SEX DIFFERENCES IN THE EXPERIENCE OF ANGER AND ANGER-RELATED EMOTIONS.

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Abstract

This study looks at the influence of social factors on the elicitation of emotion. Specifically, the study focuses on variations of anger experience as a result of different gender-dyad interactions. Participants imagined themselves in a hypothetical scenario: They were engaged in a social interaction in which each participant worked with another participant on a challenging task. In the hypothetical scenario, the imagined other participant displayed behavior intended to instigate anger in the participant. Female participants were found to experience higher rates of anger and frustration, while holding confederates more responsible for task performance than male participants. Additionally, females used more cause words and third person pronouns than males. These results help to understand the effects of gender on experience of anger and anger-related emotions. In addition, this study looked into the influence of social factors on emotions and other appraisal processes such as self- and other-accountability. Major findings revealed that female participants reported higher levels of anger and frustration than male participants, perhaps due to higher affiliative orientation.

I. Introduction

Most cognitive researchers agree that there is a relationship between emotions and social behavior (Smith & Pope, 1992). Theodore D. Kemper has stated that "emotions are responses to environmental events, and arguably the most important aspect of the environment in modern society is social" (Kemper, 1991). However, regarding emotional psychology research, much attention has been focused on the studies of the structure, antecedents, and components of emotions. Little attention has been given to the implications of social interactions on experienced emotions (Kuppens, VanMechelen, & Meulders, 2004; Roseman, 1984).

It has been hypothesized that one possible cause of gender differences in expression of emotions is the appraisal of the expected social implications of one's emotional behavior as a man or a woman for those involved, also known as social appraisal (Evers & Fischer, 2005). It is apparent that social appraisal and resulting emotions are inherently dependent on the specific interpersonal interaction or social context. Thus far, research in this area has been limited to socially isolated scenarios.

Research on the influence of gender on expression and experience of emotion has shown that men tend to anticipate positive reactions from expression of anger while women anticipate negative reactions (Feldman-Barrett, 2000). Another study by Catherine Evers, et. al. showed that women experience anger at equal rates to men, but express anger significantly less when they believe they will be socially interacting with the individual in the future (Evers & Fischer, 2005). Further, some social scientists have proposed a gender-in-context theory, which states that aspects of social situations interact with gender to enhance observable sex-related differences. For example, male-female

dyads are more likely to cause higher differences in emotional reactions because of sex differences in affiliative orientation, and also as a result of motivational orientation in the context of reproductive motivation (Deaux & Major, 1987; Shields, 1991). Based on these findings, researchers hypothesized that men would most likely experience either higher rates of anger than females, or (less likely) equal rates of anger in response to an anger-instigating social situation.

Studies have shown that having power increases the tendency to approach and decreases the tendency to inhibit behavior, and vice versa (Anderson & Berdahl, 2002; Keltner, Gruenfeld, & Anderson, 2003). Based on this theory, researchers placed the participant in a hypothetical situation in which they have power over the confederate in order to increase overall emotional response from participants.

Another study by Laura Griner and Craig Smith looked at the role of affiliative orientation in appraisal of motivational relevance and resulting emotions. Results showed that higher affiliative orientation is related to high appraisal of the interpersonal aspects of the situation. The study required the participant to teach a simple task to a confederate who acted in a highly scripted anger-eliciting manner. The Griner & Smith study was used as a model for design in this study in order to look at gender differences in experience of anger and the correalation of affiliative orientation (Griner & Smith, 2000).

Looking at the implications of social dynamics on the particular emotion of anger has several benefits. The role of social appraisal in the experience of anger is greatly affected by social norms. Children as young as preschoolers have been found to hold stereotypic

beliefs about sex differences in emotional experience and expression (Birnbaum & Croll, 1984; Birnbaum, Nosanchuk, & Croll, 1980), and hold these stereotypes through adulthood (Grossman & Wood, 1993; Hochschild, 1984; Lutz, 1990, Shields, 1987; Feldman-Barrret, 1998). Historically, gender roles lead to an expectation for men to experience more anger than women, but studies have not consistently supported this stereotype (Harris, 1994; Kring & Gordon, 1998; Wagner, Buck, & Winterbotham, 1993). Inconsistent results in gender studies of anger are likely a result of varying social contexts, which evoke different social appraisals. The study of the social dynamics of anger with regard to gender is beneficial because of its social nature and also because of its implication in societal expectations.

The present study seeks to study the effects of various social implications – specifically the sex of the participant, sex of the confederate, and attractiveness of the confederate - on the experience of anger and anger-related emotions.

It was hypothesized that male participants would have higher ratings of anger than female participants. The rationale behind this hypothesis is that social roles encourage male expression of anger and female inhibition of anger (Grossman & Wood, 1993; Hochschild, 1984; Lutz, 1990, Shields, 1987; Feldman-Barrret, 1998).

It was also hypothesized that there would be higher sex differences in emotions in opposite sex dyads. The rationale behind this hypothesis is found in the gender-in-context theory (Deaux & Major, 1987; Shields, 1991).

II. Method

Participants

There were 74 participants (34 male, 40 female) drawn from two participant pools. Most were drawn from Vanderbilt's Sona System pool, which consists mostly of psychology undergraduate students. These participants were given academic credit for participation. Some participants were recruited from outside of this pool, and included various members of the Nashville community or Vanderbilt students. These participants were given a $5 compensation. .

Procedure

When the participant arrived, they were informed that they were taking part in a study of interpersonal behavior in social interactions. It was explained that the participant would read a brief hypothetical scenario and answer questions regarding feelings throughout the scenario. The participant was asked to imagine themselves in this situation as vividly as possible, and to imagine how they would feel if the situation were actually happening.

Participants were assigned one of four random conditions, and were asked to sign a consent form. The participant was asked to sit in front of a computer, where the questionnaire was set up on the screen. The questionnaire begins with simple instructions, and the vignette situation was one of the first screens to appear. In the situation, the participant was informed they would be working on a task to build a toy car model with another participant. The participant is always "randomly" chosen to have the position of more power – the "Commander" position – while the other participant was always assigned the position of "Builder." The other participant would randomly be assigned gender and attractiveness. The other participant would then begin to act in a

manner intended to instigate anger from the participant. Please see Appendices for the full scenario and questionnaire.

