03$, $\eta^2 = .10$.² Furthermore, a significant main effect for emotion, $F(3, 132) = 4.02$, $p < .01$, $\eta^2 = .08$, indicated that participants, in general, made the greatest number of dispositional attributions for sadness expressions and the fewest for disgust expressions (see Figure 7). These effects held when we controlled for whether or not participants recalled the sentences that were paired with the target faces. And, as in Experiment 1, participants showed better recognition for feminine versus masculine target faces, indicating that they did not perceive the feminine faces as more emotionally intense.

General Discussion

These two studies demonstrate that the stereotype of the overly emotional female is linked to the belief that women express emotion because they are emotional creatures, but men express emotion be-

² Means rather than frequencies of dispositional attributions were used because the number of masculine- and feminine-looking faces was not equal when subjectively defined.

Table 2
Sentences Paired With Face Stimuli by Emotion Condition (Experiment 2)

Sad	Fear	Anger	Disgust
Was disappointed by a lover	Was threatened by an attacker	Was cut off by another driver	Got sprayed by a skunk
Buried a family pet	Was trapped in a burning building	Was pushed and fell to the ground	Took a large gulp of sour milk
Attended the funeral of a grandparent	Heard footsteps in the dark	Got yelled at by the boss	Saw a bloody movie scene
Was separated from a best friend	Witnessed an armed robbery	Was elbowed in an elevator	Cleaned up smelly garbage
Remembered the death of a friend	Was chased by an angry dog	Did not get promoted at work	Saw a dead animal on the road
Watched a friend cry inconsolably	Lost control of the car at high speed	Got cheated by a neighbor	Was pooped on by a bird
Got some bad news	Became stranded outside in a lightning storm	Was insulted by a stranger	Stepped into a puddle of vomit
Lost a family heirloom	Found a rattlesnake in the house	Argued with a coworker	Was served rotten eggs for breakfast

cause the situation warrants it. Both male and female participants consistently showed more of a correspondence bias (i.e., made dispositional attributions) for female compared with male emotional faces (Experiment 1) and for feminine versus masculine looking emotional faces (Experiment 2), even when perceivers were given situational information to explain the emotional behavior on every trial. This increase in the correspondence bias likely anchors the persistent stereotype that women are more emotional when compared with men. Regardless of whether women are objectively more emotionally expressive, people attribute their emotional behaviors to a more emotional nature, whereas this happens less for expressions made by men.

Our findings allowed us to rule out four possible explanations for the observed effects (discussed in Gilbert & Malone, 1995). First, it is unlikely that the increase in correspondence bias for female emotional faces resulted from a failure to properly process the situation in which female (relative to male) emoters function

(i.e., it did not result from lack of awareness). Participants were no worse at remembering the situational information paired with female when compared with male faces (Experiment 1), and controlling for such memory differences did not change the pattern of results (Experiment 2). Second, it is unlikely that female emoters violated an expectation that they would be less affected by an emotionally evocative situation when compared with men, leading perceivers to attribute their resulting behavior to an emotional disposition (i.e., the findings were not due to unrealistic expectations). Studies have shown that sex-based stereotypes are grounded in the opposite belief (i.e., that women will be more emotionally reactive). Third, it could be that people were perceiving emotional behavior as more intense in women than in men (inflated categorizations of behavior; e.g., Hess et al., 2004), but if this were so, then participants would have made greater recognition errors for female (Experiment 1) or feminine (Experiment 2) target faces (by choosing the more intense version of the face during the recogni-

