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The Effects of Attributed Gender on Adult Emotion Perception

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Abstract

Adults' gender stereotypes of emotion have been investigated with a variety of methods, but those methods do not provide a strong test of the stereotype: The participants were presented only with cues to the gender or to the emotion; or when both cues were available, gender was confounded with poser. This study examined the effects of attributed gender on adults' perception of emotion in facial expressions and stories when presented with clear versus ambiguous cues to both emotion and gender. College students ($n = 90$) were first asked to label the emotion of either a man (Timothy) or a woman (Sophia) with identical prototypical and "mixed" facial expressions and, separately, to Free Label stories about emotions. The same students were then to choose from a list of ten emotion labels the one that best described the protagonist's emotion for the same stimuli. Results showed that, for ambiguous cues to emotion, participants labeled facial expressions according to gender stereotypes. However, for the stimuli with clear cues to both emotion and gender of the poser, a reverse effect of gender stereotypes was observed for anger, fear, shame, and compassion due to an expectancy violation.

The Effects of Attributed Gender on Adult Emotion Perception

Humans are cognitive misers; our brains constantly take shortcuts in order to expend as little cognitive energy as possible. One of the most common shortcuts in perception is stereotyping: making a set of generalizations about a group of people (Devito, 2004). While the word “stereotype” usually has negative connotations, stereotypes do serve a beneficial purpose. They help us to organize the many cues with which we are continually bombarded and reduce the amount of cognitive work we must perform. When we meet a person of a particular group, we see that person primarily as a group member and apply all the group’s characteristics to that person. Thus, stereotypes allow us to decide if a person is a member of a group and also help us in new situations by providing us with a schema of deciding how to interact with and what to expect from a member of that group. Still, stereotypes lead us to ignore a person’s unique characteristics and can lead to false attributions (Devito, 2004). Gender stereotypes are particularly widely used in our society and are applied to many aspects of life such as appearance, career, self-worth, and, the focus of this study, emotions.

A systematic gender stereotyping of attributed emotion emerges from previous research: Females are perceived as more likely than males to express emotion, specifically sadness, fear, shame, embarrassment, and sympathy, while males are associated primarily with anger and sometimes pride. When asked by researchers which gender experiences and expresses an emotion more frequently, people characterize some emotions as masculine and think of others as feminine. Overall, females are rated as expressing more emotion than males (Bauer, Stennes, & Haight, 2003), in particular, more sadness and fear than males; males are associated more with the expression of anger and pride (Fabes & Martin, 1991; Algoe, Buswell, & DeLamater, 2000; Hess, Senécal, Kirouac, Herrera, Phillipot, & Kleck, 2000; Plant, Hyde, Keltner, & Devine,

2000; Bauer et al., 2003). Males and females both expect females to react more often with sadness to a negative emotion-eliciting event than males, whereas males are expected to react more often with anger to the same negative emotion-eliciting event (Hess et al, 2000).

Additionally, females are rated higher for the experience and expression of sympathy and shame (Birnbaum, Nosanchuk, & Croll, 1980; Fabes & Martin, 1991; Plant et al., 2000). Fear is attributed to females in situations in which a male would express disgust (Algoe, et al., 2000). In the same study, fear and embarrassment were rated as “feminine” emotions, while anger and disgust were rated as “masculine.”

Another approach to measuring stereotypes of emotion is to ask participants to label facial expressions of emotion rather than simply rating their perceived frequency in males and females. In their historic study, Condry and Condry (1977) asked participants to rate one infant's responses to four different emotion-evoking stimuli. Half of participants were told they were observing a boy while the other half were told they were observing a girl, but in reality, they were all watching a video of the same infant. The infant's response to a jack-in-the-box produced particularly striking results for attributed gender. Participants were more likely to label the “boy” baby as angry and the “girl” baby as afraid. The baby's actual emotional response, though, was never evaluated by Condry and Condry. Because this gender effect was present only in the jack-in-the-box condition which could have produced a number of emotions, and not in clearer conditions like the teddy bear, buzzer, and doll, (conditions that would be likely to produce clearer displays of emotion) an effect of attributed gender on emotion perception may be present only when the emotion displayed is ambiguous. That is to say, perhaps subjects only applied gender stereotypes by labeling the “boy” as angry and the “girl” as afraid when the emotions he/she expressed were truly undeterminable or mixed.

Such a conclusion was bolstered by results in another study in which adult subjects were asked to interpret photographs of adults' ambiguous anger/sadness facial expressions (Plant et al., 2000). In keeping with Condry and Condry's (1977) findings regarding anger, that males are more likely than females to be labeled as angry, Plant et al. (2000) found that when participants were presented with photographs of males and females posing ambiguous expressions of anger and sadness (i.e., "emotion blends"), participants rated the males as more angry than the females and the females as more sad than the males.

In research, clear, unmixed cues to emotion have been presented using separate sets of male and female posers. When a male displays a "pure" anger expression, he is rated as angrier than a woman posing the same expression (Algoe et al., 2000). Thayer and Johnsen (2000) found that when participants viewed photographs of "pure" posed prototypical facial expressions (happy, sad, angry, fear, disgust, and surprise), performance was almost equal for male faces and female face. Male participants, however, when presented with angry female faces, failed to label them accurately at a level significantly different from chance. For angry male faces, on the other hand, they labeled accurately 50% of the time, which was 10.3% higher than their average labeling ability in the study. Additionally, in Plant et al.'s (2000) work with clear cues to emotion, participants rated the angry male face as more angry than the female anger face. The angry female face was rated as more sad than the male angry face.

In summary, with clear cues to gender and ambiguous cues to emotion (i.e. with emotion blends), adults attribute more sadness and fear to females and more anger to males (Condry & Condry, 1977; Algoe et al., 2000; Plant et al., 2000). With clear cues to emotion and gender, similar stereotypes are present. Males' angry faces are rated as more angry, while females' angry faces are rated as more sad or as another emotion. These findings indicate that gender

stereotypes of emotion affect labeling tasks. Because people view anger as a more masculine emotion, they are more likely to attribute anger to a male face, whether or not the face presents a full angry expression. Sadness and fear, stereotyped as more feminine emotions, are more likely to be attributed to the female angry face.