Immediately after this difficult encounter with a frustrating and anger-instigating confederate participant, the participant was asked to answer two free response questions about their emotions throughout the scenario. The first of these questions was of particular interest for the present study. The question states, "In your own words, please briefly describe how you are feeling right now, having just completed the model building task and why you are feeling this way." Responses to this question were subjected to the LIWC analysis (Please see Measures section for details about the LIWC analysis). The participant is then asked to proceed to rate several pages of emotion, appraisal, impression, sex role, and motivational orientation ratings.

The questionnaire took participants an average of about a half hour to complete. After they completed the questionnaire, participants were debriefed on purposes of the study.

Measures

After reading a hypothetical scenario, participants were asked to answer a short response question regarding their feelings during the scenario in addition to completing ratings on various emotional, attributional, and sex role measures.

Linguistic Inquiry and Word Count

The Linguistic Inquiry and Word Count (LIWC; Pennebaker, Chung, Ireland, Gaonzales, & Booth, 2007) analysis is performed by software that processes raw text into measures of linguistic processes, psychological processes, personal concerns, and spoken categories by searching and counting target words developed from an extensive

dictionary. Scores computed by the program represent the percentage of the total number of words produced by the participant that fell in that category. Some examples of these categories include first and third person pronouns, positive and negative emotions, health, time, and work related words. A LIWC analysis was run on the short response for use of first person and third person pronouns, cause words, and anger-related and negative words. This provided a measure for a somewhat open-ended, more "expressed" emotion rating. Participants answered free response questions after reading the vignette situation and before answering a battery of multiple choice questionnaires.

Emotions

We used emotion ratings developed by Smith and Lazarus (1993). Emotions were assessed in clusters of similar adjectives. For example, "Mad, Angry, Irate" was rated as one item. The items were rated on a 1 (not at all true) to 9 (extremely much true) Likert-type scale. Participants completed emotion measures during the battery of questionnaires after reading the vignette scenario and after filling out the free response section. In this report, anger, annoyance, frustration, disgust, shame, embarrassment, and guilt were of particular interest. However, only anger, frustration, and shame revealed significant sex differences (Griner & Smith, 2000).

Accountability Appraisal

A modified version of appraisal measures developed by Smith and Lazarus (1993) was borrowed from the Griner-Smith study (2000). Statements about motivational relevance, motivational congruence, self-accountability, other-accountability, problem-focused coping potential, emotion-focused potential, and future expectancy were rated on a Likert-type scale ranging from 1 (not at all) to 9 (extremely/as much as I've ever cared

about anything/completely responsible). Of particular relevance to the present report were self-accountability and other-accountability in regards to task and interpersonal performance. An example of an item rating self-accountability for task performance: "To what extent do you think that YOU are responsible for your team's performance?" This scale was also completed as a part of the post-vignette battery of questionnaires.

Affiliative Orientation

We used an affiliative orientation scale created by Griner and Smith (2000) which was derived from The Personality Research Form (Jackson, 1967) and a scale by Novaceck and Lazarus (1990). This scale was used to measure the participant's degree of commitment to interpersonal relations. Participants rated items on a Likert-type scale from 1 (not at all true) to 9 (extremely true). Examples of items include: "It is very important to me that I have close relationships with others," and "Sharing a sense of intimacy with someone is very important to me." This scale was a part of the questionnaires completed after reading the scenario.

Bem Sex Roles Inventory

The Bem Sex Roles Inventory (BSRI) was developed to measure masculine, feminine, and androgynous personality traits, and includes twenty items for each measure (sixty total) describing personality characteristics. Examples of some items include "Moody," "Forceful," "Loyal," and "Affectionate." Participants rated themselves on each personality trait on a Likert-type scale from 1 (not at all descriptive) to 7 (extremely descriptive) (Bem, 1974).

III. Results and Discussion

Results

An ANOVA looking at emotion and self/other-attribution ratings was run to test for statistical significance in results with all possible interactions for the 2 x 2 x 2 design: [Participant Sex] x [Confederate Sex] x [Confederate Attractiveness].. See Tables 1A, 1B, and 2 for results of both statistically significant findings and insignificant findings. All statistically reliable effects and interactions will be described and discussed below.

Emotion Ratings

Anger

Analysis revealed that there were statistically significant findings regarding self-reported anger when looking at participant sex, but none for confederate sex and confederate attractiveness.

Participant Sex

Male participants reported an average anger rating of 5.41, while female participants reported an average anger rating of 6.74. This difference was statistically significant, F (1, 66) = 6.94, p = .01. Female participants reported significantly higher anger ratings than men.

Annoyance

There were no significant results for self-reported annoyance.

Frustration

Analysis revealed that there were statistically significant findings regarding self-reported frustration when looking at participant sex and confederate attractiveness.

Participant Sex

Male participants reported an average frustration rating of 6.97, while female participants reported an average frustration rating of 7.76. This

difference was marginally statistically significant, F (1, 66) = 2.99, p > .08. Female participants reported significantly higher frustration ratings than men, which aligns with findings for anger.

Confederate Attractiveness

Participants reported an average frustration rating of 6.98 when dealing with attractive confederates and an average of 7.74 when dealing with unattractive confederates. This difference was marginally statistically significant, F (1, 66) = 2.99, p < 0.10. Unattractive confederates received higher frustration ratings than attractive confederates.

Disgust

There were no significant results for self-reported disgust.

Guilt

There were no significant results for self-reported guilt.

Shame

Analysis revealed that there were statistically significant findings regarding confederate sex and marginally significant findings for participant sex x confederate attractiveness.

Confederate Sex

Participants reported an average shame rating of 3.93 when dealing with male confederates, while reporting an average shame rating of 2.43 when dealing with female confederates. This difference was statistically significant, F (1, 66) = 8.23, p < 0.01. This shows that participants reported more shame when dealing with male confederates.

Participant Sex x Confederate Attractiveness

Male participants reported an average shame rating of 2.88 when dealing with attractive confederates, while reporting an average shame rating of 3.92 when dealing with unattractive confederates. Female participants reported an average shame rating of 3.43 when dealing with attractive confederates, while reporting an average shame rating of 2.50 when dealing with unattractive confederates. This difference was marginally significant, F (1, 66) = 3.50, $p < 0.07$. This shows that male participants reported higher shame ratings with unattractive confederates, while female participants reported higher shame ratings with attractive confederates. See Figure 1 for graphed results.