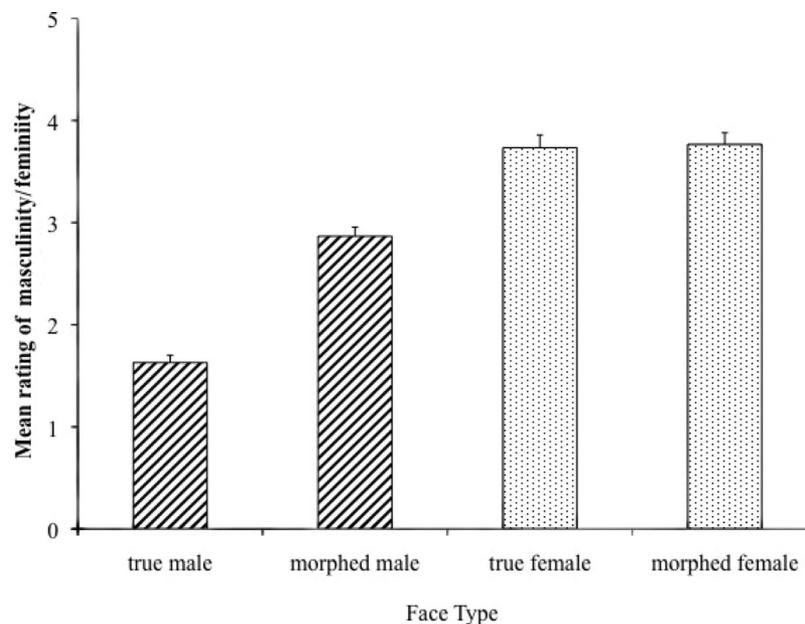


Figure 6. Mean ratings of masculinity and femininity for each face type. Error bars represent standard errors.

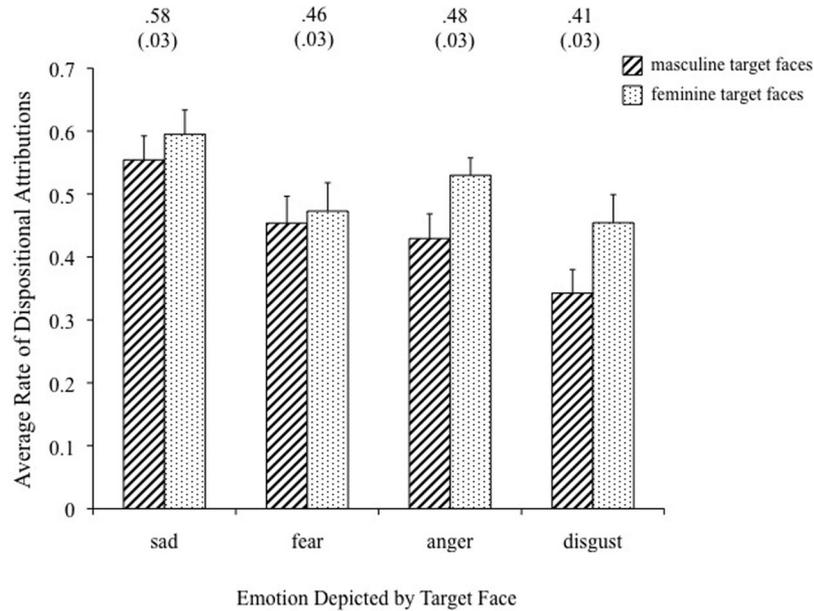


Figure 7. Average rates of dispositional attribution, Experiment 2. Standard errors are presented in parentheses. The average number of dispositional attributions for masculine targets was 0.452 ($SE = 0.01$); for female targets, it was 0.515 ($SE = 0.02$).

tion task), but this is not what we observed. A fourth possibility discussed by Gilbert and Malone (1995) is that people might spontaneously and effortlessly draw trait inferences from the emotional behaviors of both men and women, but they might be either more willing or more able to correct their dispositional attributions with situational information for male targets. We think that this explanation is unlikely given that more recent evidence suggests that dispositional and situational attributions can proceed in parallel, and the spontaneous trait interference paradigm that we used has been shown to assess spontaneous, as opposed to deliberative, attributional judgments.

There are two possible explanations for the increased correspondence bias when judging the emotional behavior of women. First, our findings provide at least preliminary evidence for the perceptual overgeneralization hypothesis that people with feminine-looking faces are seen as causing and responsible for their emotional expressions. Such overgeneralizations might result from the way that the brain predicts the meaning of incoming sensory input early in perception (for a review on how the brain predicts, see Bar, 2007). Second, on the basis of work by Krull (1993), it is possible that people approach male and female targets with different epistemic goals. When perceivers see a woman acting in an emotional fashion, their goal is to explain something about her person (leading to an initial dispositional attribution), but when they see a man acting in a similar way, their goal may be to better understand the situation (leading to a situational attribution). Future research will be required to probe these hypotheses more directly.