Prior research, however, on gender stereotypes of emotion suffers due to a variety of method problems. In some research, the facial expression was never objectively evaluated, preventing us from knowing which face was producing a more accurate response. For example, Condry and Condry (1977) did not determine the facial expression of the baby viewing a jack-in-the-box. So while it is clear that anger is attributed to males more than females, it is not clear whether or not the emotion is being accurately labeled. If we do not know the actual emotion displayed, we cannot know whether males or females are being more accurately identified. Thus, clear emotional displays have been employed in the present study. Many other studies have used “pure”, unambiguous emotions though, by way of male and female sets of prototypical emotion faces as part of their task stimuli, coded and identified with Ekman and Friesen’s (1978) Facial Action Coding System (FACS) (Algoe et al., 2000; Dimitrovsky, Spector, & Levy-Shiff, 2000; Hess, Blairy, & Kleck, 2000; Plant et al., 2000; Thayer & Johnsen, 2000). These studies, which used two separate sets of faces (male and female), however, allow for the possibility that the differences are not in the eye of the beholder, but rather were intrinsic to the stimuli themselves. Studies have shown evidence for differences in the actual expressions of males and females (Schwartz, Brown, & Ahern, 1980; Vrana & Rollock, 2002). In addition, female faces are, overall, more accurately labeled (Dimitrovsky et al., 2000), especially those of disgust (Pell, 2002), fear, and sadness (Wallbott, 1988). Such results suggest that studies using different faces for males and females may not show an effect of gender stereotypes, but, rather, an effect of the

pictures themselves. That is, if men and women pose prototypical emotions differently, one can assume that they might be labeled differently, not because of gender stereotypes, but because of actual differences in the faces. Finally, Thayer and Johnsen have found that men are poorer labelers than are women (2000). Thus, the gender of the viewer or study participant appears may also have an effect.

One prior study provided clear cues to both gender and emotion, and eliminated the confound of gender of poser. Widen and Russell (2002) used computer software to create children's faces that appeared to vary in gender of the expresser but actually showed an identical face. The androgynous faces were fitted with male or female hairstyles. Children (4 to 5 years) Free Labeled the emotion in either the "girl" or the "boy" faces and, separately, in stories describing the same child in corresponding emotional events. Effects of both protagonist gender and participant gender were found. In both faces and stories, boys labeled the "boy" faces as *disgusted* significantly more often than they labeled the "girl" faces as *disgusted* whereas girls labeled "girl" faces as *scared* more often than they labeled "boy" faces as *scared*. This study demonstrated the power of gender stereotypes of emotion: They persisted even when clear cues to both gender and emotion were provided.

Widen and Russell's (2002) study is the only one that rules out the possibility of differences in emotions posed by males and females. Yet, that study produced results applying only to preschoolers. Because preschoolers' emotion concepts are incomplete and still developing (Widen & Russell, 2003), it is possible that gender stereotypes play a stronger role in their emotion attributions. Thus, it is not possible to generalize those results to adults. A parallel study is necessary to learn whether or not their results, that males label boys as *disgusted* more than they label girls as *disgusted*, and females label girls as *scared* more than they label boys as

scared, are due to children's still-developing emotion concepts that will disappear with age as emotion understanding becomes more complete, or if it is a gender stereotype of emotion that persists into adulthood.

The current study is similar to that of Widen and Russell (2002). To overcome the problem of physical differences between male and female facial expressions, computer generated photographs of ten emotional facial expressions (happiness, sadness, anger, fear, disgust, surprise, shame, embarrassment, compassion, and contempt) were created without hair. Then, a male hairstyle and a female hairstyle were applied to each facial expression to produce two identical sets of facial expressions. Additionally, 2 sets of 10 stories describing the same characters in corresponding emotional events were created using previous research and pilot testing. Apart from names (Timothy, Sophia) and pronouns, the two story sets were identical. Two ambiguous expressions, also computer generated, were fitted with each hairstyle and were added to each set of photographs. One of these expressions had the upper portion of an anger face and the lower portion of a sadness face. The other had the upper portion of a sadness face and the lower portion of an anger face. By using both clear and unclear stimuli, a comparison can be made in the results produced by each face type. Participants were asked to "Free Label, using one word if possible," the 12 expressions of either Timothy or Sophia. As a second task, participants were asked to Free Label how either Timothy or Sophia felt in each story. After the Free Labeling tasks for both faces and stories, participants were presented with the faces and, separately, the stories of the same protagonist and were asked to choose from a list of emotions the words that best described the protagonist's facial expression or emotion in the story (Forced Choice task).

If participants in our study based their labels of emotion pictures and stories on their gender stereotypes, previous research suggests that they would be more likely to label Sophia as sad, afraid, embarrassed, ashamed, and sympathetic and more likely to label Timothy as angry. We predict that, for the ambiguous mixed expressions, Sophia will be labeled as sad more than Timothy, and that Timothy will be labeled as angry more than Sophia, replicating prior gender stereotype findings with ambiguous stimuli. The question is whether these effects will persist with clear cues to both gender and emotion.

Method

Participants

Participants were 90 psychology students at Boston College (45 males and 45 females) between the ages of 18 and 23. The males' mean age was 19.6 ($SD = 1.03$; range: 18 to 23 years); the females' mean age was 19.2 ($SD = 0.99$; range: 18 to 21 years). The sample was ethnically diverse and representative of the ethnic composition of Boston College¹: 70.00% of participants were Caucasian, 12.22% Asian, 7.78% African American, 4.44% Hispanic, and 5.55% of mixed ethnicity. All participants were proficient in English and participated in the study as part of a class requirement.

Materials

Photographs of Facial Expressions. 10 photographs of prototypical facial expressions were computer generated: happiness, sadness, anger, fear, surprise, disgust, shame, embarrassment, compassion, and contempt. Finally, two additional "mixed" facial expressions were created by horizontally bisecting the anger and the sadness facial expressions at the cheekbones using Adobe Photoshop (Adobe Systems, Inc., 1996). The upper half of the anger

face was then combined with the lower half of the sadness face using Adobe Photoshop (Adobe Systems, Inc., 1996) to create the “angry/sad” face. The upper half of the sadness face was combined with the lower half of the anger face to create the “sad/angry” face.

For each of the 12 facial expressions (10 clear emotions and 2 mixed emotions), Adobe Photoshop (Adobe Systems, Inc., 1996) was used to create identical faces which were differentiated as male or female by hairstyle. The male and female hair, which were of the same color, were extracted from *Cosmopolitan Virtual Makeover 3: Deluxe Suite* (Broderbund, Inc., 2003) and added to each facial expression. The end product was two sets of identical facial expressions, one appearing to be male, and the other appearing to be female. The face with the “male” hair was called Timothy, and the face with the “female” hair was called Sophia. The resulting 24 faces were printed as 4” x 6” black and white photographs. The happy expressions for Timothy and Sophia are shown in Figure 1.