Embarrassment

Analysis revealed that there were statistically significant findings regarding self-reported embarrassment when looking at confederate sex and participant sex x confederate sex.

Confederate Sex

Participants reported an average embarrassment rating of 4.90 when dealing with male confederates and a rating of 3.55 when dealing with female confederates. This difference was statistically significant, F (1, 66) = 6.76, $p > 0.01$. Therefore, participants had higher embarrassment with males than females.

Participant Sex x Confederate Sex

Male participants reported an average embarrassment rating of 3.93 when dealing with female confederates, while reporting a rating of 4.31 when dealing with male confederates. Female participants reported an average embarrassment rating of 5.86 when dealing with female confederates, while reporting a rating of 2.78 when dealing with male confederates. This difference was statistically significant, F (1, 66) = 11.09, p > 0.00. Therefore, male participants were somewhat more embarrassed when dealing with female confederates, while female participants were much more embarrassed when dealing with male confederates.

See Figure 2 for graphed results.

Attribution Ratings

Confederate Responsibility for Task Performance

Regarding confederate responsibility for task performance, there were marginally significant effects of participant sex. There were significant interactions of confederate attractiveness by confederate sex and confederate attractiveness by participant sex. Other interactions of participant sex, confederate sex, and confederate attractiveness did not reveal statistically significant results. ANOVA analyses revealed the following statistically significant means of confederate responsibility for task performance ratings:

Participant Sex

Male participants had an average rating of 7.55, while female participants had an average rating of 8.05. This difference was marginally statistically significant, F (1, 66) = 2.94, p > 0.09). This shows that female

participants tend to hold the confederate more responsible for task performance than do male participants, which is in line with anger ratings.

Confederate Attractiveness x Confederate Sex

Attractive male confederates had an average rating of 7.72, while attractive female confederates had an average rating of 8.28. Unattractive male confederates had an average rating of 8.056, while unattractive females had an average rating of 7.15. This difference was statistically significant, $\underline{F}$ (1, 66) = 6.43, p > 0.01). Results show that attractive female confederates are being held more responsible than attractive male confederates. However, unattractive male confederates are being held more responsible than unattractive female confederates, and even more so. See Figure 3 for graphed results.

Confederate Attractiveness x Participant Sex

Male participants gave attractive confederates an average rating of 8.07, while female participants gave attractive confederates an average rating of 7.93. Meanwhile, male participants gave unattractive confederates an average rating of 7.04, while female participants gave unattractive confederates an average rating of 8.17. This difference was statistically significant, $\underline{F}$ (1, 66) = 4.80, p > 0.03). This shows that both male and female participants hold attractive confederates equally responsible. However, male participants hold unattractive confederates less responsible than female participants do. Female participants hold attractive and unattractive confederates equally responsible.

See Figure 4 for graphed results.

Confederate Responsibility for Interpersonal Performance

Significant results were found for the interaction of confederate attractiveness by confederate sex. ANOVA analyses revealed the following means of confederate responsibility for task how things went interpersonally:

Confederate Attractiveness x Confederate Sex

Attractive male confederates had an average rating of 7.58, while attractive female confederates had an average rating of 8.28. Unattractive male confederates had an average rating of 8.17, while unattractive female confederates had an average rating of 7.76. This difference was statistically significant, $\underline{F}$ (1, 66) = 4.72, p > 0.03. This shows that attractive female confederates and unattractive male confederates are being held more responsible for how things went interpersonally.

See Figure 5 for graphed results.

Self Responsibility for Task Performance

There were significant results for the interaction of confederate attractiveness by participant sex. Overall means for self responsibility are much higher than overall means for confederate responsibility. ANOVA analyses revealed the following means of self responsibility for task performance:

Confederate Attractiveness x Participant Sex

Attractive male confederates had an average rating of 2.46, while attractive female confederates had an average rating of 3.93. Unattractive male confederates had an average rating of 3.49, while unattractive female

confederates had an average rating of 2.50. This difference was statistically significant, F (1, 66) = 7.54, p < 0.01. This shows that female participants take more responsibility for task performance when interacting with unattractive confederates while male participants take more responsibility for task performance when interacting with attractive confederates.

See Figure 6 for graphed results.

Self Responsibility for Interpersonal Performance

There were significant results for the interaction of confederate attractiveness by participant sex. ANOVA analyses revealed the following means of self responsibility for how things went interpersonally:

Confederate Attractiveness x Participant Sex

Male participants gave attractive confederates an average rating of 2.24, while female participants gave attractive confederates an average rating of 3.19. Male participants gave unattractive confederates an average rating of 2.65, while female participants gave unattractive confederates an average rating of 2.06. This difference was statistically significant, F (1,66) = 4.41, p < 0.04). This shows that female participants hold themselves more accountable for how things went interpersonally when interacting with attractive confederates. However, male participants hold themselves more accountable for how things went interpersonally when interacting with unattractive confederates. These results align with

findings in self responsibility for task performance when looking at confederate attractiveness by participant sex.

See Figure 7 for graphed results.

LIWC Analysis

Words from the free response question about current feelings were analyzed through the Linguistic Inquiry and Word Count program to look for gender-related and attributional patterns of emotional experience. ANOVA results are listed below:

Use of First Person Pronoun

There were statistically significant results when looking at the interaction of confederate sex x confederate attractiveness, and marginally significant results when addressing the interaction of participant sex x confederate attractiveness.

Confederate Sex x Confederate Attractiveness

Participants used "I" at a mean of 9.72 when referring to attractive males, while they used "I" at a mean of 8.13 when referring to unattractive males. Participants used "I" at a mean of 8.40 when referring to attractive females, while they used "I" at a mean of 10.68 when referring to unattractive females. This difference was statistically significant, $\underline{F}$ (1,65) > 4.95, p = 0.30). Participants used "I" more when talking about Attractive Males than when talking about Unattractive Males, and especially when talking about Attractive Females more than Unattractive Females.

See Figure 8 for graphed results.

Participant Sex x Confederate Attractiveness

Male participants used "I" at a mean of 8.40 when referring to attractive confederates, while they used "I" at a mean of 10.39 when referring to unattractive confederates. Female participants used "I" at a mean of 9.73 when referring to attractive confederates, while they used "I" at a mean of 8.43 when referring to unattractive confederates. This difference was marginally significant, $\underline{F}$ (1,65) = 3.58, $p > 0.06$). This slightly supports that male participants use "I" more when the confederate is unattractive, whereas female participants use "I" more when the confederate is attractive.