References

- Ansfield, M. E. (2007). Smiling when distressed: When a smile is a frown turned upside down. *Personality and Social Psychology Bulletin*, 33, 763–775.
- Bar, M. (2007). The proactive brain: Using analogies and associations to generate predictions. *Trends in Cognitive Sciences*, 11, 280–289.
- Baron-Cohen, S. (2003). *The essential difference: The truth about the male and female brain*. New York: Basic Books.
- Barrett, L. F., Robin, L., Pietromonaco, P. R., & Eysell, K. M. (1998). Are women the “more emotional” sex? Evidence from emotional experiences in social context. *Cognition and Emotion*, 12, 555–578.
- Becker, D. V., Kenrick, D. T., Neuberg, S. L., Blackwell, K. C., & Smith, D. (2007). The confounded nature of angry men and happy women. *Journal of Personality and Social Psychology*, 92, 179–190.
- Bradley, M. M., Codispoti, M., Cuthbert, B. N., & Lang, P. J. (2001). Emotion and motivation: I. Defensive and appetitive reactions in picture processing. *Emotion*, 1, 276–298.
- Brescoll, V. L., & Uhlmann, E. L. (2008). Can an angry woman get ahead? Status conferral, gender, and expression of emotion in the workplace. *Psychological Science*, 19, 268–275.
- Brizendine, L. (2006). *The female brain*. New York: Morgan Road Books.
- Broderbund, Inc. (2003). *Cosmopolitan virtual makeover* [Computer software]. Novato, CA: Author.
- Brody, L. R., & Hall, J. A. (1993). Gender and emotion. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions* (pp. 447–460). New York: Guilford Press.
- Canli, T., Zhao, Z., Brewer, J., Gabrieli, J. D. E., & Cahill, L. (2000). Event-related activation in the human amygdala associates with later memory for individual emotional response. *Journal of Neuroscience*, 20, RC99.
- Condry, J., & Condry, S. (1976). Sex differences: A study of the eye of the beholder. *Child Development*, 47, 812–819.
- Dimberg, U., & Karlsson, B. (1997). Facial reactions to different emotionally relevant stimuli. *Scandinavian Journal of Psychology*, 38, 297–303.
- Dimberg, U., & Lundqvist, O. (1988). Facial reactions to facial expressions: Sex differences. *Psychophysiology*, 25, 442–443.
- Else-Quest, N. M., Hyde, J. S., Goldsmith, H. H., & Van Hulle, C. A. (2006). Gender differences in temperament: A meta-analysis. *Psychological Bulletin*, 132, 33–72.