Stories of Emotional Events. 10 stories describing stereotypical emotion-eliciting events and responses were created (Table 1) based on prior research in our lab and piloting with an adult sample. The stories were created to apply to the participant pool. The stories for the two characters (Timothy and Sophia) were identical except for names and pronouns.

Procedure

Informed consent was attained from all participants (See Appendix A). Participants were tested in a quiet classroom and were randomly assigned to either the Timothy condition or the Sophia condition with the proviso of an equal number of male and female participants in each condition. Participants were handed a packet and were told to read the first page of instructions (See Appendix A), to answer all questions with one word whenever possible, and to proceed through the packet without flipping back and forth. Order of mode (Faces First or Story First)

was counterbalanced and stimuli within each mode (emotion photographs and stories) were randomized. If the participant was in the Face First condition, they opened their packet and read, “In this section, please label the emotion expressed in each computer generated picture of a man/woman named Timothy/Sophia. Use a single emotion word where possible.” Each face was presented on a separate sheet of plain white paper and was followed at the bottom of the page with, “How does Timothy/Sophia feel in this picture?” The 12 facial expressions for Free Labeling were followed by the 10 stories: “In this section, please read these brief stories about things that happened to Timothy/Sophia. After reading each story, please write, in the space provided, an emotion word for how you think Timothy/Sophia feels. Please use one word when possible.” Each page contained one emotion story (Table 1). Following each story, participants were asked, “In this story, how does Timothy/Sophia feel?”

When Free Labeling of the faces and stories was complete, each participant was handed a second packet for the Forced Choice task. Protagonist and order of presentation mode matched that of the Free Labeling task for each participant. Format was also similar except that participants were told, “In this section, please select and circle the emotion term from the list that best describes the emotion displayed by Timothy/Sophia in each picture,” and for the stories, “In this section, please read each story carefully. Then select and circle the emotion term that best describes how Timothy/Sophia feels.” For faces and stories in the Forced Choice task, participants were provided with a list of the ten emotion words (happiness, sadness, anger, fear, disgust, surprise, shame, embarrassment, compassion, contempt) in alphabetical order. Additionally, the word “scorn” was added to the list as an alternative to contempt². Examples of each type of stimuli (Free Labeling Face, Free Labeling Story, Forced Choice Face, Forced Choice Story) for Timothy for sadness is included in Appendix B.

If participants were in the Story First condition, the order of presentation was reversed for both the Free Labeling and Forced Choice tasks. When participants completed the Forced Choice task, they were debriefed (See Appendix A), given one course credit for their participation, and the session was complete.

Scoring

In the Free Labeling tasks for both faces and stories, participants were allowed to respond with any label they chose. Two raters judged into which of the 10 emotion categories (happiness, sadness, anger, fear, disgust, surprise, shame, embarrassment, compassion, contempt) each word provided by the participants fit. Any words on which the raters disagreed were judged by a third rater. If the word did not fit into any of the 10 categories, it was coded as a non-response. Based on the resulting scoring key, a list of acceptable words for each emotion category was formed (Table 2).

Results and Discussion

Ambiguous Stimuli

Two parallel repeated measures ANOVAs ($\alpha = .05$) were conducted to analyze the ambiguous stimuli in both the Free Labeling (FL) and Forced Choice (FC) tasks. Protagonist gender (Timothy, Sophia) and participant gender (male, female) were between-subjects factors. Face (2 levels: angry/sad, sad/angry) and emotion rating (2 levels: angry, sad) were the within subject factors. Anger and sadness were both considered as correct responses for both the angry/sad face and the sad/angry face. The dependant measure was whether the face was rated as angry or as sad or with a non-response.

In an analysis of the Free Labeling responses to the ambiguous stimuli, the main effect for face was significant, $F(1, 86) = 40.54, p < .001$. The angry/sad face was labeled as angry (.38) significantly more often than the sad/angry face was labeled as sad (.18, $p < .001$). A main effect for emotion rating was also significant, $F(1, 86) = 35.64, p < .001$. Therefore, the angry emotion rating (.38) was used more often than the sad emotion rating (.18, $p < .001$).

An additional finding that was significant in both the Free Labeling and Forced Choice analyses was the face x emotion interaction, FL: $F(1, 86) = 203.96, p < .001$; FC: $F(1, 86) = 104.61, p < .001$. This finding qualifies the main effects of both face and emotion rating, that participants labeled the angry/sad face as angry (FL: .76; FC: .51) more often than they labeled the sad/angry face as angry (FL: .00, $p < .001$; FC: .00, $p < .001$), and that they labeled the sad/angry face as sad (FL: .36, FC: .38) more often than they labeled the angry/sad face as sad (FL: .01, $p < .001$; FC: .00, $p < .001$).

Of greater interest was the protagonist gender x emotion effect (Figure 2) that was found in the Free Labeling analysis, $F(1, 86) = 35.64, p = .009$. For the sad/angry face, participants labeled Sophia as sad (.24) significantly more often than they labeled Timothy as sad (.12, $p = .02$). In addition, for the angry/sad face, participants labeled Timothy as angry (.41) more often than they labeled Sophia as angry (.36, ns). That is, participants attributed more sadness to Sophia than to Timothy in the sad/angry face and more anger to Timothy than to Sophia in the angry/sad face, although they were identical faces. In the Forced Choice analysis, results were in the same direction for both sad/angry and angry/sad faces, but results were not significant. Still, these replicate previous findings that gender stereotypes of emotion extend to labeling tasks for stimuli with ambiguous cues to emotion.

Stimuli with Clear Cues to Gender and Emotion

Two parallel repeated measures ANOVAs ($\alpha = .05$) were conducted to analyze the clear stimuli in both the Free Labeling and Forced Choice tasks. Protagonist gender (Timothy, Sophia), participant gender (male, female), and order of presentation (Face First, Story First) were between-subjects factors. Emotion (10 levels) and mode of presentation (face, story) were within-subject factors. The dependant measure was whether the response was correct or not, scored 1 or 0, respectively.