See Figure 9 for graphed results.

Use of Third Person Pronoun

There were statistically significant results when looking at the effect of participant sex.

Participant Sex

Male participants used third person singular pronouns (he/she) at a rate of 2.59, while female participants used third person singular pronouns at a rate of 4.19. This difference was statistically significant, $\underline{F}$ (1,65) = 5.21, $p < 0.03$). Female participants used third person singular pronouns more than male participants did. This is consistent with findings of higher other-blame in female participants.

Expressed Negative Emotion

There were no significant results for expressed negative emotion.

Expressed Anger Words

There were no significant results for expressed anger words.

Use of Cause Words

There were statistically significant results when looking at the effect of participant sex and confederate sex x confederate attractiveness.

Participant Sex

Male participants used cause words at a rate of 3.27 while females used cause words at a rate of 4.30. This difference was statistically significant, $\underline{F}$ (1,65) = 3.92, p = 0.05). Female participants used more cause words than male participants. This finding is in line with results for other-blame for task performance, in which females blamed the confederate for task performance more than males. Because other-blame is an antecedent to anger, this supports the idea that women were actually more angry than men.

Confederate Sex x Confederate Attractiveness

Participants used cause words with attractive male confederates at a mean rate of 3.90, while participants used cause words with unattractive male confederates at a rate of 3.01. Participants used cause words with attractive female confederates at a mean rate of 3.32, while participants used cause words with unattractive female confederates at a mean rate of 4.92. This difference was statistically significant, $\underline{F}$ (1,65) = 5.78, p = 0.02). Participants used cause words more with attractive males than unattractive males, and especially more cause words with unattractive females than with attractive female confederates.

See Figure 10 for graphed results.

Achievement Related Words

There were no statistically significant results for use of achievement related words.

Correlations

Intercorrelations among key variables were studied. Looking at correlations between variables helps to explain sex differences found in this study. Strong correlations were especially found between Bem measures for Femininity x Affiliative Orientation and Androgeny x Affiliative Orientation. However, none of the dispositional variables are correlated with any of the appraisal/emotion variables elicited by the vignette. Statistically significant correlations are listed on Table 3.

Sex Differences in Dispositional Variables

T-tests were performed on sex differences in dispositional variables. Means and results of the t-tests show significant findings for the following:

i. Women are more Androgenous than Men.
ii. Women are more Feminine than Men.
iii. There is no significant difference in Masuclinity between Men and Women.
iv. Women have more Affiliative Orientation than Men.
v. Women have more Learning Orientation than Men.
vi. There is no significant difference in Performance Orientation between Men and Women.

See Table 4 for Mean and Standard Deviation of variables with regard to participant sex.

Discussion

Hypothesis 1

Male participants will report higher anger ratings than female participants.

Result: Hypothesis 1 was negated by opposite outcomes. Female participants reported higher anger ratings than male participants.

Hypothesis 2

The most significant differences in emotional experience will be for opposite-sex dyadic interactions.

Result: Hypothesis 2 was supported. Female and male participants experienced opposite effects when interacting in opposite-sex dyads.

Relevant Results

Please see Table 5 for a discussion of all statistically significant and marginally significant findings by variable.

Trend 1

Female participants became angrier and more frustrated, and held confederates more responsible for task performance than male participants. Female participants also used more cause words and third person pronouns than male participants. It is also worth noting that in the free response question about "how are you feeling," there was no significant difference in expressed anger words.

Though these findings were not the expected outcome, they support theories of affiliative orientation and social awareness. In a study by Lisa

Feldman-Barrett, female participants scored higher on a performance test of emotional awareness than did male participants (Feldman-Barrett, et. al. 1998). Additionally, Miller's relational theory holds that women value establishing and maintaining affiliative relationships, as a result of historical powerlessness of women in society. Thereby, socialization encourages women to define their self-worth in terms of relationships with others (Miller, 1984). It makes sense that females may have been more disturbed when social norms were broken by confederates in the scenario as a result of females' higher affiliative orientation and emotional awareness. Perhaps it is because of higher affiliative orientation and social/emotional awareness that females used more cause words and "he/she" third person pronouns as well.

Another interesting finding is that despite females reporting feeling angrier than males, they did not "express" anger any more than males did in the free response section. This may also be due to females' higher affiliative orientation and social and emotional sensitivity (Feldman-Barrett, et. al.; Miller, 1984). Women may have been more wary of breaking social norms which hold that women should express anger less than men (Shields, 1987).

Trend 2

Female participants held themselves more responsible for task and interpersonal performance, felt more shame, and used more first person

pronouns when dealing with attractive confederates. Male participants held themselves more responsible for task and interpersonal performance, felt more shame, and used more first person pronouns when dealing with unattractive confederates, while holding unattractive confederates less responsible for task performance than attractive confederates.

The cause of these results is yet to be understood, but the differences in female-male interactions support Shields' gender-in-context theory. This theory holds that features of social situations interact with gender to enhance observable sex-related differences (Shields, 1991; Deaux & Major, 1987). An additional study showed that both males and females reported more emotion in opposite-sex interactions (Allen & Haccoun, 1976). In this case, male-female differences in emotion and attribution are inversely correlated, and are enhanced by the social aspects of attractiveness and power.

Trend 3

Female participants felt much more embarrassed when dealing with male participants, while male participants only felt somewhat more embarrassed when dealing with female participants.

It is possible that female participants were more embarrassed as a result of a combination of the gender-in-context theory, Feldman-Barrett's emotional awareness theory, and the social appraisal theory (Manstead & Fischer, 2001; Smith & Lazarus, 1990; Roseman & Smith, 2001).

Researchers came to some conjectures and hypotheses about these findings. A possibility is that participants felt more embarrassed overall in male-female dyads because of the implications of the key motivationally relevant social factor: the underlying instinct to impress the opposite sex for reproductive and survival-related goals. Perhaps females felt more embarrassed than males because they have higher affiliative orientation and higher awareness of the social norms being threatened. It is possible that females appraised the situation as more motivationally relevant because they are more affiliatively oriented .

IV. Discussion

Overall findings regarding emotional and attributional factors point to a trend where females experience more reactions to the social situation at hand.