- Enlow, D. H. (1982). *Handbook of facial growth*. Philadelphia, PA: Saunders.
- Fischer, A. H., & Manstead, A. S. R. (2000). The relation between gender and emotion in different cultures. In A. H. Fischer (Ed.), *Gender and emotion: Social psychological perspectives* (pp. 71–94). New York: Cambridge University Press.
- Forgas, J. P., O'Connor, K. V., & Morris, S. L. (1983). Smile and punishment: The effects of facial expression on responsibility attribution by groups and individuals. *Personality and Social Psychology Bulletin*, 9, 587–596.
- Friedman, H., & Zebrowitz, L. A. (1992). The contribution of typical sex differences in facial maturity to sex role stereotypes. *Personality and Social Psychology Bulletin*, 18, 430–438.
- Gilbert, D. T. (1998). Ordinary personology. In S. T. Fiske & G. Lindzey (Eds.), *The Handbook of social psychology* (pp. 89–150). New York: McGraw-Hill.
- Gilbert, D. T., & Malone, P. S. (1995). The correspondence bias. *Psychological Bulletin*, 117, 21–38.
- Gray, J. (1992). *Men are from Mars, women are from Venus: A practical guide for improving communication and getting what you want in your relationships*. New York: HarperCollins.
- Greenwald, M. K., Cook, E. W., & Lang, P. J. (1989). Affective judgment and psychophysiological response: Dimensional covariation in the evaluation of pictorial stimuli. *Journal of Psychophysiology*, 3, 51–64.
- Grossman, M., & Wood, W. (1993). Sex differences in intensity of emotional experience: A social role interpretation. *Journal of Personality and Social Psychology*, 65, 1010–1022.
- Haviland, J. M. (1977). Sex-related pragmatics in infants' nonverbal communication. *Journal of Communication*, 27, 81–90.
- Hess, U., Adams, R. B., & Kleck, R. E. (2004). Facial appearance, gender, and emotion expression. *Emotion*, 4, 378–388.
- Hess, U., Blairy, S., & Kleck, R. E. (2000). The influence of facial emotion displays, gender, and ethnicity on judgments of dominance and affiliation. *Journal of Nonverbal Behavior*, 24, 265–283.
- Kelly, M. M., Forsyth, J. P., & Karekla, M. (2005). Sex differences in response to a panicogenic challenge procedure: An experimental evaluation of panic vulnerability in a non-clinical sample. *Behaviour Research and Therapy*, 44, 1421–1430.
- Kleinke, C. L., & Kane, J. C. (1997). Assigned responsibility to clients for causing and solving their problems. *Journal of Mental Health Counseling*, 19, 156–164.
- Kring, A. M., & Gordon, A. H. (1998). Sex differences in emotion: Expression, experience, and physiology. *Journal of Personality and Social Psychology*, 74, 686–703.
- Krull, D. S. (1993). Does the grist change the mill? The effect of the perceiver's inferential goal on the process of social inference. *Personality and Social Psychology Bulletin*, 19, 340–348.
- LaFrance, M., & Banaji, M. (1992). Toward a reconsideration of the gender–emotion relationship. In M. S. Clark (Ed.), *Emotion and social behavior* (pp. 178–201). Thousand Oaks, CA: Sage.
- LaFrance, M., Hecht, M. A., & Paluck, E. L. (2003). The contingent smile: A meta-analysis of sex differences in smiling. *Psychological Bulletin*, 129, 305–334.
- Lang, P. J., Greenwald, M. K., Bradley, M. M., & Hamm, A. O. (1993). Looking at pictures: Affective, facial, visceral, and behavioral reactions. *Psychophysiology*, 3, 261–273.
- Lundqvist, L. (1995). Facial EMG reactions to facial expressions: A case of facial emotional contagion? *Scandinavian Journal of Psychology*, 36, 130–141.
- Lundqvist, L., & Dimberg, U. (1995). Facial expressions are contagious. *Journal of Psychophysiology*, 9, 203–211.
- Lutz, C. A. (1990). Engendered emotion: Gender, power and the rhetoric of emotional control in American discourse. In C. Lutz & L. Abu-Lughod (Eds.), *Language and the politics of emotion: Studies in emotion and social interaction* (pp. 69–91). Cambridge, England: Cambridge University Press.
- Matsumoto, D., & Ekman, P. (1988). *Japanese and Caucasian facial expressions of emotion (JACFEE)* [Slides]. San Francisco: Intercultural and Emotion Research Laboratory, Department of Psychology, San Francisco State University.
- Morrongiello, B. A., & Rennie, H. (1998). Why do boys engage in more risk taking than girls? The role of attributions, beliefs, and risk appraisals. *Journal of Pediatric Psychology*, 23, 33–43.
- Nagourney, A. (2006, February 5). Calling Senator Clinton “angry,” G.O.P. chairman attacks. *The New York Times*, p. A16.
- Pease, A., & Pease, B. (2001). *Why men don't listen and women can't read maps: How we're different and what to do about it*. New York: Broadway Books.
- Plant, E. A., Hyde, J. S., Keltner, D., & Devine, P. G. (2000). The gender stereotyping of emotions. *Psychology of Women Quarterly*, 24, 81–92.
- Plant, E. A., Kling, K. C., & Smith, G. L. (2004). The influence of gender and social role on the interpretation of facial expressions. *Sex Roles*, 51, 187–196.
- Rhodes, G. (2006). The evolutionary psychology of facial beauty. *Annual Review of Psychology*, 57, 199–226.
- Robinson, M. D., & Clore, G. L. (2002). Belief and feeling: Evidence for an accessibility model of emotional self-report. *Psychological Bulletin*, 128, 934–960.
- Robinson, M. D., Johnson, J. T., & Shields, S. A. (1998). The gender heuristic and the database: Factors affecting the perception of gender-related differences in the experience and display of emotions. *Basic and Applied Social Psychology*, 20, 206–219.
- Schiffenbauer, A., & Babineau, A. (1976). Sex role stereotypes and the spontaneous attribution of emotion. *Journal of Research in Personality*, 10, 137–145.
- Schwartz, G. E., Brown, S., & Ahern, G. L. (1980). Facial muscle patterning and subjective experience during affective imagery: Sex differences. *Psychophysiology*, 17, 75–82.
- Seligman, M. E. P. (2002). *Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment*. New York: Free Press.
- Shields, S. A. (1987). Women, men, and the dilemma of emotion. In P. Shaver & C. Hendrick (Eds.), *Review of personality and social psychology* (Vol. 7, pp. 229–250). Thousand Oaks, CA: Sage.
- Shields, S. A. (2002). *Speaking from the heart: Gender and the social meaning of emotion*. Cambridge, England: Cambridge University Press.
- Shields, S. A., & Crowley, J. C. (1996). Appropriating questionnaires and ratings scales for a feminist psychology: A multi-method approach to gender and emotion. In S. Wilkison (Ed.), *Feminist social psychologies* (pp. 218–232). Buckingham, England: Open University Press.
- Sloan, D. M., Bradley, M. M., Dimoulas, E., & Lang, P. J. (2002). Looking at facial expressions: Dysphoria and facial EMG. *Biological Psychology*, 60, 79–90.
- Stemmler, G., Heldmann, M., Pauls, C. A., & Scherer, T. (2001). Constraints for emotion specificity in fear and anger: The context counts. *Psychophysiology*, 38, 275–291.
- Stoik Imagining. (2000). *MorphMan 4.0* [Computer software]. Moscow, Russia: Author.
- Tendayi, V. G., & Abrams, D. (2003). Infra-humanization: Ambivalent sexism and the attribution of primary and secondary emotions to women. *Journal of Experimental Social Psychology*, 39, 492–499.
- Todorov, A., Gobbini, M. I., Evans, K. K., & Haxby, J. V. (2007). Spontaneous retrieval of affective person knowledge in face perception. *Neuropsychologia*, 45, 163–173.
- Todorov, A., & Uleman, J. S. (2002). Spontaneous trait inferences are bound to actors' faces: Evidence from a false recognition paradigm. *Journal of Personality and Social Psychology*, 83, 1051–1065.