In both the Free Labeling and Forced Choice analyses, a main effect for mode was significant, FL: $F(1, 82) = 170.74, p < .001$; FC: $F(1, 82) = 187.14, p < .001$. This mode effect showed that performance was better overall for stories (FC: .72; FL: .89) than it was for faces (FC: .51, $p < .001$; FL: .68, $p < .001$). The main effect for emotion was also significant in both analyses, FL: $F(9, 738) = 111.82, p < .001$; FC: $F(9, 738) = 21.53, p < .001$ (Table 3). The overall performance on happiness faces and stories was significantly higher than the performance on any other emotion ($p < .001$). Performance on more common emotions (happiness, sadness, anger, fear) was at a high level and was significantly higher ($p = .007$) than performance on less common emotions (disgust, surprise, shame, embarrassment). Performance on compassion was low, and performance on contempt was at floor level.

The mode x emotion interaction was significant in Free Labeling and Forced Choice analyses, FL: $F(9, 738) = 49.16, p < .001$; FC: $F(9, 738) = 24.08, p < .001$ (Table 3). In the Free Labeling task, there was a significant ($p = .05$) advantage of stories over faces replicated for sadness, anger, fear, disgust, shame, embarrassment, and compassion. Performance for happiness was at ceiling level for both modes and for contempt, performance was at floor for both modes. For surprise³, perhaps due to the nature of the emotion, a reversal of the mode x

emotion interaction is evident: performance was higher ($p < .001$) in the story mode than it was in the face mode. For the Forced Choice task, the advantage of stories over faces was replicated for sadness, anger, fear, disgust, shame, embarrassment, and compassion ($p = .005$).

Performance was at ceiling level for both happiness and surprise and a reversal was evident for contempt ($p < .001$). For contempt, many participants chose disgust (.29) from the list of emotion terms. The similarity between contempt and moral disgust accounted for this disparity in the mode \times emotion effect in the Forced Choice task.

In the Free Labeling analysis only, the mode \times order of presentation interaction was significant, $F(1, 82) = 4.96, p = .03$. When the stories were presented first, participants' performance on faces was higher (.54) than when faces were presented first (.48, $p = .03$). This result can be attributed to a priming effect. Stories provided a stronger cue to emotion than faces. Thus, when participants labeled stories first, their emotion concepts were better activated and more available when they next labeled the faces than when they labeled faces first.

In the Free Labeling analysis, an effect of emotion \times participant gender \times protagonist gender \times order of presentation, $F(9, 738) = 3.19, p < .001$ was significant and produced very complex results. A two case Least Significant Difference (LSD) comparison indicated that five of the six significant differences involved shame. In the Face First condition, male participants performed at a higher level for the Timothy shame face (.54) than for the Sophia shame face (.27, $p = .03$), while female participants in the Face First condition performed at a higher level for the Sophia shame face (.63) than for the Timothy shame face (.27, $p = .005$). In the Stories First condition, female participants performed at a higher level for the Timothy shame face (.68) than for the Sophia shame face (.23, $p = .001$). In addition, in the Stories First condition the female participants performed at a significantly higher level for the Timothy shame face (.68) than they

did for the same face in the Face First condition (.27, $p = .002$). Because stories have a labeling advantage over faces, this difference would not be out of the ordinary except that, in the Faces First condition, female participants performed at a higher level for the Sophia shame face (.63) than for the Timothy shame face (.23, $p = .002$). These five significant interactions show the power of shame, because it is a stereotypically feminine emotion with pride is its masculine opposite (Plant et al., 2000), to illicit gender effects in labeling performance. In addition to the significant differences of shame in the emotion x participant gender x protagonist gender x order of presentation effect, male participants performed significantly better for the Timothy compassion face in the Story First condition (.55) than in the Face First condition (.25, $p = .02$). This result is most likely to due the advantage stories have over faces in illiciting emotion labels.

The emotion x participant gender interaction was also significant in the Forced Choice analysis only, $F(9, 738) = 2.52, p = .008$. Females' labeling performance for anger (.69) and disgust (.86) was significantly better than males' labeling performance for anger (.56, $p = .03$) and disgust (.69, $p = .008$). This result supports evidence that females are more accurate labelers of emotion than men are (Thayer & Johnsen, 2000), and that females use emotion terms with more frequency than men do (Bauer, Stennes, & Haight, 2003).

The emotion x protagonist gender interaction was significant in the Forced Choice analysis, $F(9, 738) = 2.25, p = .02$. For anger, performance was significantly higher for Sophia (.69) than it was for Timothy (.56, $p = .03$). For shame, performance was significantly higher for Timothy (.80) than it was for Sophia (.66, $p = .02$). This finding is particularly interesting because it represents a reversal of the expected stereotypes of emotion: anger is considered a "masculine" emotion (Fabes & Martin, 1991; Bauer et al., 2003; Plant et al., 2000, Hess et al., 2000, Algoe et al., 2000), and, although studied less extensively, shame has been considered a

“feminine” emotion (Fabes & Martin, 1991; Plant et al., 2000). Men are typically stereotyped as being more prideful (Plant et al., 2000), the opposite of shame. Therefore, the expected outcome of our study would be that Timothy should be more accurately labeled as angry and that Sophia would be more accurately labeled as ashamed. However, the reverse was true.

Still, the most interesting interaction, which was significant in both Free Labeling and Forced Choice analyses, is the mode of presentation x emotion x protagonist gender interaction (Figure 3), FL: $F(9, 738) = 2.14, p = .02$; FC: $F(9, 738) = 2.52, p = .007$. It showed further reversal of gender stereotypes of emotion. In both Free Labeling and Forced Choice, for the anger face, performance was higher for Sophia (FL: .76; FC: .58) than for Timothy (FL: .49, $p = .003$; FC: .27, $p < .001$). In the Free Labeling analysis, for the compassion story, performance was higher for Timothy (.64) than for Sophia (.42, $p = .01$). In the Forced Choice analysis, for the fear face, performance was higher for Timothy (.82) than for Sophia (.64, $p = .04$). These results are similar in that they all show a reversal of what is expected according to gender stereotypes of emotion. In research of gender stereotyping of emotions, anger is attributed to males, fear is attributed to females, and compassion or sympathy is attributed to females. In this labeling task, though, females were more accurately labeled as angry; and men were more accurately labeled as afraid and compassionate.

Conclusion

Results produced by stimuli with ambiguous versus clear cues to the poser’s emotion were markedly different. For ambiguous (mixed) emotion stimuli, gender stereotypes of emotion were evident in labeling: males were more frequently labeled as angry; females were more

frequently labeled as sad. But, when cues to emotion were clear, a reversal of gender stereotypes emerged. It is possible that, for clear cues to emotion, an expectancy violation is occurring.