The likely explanation for this trend is that females are more affiliatively oriented than men, and have a higher relational motivation. This causes females to pay more attention to social norms when appraising the situation because it is more motivationally relevant. When the situation is more motivationally incongruent to females, and other-accountability is present, females will experience more anger than males.

The results for the Bem Sex Roles Inventory show that females are more feminine and androgenous than males, but there is no difference for males or females regarding masculinity.

These findings are surprising and of great interest in regards to the study of emotion theories. This could suggest that social norms and roles are changing with increased

opportunity equality and decreased gender discrimination. Social roles play a large part in the process of social appraisal, and have significant effects on gender differences in emotion (Feldman-Barrett, et.al., 1998).

The study's design was inherently limited as an online vignette. Participants were asked to read a vignette and imagine themselves in the situation, while attempting to experience the feelings they would feel if the situation were actually happening. Experienced emotions would be more accurate if participants could physically experience the scenario.

An additional limitation is that expressed emotion could not be fully captured. The free-response question allows for some freedom of expression, but is not comparable to verbalized emotions directed to a live confederate in a real situation.

Future Research

There are several opportunities for further exploration.

Power/Status Variable

It would be interesting to explore the effects of power manipulation on the expression of anger in different gender-dyad interactions. In this scenario, it would be best to remove the attractiveness variable for more clarity in results. Ideally, the participant would be randomly assigned to the position of "builder" or "commander."

Lab Experiment

The original intention of this experiment was to create a lab experiment in which participants would physically be interacting with a real trained confederate to build a toy car model. This might provoke stronger sex differences in emotional experience and expression than a vignette/questionnaire study.

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VI. Tables

Table 1A: Mean and Standard Deviation for Anger, Annoyance, Frustration, and Disgust

				Anger		Annoyance		Frustration		Disgust	
Sub Sex	**Confed Sex**	**Attractiveness**	**N**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
Male	**Male**	**Attractive**	10	5.20	2.57	7.10	2.23	7.00	2.11	4.80	1.69
		Unattractive	9	5.44	2.13	7.11	1.62	7.44	1.81	5.44	3.36
	Female	**Attractive**	9	5.11	3.06	6.89	2.76	5.67	3.12	4.22	3.15
		Unattractive	8	5.88	1.55	7.50	1.31	7.75	1.75	5.75	2.71
Female	**Male**	**Attractive**	11	6.18	2.14	7.36	1.96	7.91	1.22	4.82	2.27
		Unattractive	9	8.44	0.53	8.67	0.50	8.44	0.73	6.33	2.96
	Female	**Attractive**	9	6.22	2.33	7.11	2.57	7.33	2.29	4.89	2.89
		Unattractive	9	6.11	1.97	8.00	1.41	7.33	1.80	4.44	2.74

Table 1B: Mean and Standard Deviation for Guilt, Shame, and Embarrassment

				Guilt		Shame		Embarrassment	
SubSex	**ConfedSex**	**Attractiveness**	**N**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**
Male	**Male**	**Attractive**	10	2.60	2.07	3.10	2.42	3.20	2.10
		Unattractive	9	2.44	1.88	4.33	2.18	4.67	2.55
	Female	**Attractive**	9	2.78	2.05	2.67	2.65	4.00	2.78
		Unattractive	8	1.88	1.13	3.50	2.14	4.62	1.41
Female	**Male**	**Attractive**	11	3.82	2.40	4.64	2.91	6.27	1.85
		Unattractive	9	2.00	2.00	3.67	2.24	5.44	1.67
	Female	**Attractive**	9	1.78	1.30	2.22	1.86	3.11	2.52
		Unattractive	9	2.22	1.79	1.33	0.50	2.44	2.56

Table 2: **Mean and Standard Deviation for Responsibility of Performance Interactions**

					Confederate Responsibility		Self Responsibility	
				N	Mean	Std. Dev.	Mean	Std. Dev.
Task Performance	Male	Male	Attractive	10	7.80	1.03	2.70	1.57
			Unattractive	9	7.44	2.40	3.11	2.03
		Female	Attractive	9	8.33	0.71	2.22	1.56
			Unattractive	8	6.62	1.41	3.88	1.55
	Female	Male	Attractive	11	7.64	1.21	3.64	1.96
			Unattractive	9	8.67	0.50	2.11	1.97
		Female	Attractive	9	8.22	0.83	4.22	2.86
			Unattractive	9	7.67	0.87	2.89	1.45
Inerpersonal Performance	Male	Male	Attractive	11	7.45	0.82	3.27	1.62
			Unattractive	9	8.67	0.50	2.11	1.76
		Female	Attractive	9	8.33	0.87	3.11	2.32
			Unattractive	9	7.89	0.93	2.00	0.87
	Female	Male	Attractive	21	7.57	0.81	3.00	1.52
			Unattractive	18	8.17	1.65	2.39	1.72
		Female	Attractive	18	8.28	0.75	2.44	1.82
			Unattractive	17	7.76	0.97	2.29	1.21

Table 3: Correlations Among Key Variables*

	Aff	Bsrandrog	bsrfem	bsrmasc	Learn	perf	anger	annoyance	othresaf	Othrsdo	slfresaf	Slfresdo
aff	1.00	0.43**	0.50**	0.14	0.22	0.14	0.12	0.14	0.12	0.01	-0.16	-0.01
Brsandrog	0.43**	1.00	0.46**	0.31**	0.24*	-0.01	0.00	0.02	-0.10	-0.02	-0.12	-0.04
Brsfem	0.50**	0.46**	1.00	0.13	0.09	-0.16	0.04	0.08	0.06	0.14	-0.02	-0.12
Brsmasc	0.14	0.31**	0.13	1.00	0.29*	0.15	0.07	0.06	0.11	0.15	-0.04	0.03
Learn	0.22	0.24*	0.09	0.29*	1.00	-0.09	0.08	-0.01	-0.05	-0.18	0.05	0.23
Perf	0.14	-0.01	-0.16	0.15	-0.09	1.00	0.13	0.13	0.13	0.03	0.03	0.15
Anger	0.12	0.00	0.04	0.07	0.08	0.13	1.00	0.79**	0.32**	0.33**	-0.25*	-0.20
Annoyance	0.14	0.02	0.08	0.06	-0.01	0.13	0.79**	1.00	0.31**	0.23	-0.46**	-0.30*
Othresaff	0.12	-0.10	0.06	0.11	-0.05	0.13	0.32**	0.31**	1.00	0.77**	-0.55**	-0.39**
Othresdo	0.01	-0.02	0.14	0.15	-0.18	0.03	0.33**	0.23	0.77**	1.00	-0.36**	-0.49**
Slfresaff	-0.16	-0.12	-0.02	-0.04	0.05	0.03	-0.25	-0.46**	-0.55**	-0.36**	1.00	0.70**
Slfresdo	-0.01	-0.04	-0.12	0.03	0.23	0.15	-0.20	-0.30*	-0.39**	-0.49**	0.70**	1.00

*** Correlation is significant at the 0.01 level (2-tailed).
** Correlation is significant at the 0.05 level (2-tailed).
* N = 74.