- Todorov, A., & Uleman, J. S. (2004). The person reference process in spontaneous trait inference. *Journal of Personality and Social Psychology*, 87, 482–493.
- Tottenham, N., Borscheid, A., Ellertsen, K., Marcus, D. J., & Nelson, C. A. (2002, April). *Categorization of facial expressions in children and adults: Establishing a larger stimulus set*. Poster presented at the Cognitive Neuroscience Society annual meeting, San Francisco.
- Vigil, J. M. (in press). A socio-relational framework for sex differences in the expression of emotion. *Behavioral and Brain Sciences*.
- Widen, S. C., & Russell, J. A. (2002). Gender and preschoolers' perception of emotion. *Merrill-Palmer Quarterly*, 48, 248–262.
- Zebrowitz, L. A., & Montepare, J. M. (2005, June 10). Appearance DOES matter. *Science*, 308, 1565–1566.

Received January 22, 2009

Revision received June 10, 2009

Accepted June 10, 2009 ■

Call for Nominations

The Publications and Communications (P&C) Board of the American Psychological Association has opened nominations for the editorships of **Experimental and Clinical Psychopharmacology**, **Journal of Abnormal Psychology**, **Journal of Comparative Psychology**, **Journal of Counseling Psychology**, **Journal of Experimental Psychology: Human Perception and Performance**, **Journal of Personality and Social Psychology: Attitudes and Social Cognition**, **PsycCRITIQUES**, and **Rehabilitation Psychology** for the years 2012–2017. Nancy K. Mello, PhD, David Watson, PhD, Gordon M. Burghardt, PhD, Brent S. Mallinckrodt, PhD, Glyn W. Humphreys, PhD, Charles M. Judd, PhD, Danny Wedding, PhD, and Timothy R. Elliott, PhD, respectively, are the incumbent editors.

Candidates should be members of APA and should be available to start receiving manuscripts in early 2011 to prepare for issues published in 2012. Please note that the P&C Board encourages participation by members of underrepresented groups in the publication process and would particularly welcome such nominees. Self-nominations are also encouraged.

Search chairs have been appointed as follows:

- **Experimental and Clinical Psychopharmacology**, William Howell, PhD
- **Journal of Abnormal Psychology**, Norman Abeles, PhD
- **Journal of Comparative Psychology**, John Disterhoft, PhD
- **Journal of Counseling Psychology**, Neil Schmitt, PhD
- **Journal of Experimental Psychology: Human Perception and Performance**, Leah Light, PhD
- **Journal of Personality and Social Psychology: Attitudes and Social Cognition**, Jennifer Crocker, PhD
- **PsycCRITIQUES**, Valerie Reyna, PhD
- **Rehabilitation Psychology**, Bob Frank, PhD

Candidates should be nominated by accessing APA's EditorQuest site on the Web. Using your Web browser, go to <http://editorquest.apa.org>. On the Home menu on the left, find "Guests." Next, click on the link "Submit a Nomination," enter your nominee's information, and click "Submit."

Prepared statements of one page or less in support of a nominee can also be submitted by e-mail to Emnet Tesfaye, P&C Board Search Liaison, at emnet@apa.org.

Deadline for accepting nominations is January 10, 2010, when reviews will begin.