Burgoon (1993) describes an expectancy as an “enduring pattern of anticipated behavior” (p. 31) that can stem from societal norms. A stereotype of emotion, for example, that males experience anger more often than females, can be considered an expectancy. A person *expects* men to display the anger face. When behavior does not match the expectancy, a violation occurs, resulting in arousal and distraction. Burgoon (1993) goes on to explain that some possible results of expectancy violations are “attentional reallocation” and “heightening attention to characteristics of the communicator” (p. 31). Following the previous example, since anger is associated with males and not females, if a female makes a clear angry face, an expectancy violation occurs and heightened attention is paid to an angry-faced woman.

In addition, when an individual’s characteristics violate stereotypes, a person’s evaluation of that individual becomes more extreme in the direction of the expectancy violation (Jussim, Coleman, & Lerch, 1987; Jackson, Sullivan, & Hodge, 1993; Kernahan, Bartholow, & Bettencourt, 2000). Therefore, when a participant views a female anger face, not only is his expectancy violated and attention heightened, but he also see the woman as more angry. For this reason, perhaps he is more likely to label her as angry.

Bettencourt, Dill, Greathouse, Charlton, & Mulholland (1997) showed that female and male job applicants were evaluated more positively when they violated gender stereotypes for careers. That is, women who were applying for a position as a sports editor were rated more favorably than the same women applying for a position as a fashion editor. The opposite was true for men. Taynor and Deaux (1973) showed that women received greater rewards for

helping in a civic emergency than men did. This effect was due to the expectancy violation that occurred when a woman performed a masculine task.

It follows then, that if expectancy violations theory holds true for gender stereotypes of employment and heroics, it may also cause the reverse stereotype effect in the results of this study. The female anger face, the male fear face, the male shame face, and the male compassion story may have been so contrary to what is expected, based on gender stereotypes of emotion, that an expectancy violation caused participants to perceive these stimuli as more highly valenced, and to pay closer attention to them. In turn, the expectancy violation caused them to label these stimuli more accurately.

As for the mixed emotions which were composed of the top part of the anger expression and the bottom part of the sadness expression (angry/sad face) or the top part of the sadness expression and the bottom part of the anger expression (sad/angry face), gender stereotypes of emotion were not reversed. Males were rated as angrier than females in the angry/sad face, and females were rated as sadder than males in the sad/angry face. This finding supports prior research with ambiguous cues to emotion (Condry & Condry, 1977; Plant et al, 2000). The angry/sad and sad/angry faces were subject to interpretation by means of stereotypes. Further research with different ambiguous facial expressions is necessary to determine “how angry” a female face must be or “how sad” a male face must be to initiate an expectancy violation and also to determine which emotion blends are subject to gender stereotypes in labeling tasks.

In conclusion, when ambiguous emotions are presented without confounds from poser gender, gender stereotypes of emotion extend to a labeling task for anger (masculine) and sadness (feminine). For stimuli with clear cues to emotion and gender, an expectancy violation occurs for some emotions (anger, fear, shame, compassion) which causes them to be more

accurately labeled when posed by the gender to which the emotion is less often attributed by stereotypes.

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Footnotes

¹ Boston College's incoming Fall 2002 enrollment was 8.9% Asian American, 5.1% African American, and 6.2% Hispanic students with an overall AHANA population totaling 20.6% (AHANA Facts And FAQ's, 2003).

² In pilot testing, several subjects indicated that they were unfamiliar with the meaning of the word contempt, and therefore, failed to choose it in the Forced Choice task. In order to alleviate this confound, "scorn" was included in the Forced Choice list as a synonym for contempt.

³ Surprise is a particularly difficult emotion for which to create a story due to its momentary and fleeting nature of expression. In our lab's research with young children, most surprise stories have failed to produce any significant correct response. Therefore, the lack of correct answers prompted by the surprise story can perhaps be attributed to the qualities of the emotion rather than the story itself.

Table 1

Emotion Stories Used in the Current Study

Emotion	Story
Happiness	One day, it was Timothy's birthday. All his friends came to his birthday party and gave him presents. They all ate birthday cake together. He jumped up and down and clapped his hands.
Sadness	One week later, Timothy's mother called to tell him that his grandmother had died. Tears came to Timothy's eyes. He walked slowly over to a chair and sat down. He didn't want to talk to anyone.
Anger	One week later, Timothy was waiting in line at the dining hall. Then, a man cut in line in front of him. Timothy clenched his fists, then shoved him out of line and yelled at him.
Fear	One week later, Timothy was walking down a dark street. He was all alone. Then Timothy heard footsteps behind him. Timothy screamed. He ran away as fast as he could. Timothy looked back to see if the person was following him.
Disgust	One week later, Timothy drank some milk. It tasted awful. It had gone bad. Timothy spit it out as fast as he could and threw the milk away. He did not want to touch it or even look at it.
Surprise	One week later, Timothy came home and his roommate's hair was blue. This had never happened before. Timothy just stared and tried to figure out why the roommate's hair was blue.

Shame	One week later, Timothy broke a lamp in his apartment, but told his roommates that his girlfriend did it. But his roommates knew that Timothy had done it and made him admit the truth. Tears came to Timothy's eyes and he wanted to apologize.
Embarrassment	One week later, the professor called Timothy up to the front of the classroom. Timothy was supposed to give a presentation. But on his way up to the front, Timothy tripped and fell. He wasn't hurt, but all the other students laughed at him. Timothy's face turned very red, and he looked away from everyone. He wished that he could hide.
Compassion	One week later, Timothy and his friend were on an icy sidewalk. Timothy's friend fell down and hurt herself very badly. His friend was crying. Timothy felt like crying, too, and tried to help his friend. He tried to make her feel better.
Contempt	One week later, Timothy saw a boy cheat off his friend's test. Then the boy said he didn't cheat at all. Timothy didn't want to be near the boy. He wouldn't sit next to him, and he wouldn't talk to him. Timothy left the room whenever he came in.

Note. Stories were exactly the same for Sophia except that name and gender of pronouns was changed.