Terms Key:

Aff	Affiliative orientation.
Anger	Self-reported anger in response to vignette.
annoyance	Self-reported annoyance in response to vignette.
Bsrandrog	Androgeny score based on the Bem Sex Role Inventory.
Bsrfem	Femininity score based on the Bem Sex Role Inventory.
Bsrmasc	Masculinity score based on the Bem Sex Role Inventory.
Learn	Learning achievement orientation.
Othresaf	Extent to which participant holds confederate responsible for how things went interpersonally.
Othersdo	Extent to which participant holds self responsible for task performance.
Slfresaf	Extent to which participant holds self responsible for how things went interpersonally.
Slfresdo	Extent to which participant holds self responsible for task performance.

Table 4: Mean and Standard Deviation of Variables with Regard to Participant Sex

Variables	Participant Sex	Mean (Standard Deviation)	T-Test for Equality of Means		
			T	df	Sig. (2-tailed)
Androgeny	Male	0.08 (0.28)	-2.06	72	0.04
	Female	0.26 (0.45)			
Femininity	Male	4.33 (0.77)	-2.55	72	0.01
	Female	4.83 (0.93)			
Masculinity	Male	4.80 (0.87)	-0.96	72	0.34
	Female	4.96 (0.55)			
Affiliative Orientation	Male	6.82 (1.06)	-4.16	72	0.00
	Female	7.77 (0.90)			
Learning Orientation	Male	6.48 (1.01)	-2.17	72	0.03
	Female	7.00 (1.06)			
Performance Orientation	Male	5.75 (1.63)	-0.03	72	0.98
	Female	5.76 (1.29)			

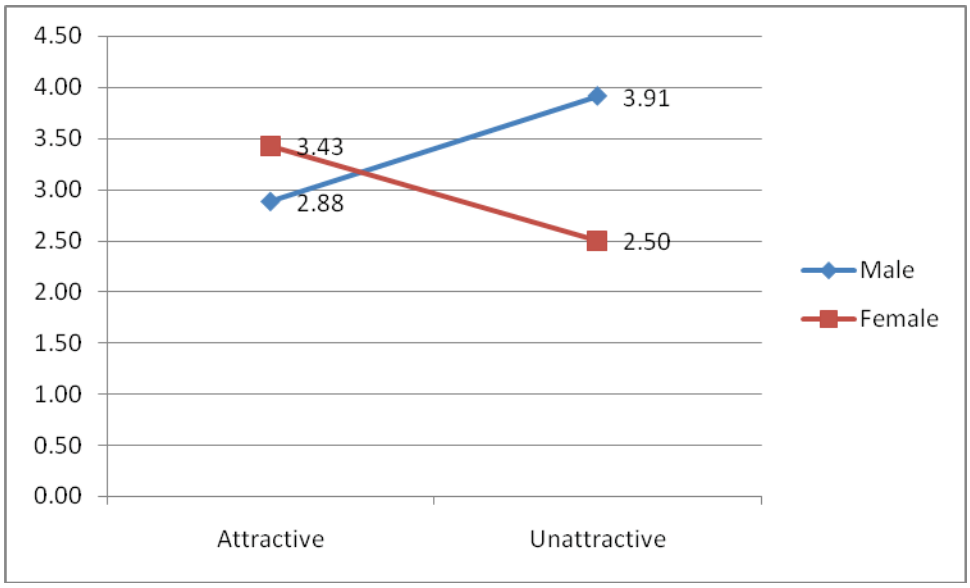
Table 5: Discussion of Findings by Variable

Variable	Statistical Significance	Measure	Findings
Participant Sex	Significant	Anger	Female participants got angrier at confederates than male participants.
	Marginal	Frustration	Female participants got more frustrated at confederates than male participants.
	Marginal	Confederate Responsibility for Task Performance	Female participants held confederates more responsible for task performance than male participants.
	Significant	Use of Third Person Pronoun	Female participants used third person pronouns more than male participants.
	Significant	Use of Cause Words	Female participants used cause words more than male participants.
Confederate Attractiveness	Marginal	Frustration	Participants got more frustrated with unattractive confederates than with attractive confederates.
Confederate Sex	Significant	Shame	Participants felt more shame with male confederates than with female confederates.
	Significant	Embarrassment	Participants felt more embarrassed with male confederates than with female confederates.
Confederate Attractiveness x Confederate Sex	Significant	Confederate Responsibility for Task Performance	Participants held attractive female confederates more responsible than attractive male confederates for task performance.
			Participants held unattractive male confederates more responsible than unattractive female confederates for task performance, and even more so.
	Significant	Confederate Responsibility for Interpersonal Performance	Participants held attractive female confederates more responsible than attractive male confederates for interpersonal performance.
			Participants held unattractive male confederates more responsible than unattractive female confederates for interpersonal performance.
	Significant	Use of First Person Pronoun	Participants used first person pronoun more when dealing with attractive males than unattractive males.
			Participants used first person pronoun more when dealing with unattractive females than attractive females.
	Significant	Use of Cause Words	Participants used cause words more when dealing with unattractive females than when dealing with attractive females.
			Participants used cause words more when dealing with attractive males than when dealing with unattractive males.

Confederate Attractiveness x Participant Sex	Significant	Confederate Responsibility for Task Performance	Female participants and male participants held attractive confederates equally responsible.
			Male participants held attractive confederates more responsible than they held unattractive confederates.
			Female participants held unattractive and attractive confederates equally responsible.
	Significant	Self Responsibility for Task Performance	Female participants held selves more responsible for task performance when dealing with attractive confederates.
			Male participants held selves more responsible for task performance when dealing with unattractive confederates.
	Significant	Self Responsibility for Interpersonal Performance	Female participants held selves more responsible for interpersonal performance when dealing with attractive confederates.
			Male participants held selves more responsible for interpersonal performance when dealing with unattractive confederates.
	Marginal	Shame	Female participants felt more shame when dealing with attractive confederates.
			Male participants felt more shame when dealing with unattractive confederates.
	Marginal	Use of First Person Pronoun	Female participants used first person pronoun more when dealing with attractive confederates.
			Male participants used first person pronoun more when dealing with unattractive confederates.
Participant Sex x Confederate Sex	Significant	Embarrassment	Female participants felt much more embarrassed when dealing with male confederates.
			Male participants felt somewhat more embarrassed when dealing with female confederates.

VII. Figures

Figure 1: **Shame**
Participant Sex x Confederate Attractiveness
Mean Ratings



*Only Marginally Significant

Figure 2: **Embarassment**
Participant Sex x Confederate Sex
Mean Ratings

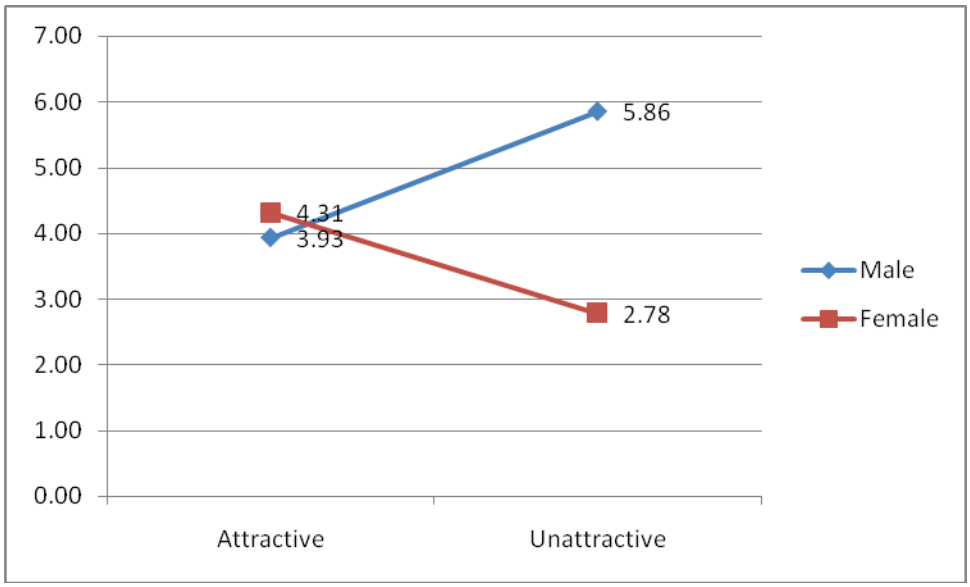


Figure 3: **Confederate Responsibility for Task Performance**
Confederate Attractiveness x Confederate Sex
Mean Ratings

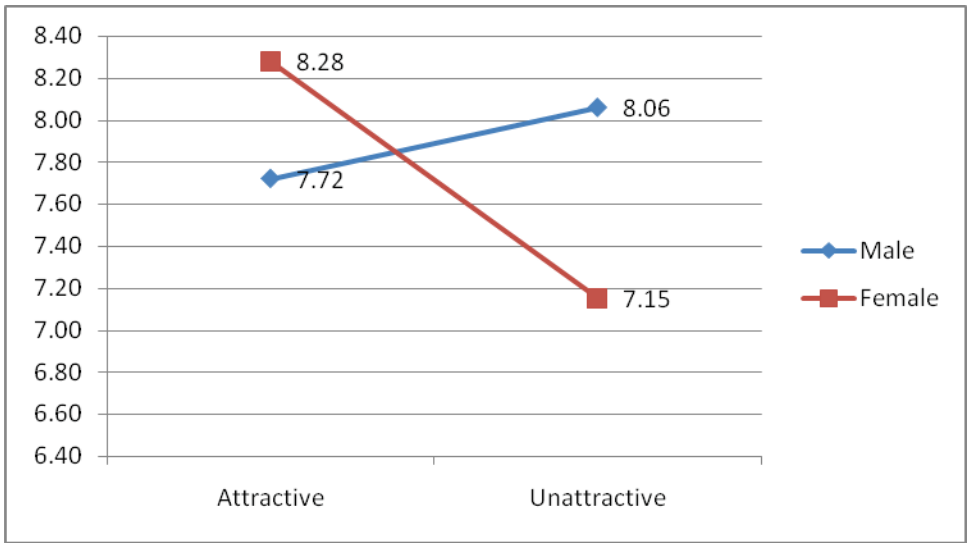


Figure 4: **Confederate Responsibility for Task Performance**
Confederate Attractiveness x Participant Sex
Mean Ratings

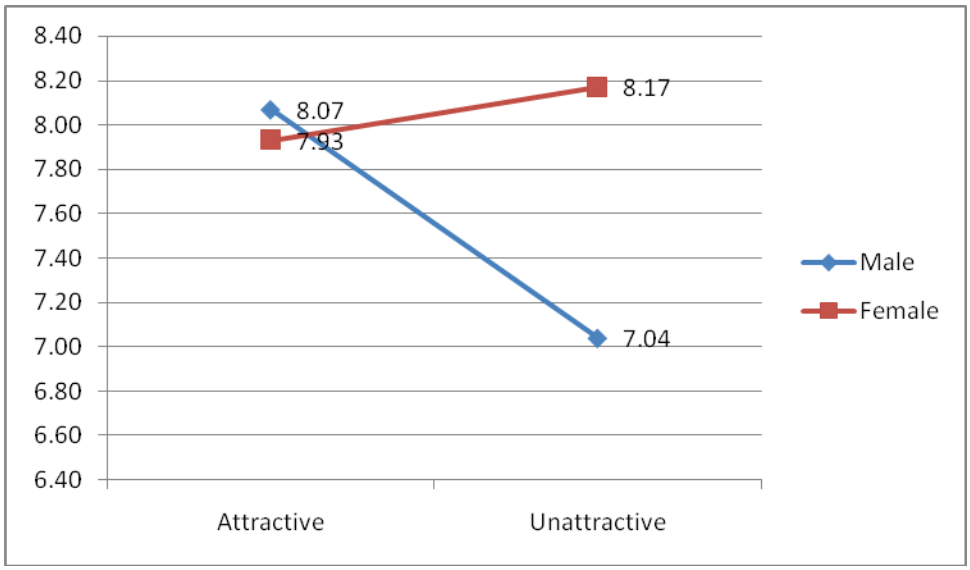


Figure 5: **Confederate Responsibility for Interpersonal Performance**
Confederate Attractiveness x Confederate Sex
Mean Ratings