Table 2

Emotion Labels Rated as Correct for Each Emotion Category

Emotion Category	Acceptable Terms		
Happiness	Amused	Amusement	Appreciated
	Content	Delighted	Ecstatic
	Elated	Elation	Excited
	Giddy	Glad	Gleeful
	Great	Happy	
	Happy like “ha, I got you now”		Humored
	Humorous	Jovial	Joy
	Joyous	Overjoyed	Pleased
	Satisfied	Very happy	
Sadness	Abandoned	Anguished	Completely sad
	Dejected	Depressed	Despair
	Devastated	Disappointed	Discontent
	Displeased	Distraught	Forlorn
	Grief	Grief-stricken	Heartbroken
	Hopeless	Hurt	Like he wants to cry
	Lonely	Loss	Melancholy
	Mournful	Mourning	Regretful
	Remorse	Remorseful	Sad

	Somber	Somewhat let down	Sorrow
	Sorrowful	Very sad	Worried
	Worry		
Anger	Angered	Angry	Animosity
	Annoyed	Bitter	Enfuriated
	Enraged	Frustrated	Furious
	Hostile	Irritated	Mad
	Militant	Offended	Outraged
	Pissed	Pissed off	
Fear	Afraid	Alarmed	Anxious
	Apprehensive	Frightened	Intimidated
	Nervous	Panic	Petrified
	Scared	Terrified	
Disgust	Disgusted	Grossed out	
	Like he drank bad milk—ew		Nauseated
	Nauseous	Repelled	Repulsed
	Revolted	Sick	
Surprise	Amazed	Astonished	Awe-Struck
	Disbelief	Disbelieving	
	Doesn't believe something		Shocked
	Stunned	Taken aback	
Shame	Ashamed	Guilt	Guilty
	Shamed	Shameful	Unworthy

Embarrassment	Bashful	Sheepish	Shy
	Uncomfortable		

Compassion	Bad for his friend	Concerned	Empathetic
	Empathy	He feels sorry for his friend	
	Sorry for her	Sorry for someone	Sympathetic

Contempt	Disapproving	Hate	Hateful
	Resentful	Scorn	Smug
	Spiteful		

Table 3

Effect of Mode of Presentation for Each Emotion in the Free Labeling Task and Forced Choice Task

Emotion	Face Mode	Story Mode	Mean
Free Labeling			
happiness	.94 _a	.99 _a	.97
sadness	.79 _b	.89 _c	.84
anger	.62 _d	.97 _{ac}	.79
fear	.76 _b	.99 _a	.87
disgust	.40 _e	.89 _c	.65
surprise	.91 _a	.32 _e	.61
shame	.31 _e	.61 _d	.46
embarrassment	.29 _e	.97 _{ac}	.63
compassion	.07 _f	.54 _d	.30
contempt	.03 _f	.03 _f	.03
Forced Choice			
happiness	.99 _A	.99 _A	.99
sadness	.81 _B	.99 _A	.90
anger	.42 _C	.82 _B	.62
fear	.73 _{BEF}	.99 _A	.86
disgust	.58 _D	.97 _A	.77
surprise	.94 _A	.92 _A	.93
shame	.66 _{ED}	.80 _B	.73
embarrassment	.47 _C	.93 _A	.70

compassion	.38 _C	.94 _A	.66
contempt	.80 _{BF}	.58 _D	.69

Note. Maximum possible is 1. Fisher's Least Significant Difference comparisons ($\alpha = .05$) were calculated. Means in the same row that do not share subscripts differ at $p < .05$.

Figure Captions

Figure 1. Timothy and Sophia happy expressions. The faces are identical; only hairstyle differs.

Figure 2. Responses to mixed emotion stimuli. In the mixed emotions analysis, *angry* was the target label for the angry/sad face and *sad* was the target label for the sad/angry face.

Figure 3. Reversal of gender stereotypes. In the mode x emotion x protagonist gender analyses an expectancy violation effect occurs for anger, compassion, and fear.

Figure 1



Figure 2

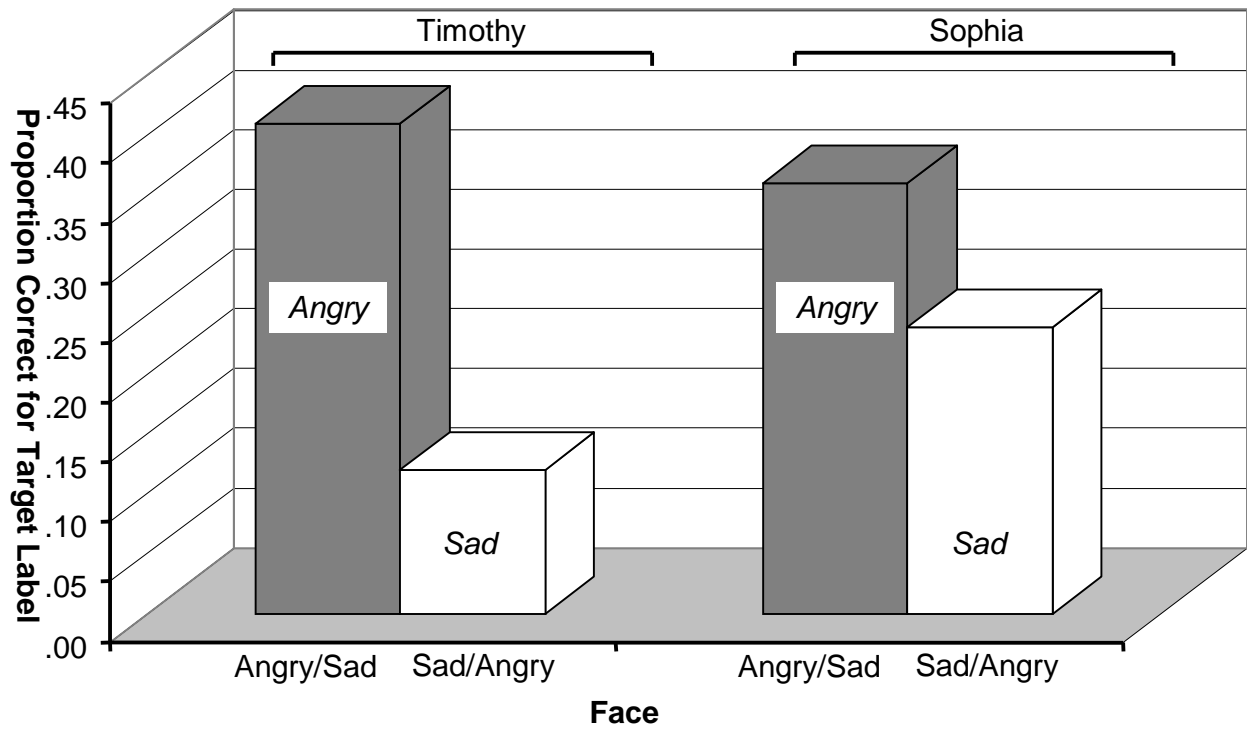
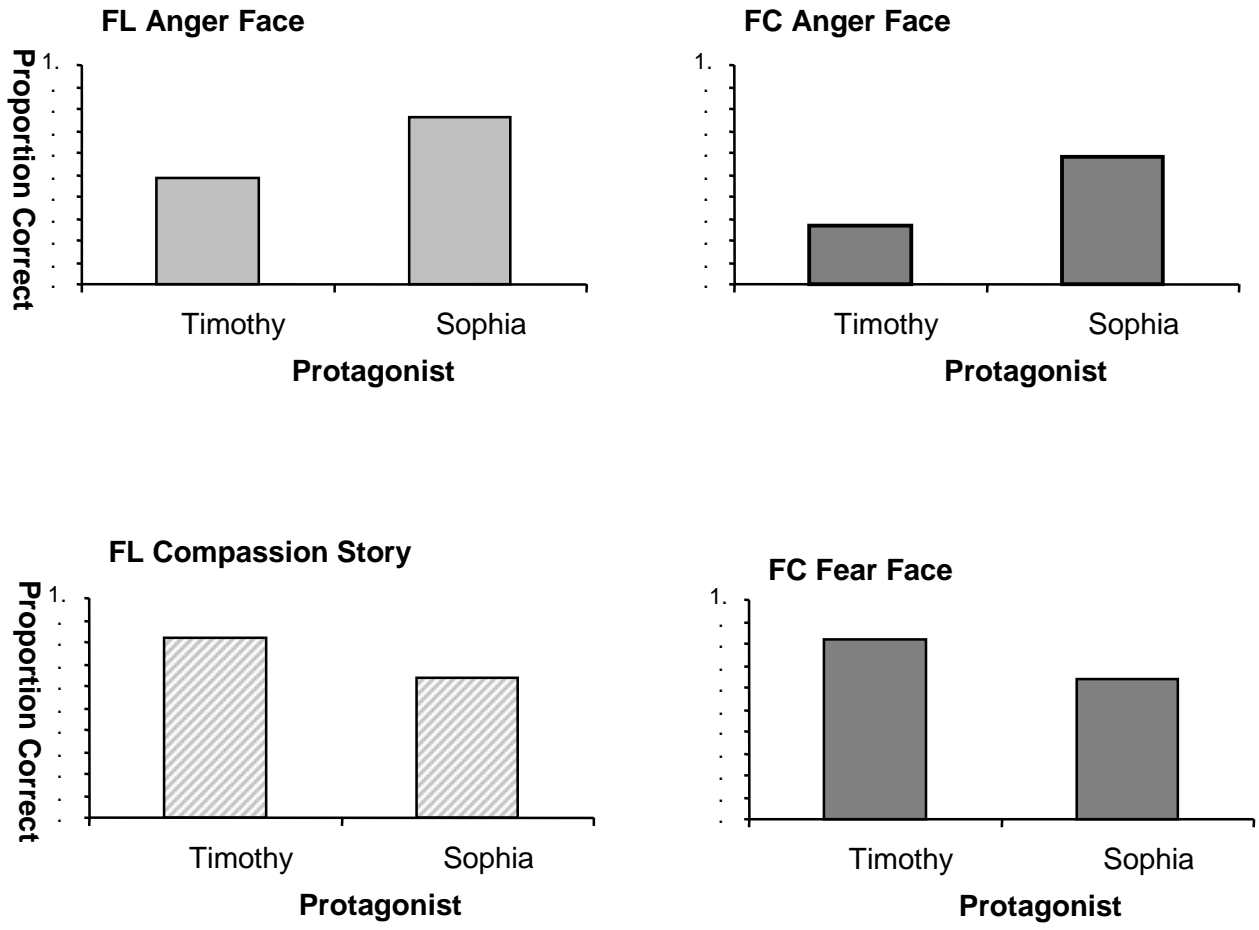


Figure 3



APPENDIX A

Gender Effect on Adult Emotion Perception

This is to state that I agree to participate in research conducted by Anita Christy and Dr. James Russell of the Department of Psychology of Boston College. I understand and agree to the following conditions:

- a. The research involves four parts: labeling facial expressions of emotion, labeling stories with the emotion they describe, choosing labels for the facial expressions from a list of emotion terms, and choosing labels for the stories from a list of emotion terms. (There are no foreseeable discomforts or risks involved in the experiment.)
- b. My participation in the project will take less than **one hour** (for which I will receive one credit point).
- c. I am free to withdraw my consent and to discontinue participation at any time without giving any notice and without negative consequences.
- d. All the responses that I provide in this study are completely anonymous and confidential. At no time will my name be associated with the responses I provide.
- e. The investigator will inform me of any significant new information arising from the experiment or other ongoing experiments that bear on my choice to remain in the study.
- f. The investigator will provide a review of the nature and results of the study if I request such information.
- g. The data will be averaged across many people who participate in this study and may be published in a scientific journal.

I have carefully read and understand this agreement and, therefore, freely consent to participate in this study.

Participant's name: _____
 Participant's signature: _____
 Date: _____

Any questions or concerns may be directed to Dr. J. Russell (617 552-4546) or Anita Christy (617 656-0675).

Thank you very much for participating in our study.

In this study, you will be asked to answer questions about different facial expressions and about short stories. Please work through the packet one page at a time, without checking back. Answer each of the questions carefully and clearly.

Please provide the following information.

First Name: _____

Age: _____

Gender: M F

The following information is requested on a voluntary basis: it will help us to accurately report the composition of the sample.

Race: Please circle one.

1. African American, not of Hispanic origin.
2. American Indian
3. Asian or Pacific Islander
4. Caucasian, not of Hispanic origin
5. Hispanic
6. Other, please specify _____

Debriefing for Study of
Gender Effect on Adult Emotion Perception

Thank you very much for participating in our study.

In this study we were interested in people's understanding of facial expressions of emotion. We plan to compare these results to the results of a gender effect found in young children's labeling of facial expressions and stories (Widen & Russell, 2002).

Previous studies have revealed that adults are more likely to attribute certain emotions to males (i.e. anger) than to females (Condry & Condry, 1976). However, effects have been rather limited (Plant, Hyde, Keltner, & Devine, 2000). In addition, a full range of emotions has not been tested, and experimenters have tended to use somewhat ambiguous faces. This study is attempting to determine just where the differences in male and female perception lie, and how strong the gender effect truly is. In addition, we use stories to account for the possible effect in mode of presentation.

Research on gender and adults' understanding of facial expressions has a long history. If you are interested in learning more about it, you could read:

Condry, J., & Condry, S. (1976). Gender differences: A study of the eye of the beholder. *Child Development, 47*, 812-819.

Plant, E. A., Hyde, J. S., Keltner, D., & Devine, P. G. (2000). The gender stereotyping of emotions. *Psychology of Women Quarterly, 24*, 81-92.

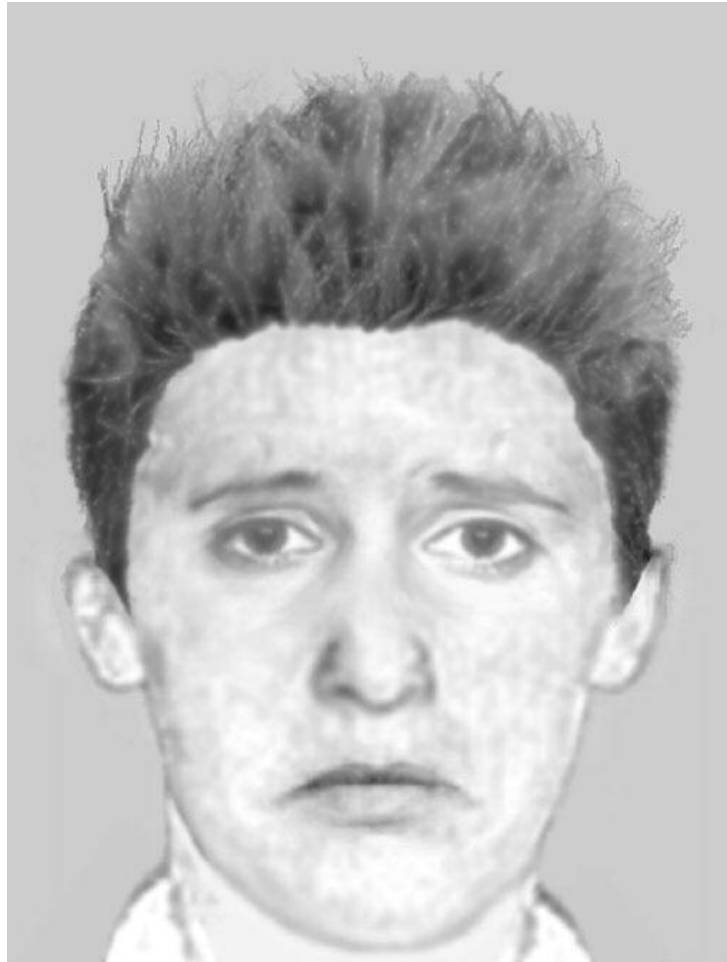
If research with children displays a gender effect, we must examine adults to determine whether the children exhibit labeling differences similar to those that children use. This comparison may reveal the cause of children's labeling deficiencies. Also, the differences among adults are important in their own right as emotion perception differences due to gender have never been examined with the type of pictures and stories used in this study.

If you are interested in learning more about children's understanding of facial expressions, you could read:

Widen, S. C. & Russell, J. A. (2002). Gender and Preschoolers' Perception of Emotion. *Merril-Palmer Quarterly, 48*, 248-262.

If you have any questions or concerns, please call Dr. Russell (617 552-8433) or Anita Christy at (617 656-0675). Thank you very much for participating in our study.

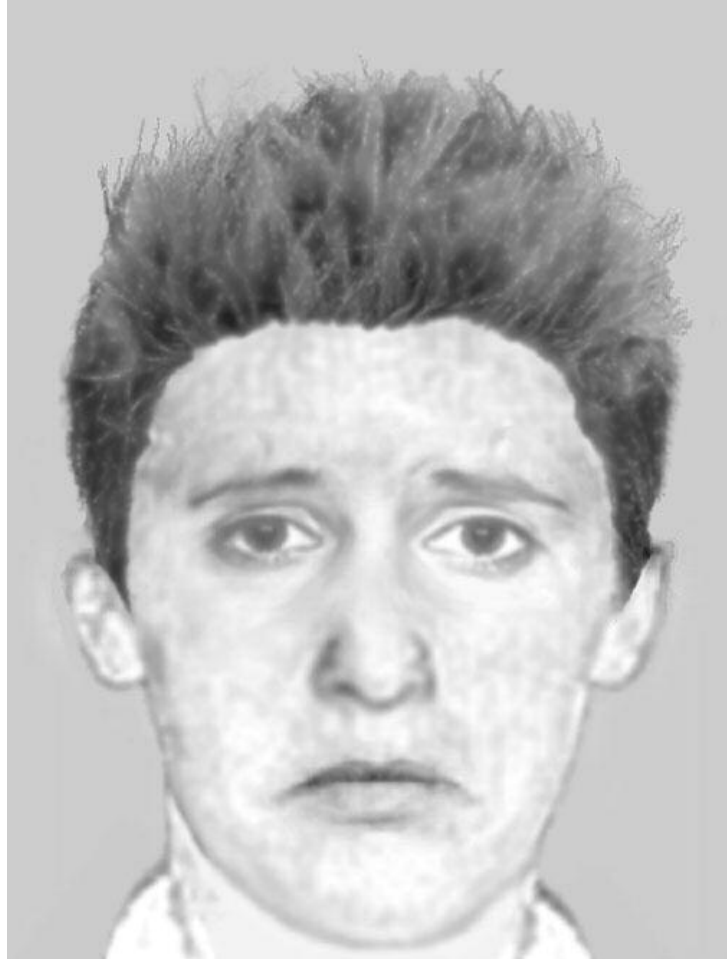
APPENDIX B



How does Timothy feel in this picture? _____

One week later, Timothy's mother called to tell him that his grandmother had died. Tears came to Timothy's eyes. He walked slowly over to a chair and sat down. He didn't want to talk to anyone.

In this story, how does Timothy feel? _____



How does Timothy feel in this picture? (circle one)

- a) Angry
- b) Ashamed
- c) Compassionate
- d) Contemptuous
- e) Disgusted
- f) Embarrassed
- g) Happy
- h) Sad
- i) Scared
- j) Scornful
- k) Surprised

One week later, Timothy's mother called to tell him that his grandmother had died. Tears came to Timothy's eyes. He walked slowly over to a chair and sat down. He didn't want to talk to anyone.

In this story, how does Timothy feel? (circle one)

- a) Angry
- b) Ashamed
- c) Compassionate
- d) Contemptuous
- e) Disgusted
- f) Embarrassed
- g) Happy
- h) Sad
- i) Scared
- j) Scornful
- k) Surprised