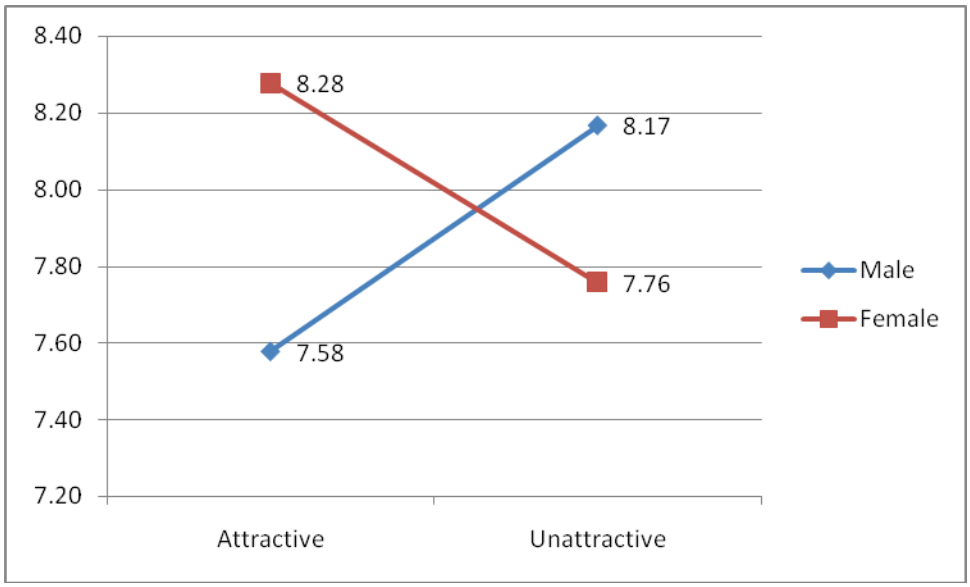


Figure 6: **Self Responsibility for Task Performance**
Confederate Attractiveness x Participant Sex
Mean Ratings

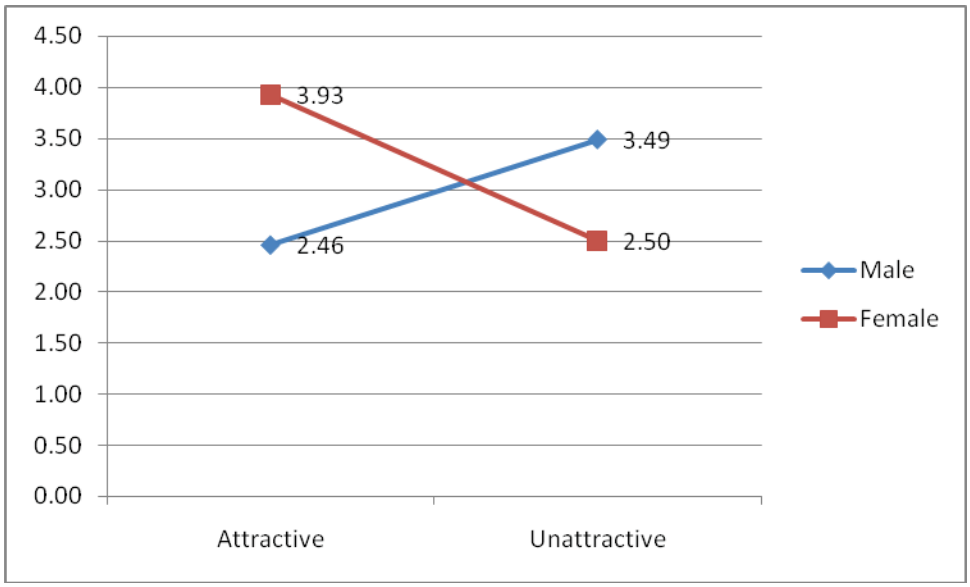


Figure 7: **Self Responsibility for Interpersonal Performance**
Confederate Attractiveness x Participant Sex
Mean Ratings

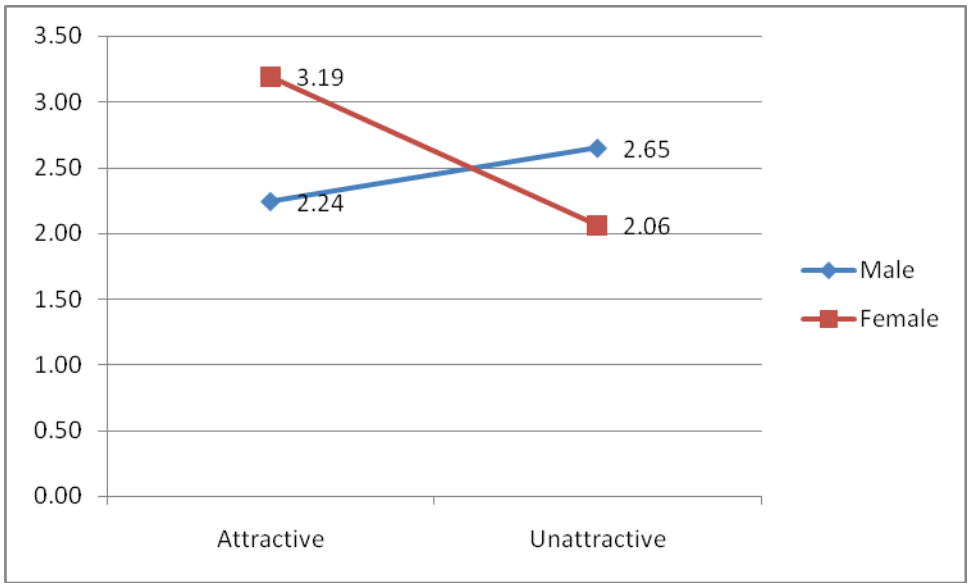


Figure 8: **LIWC Analysis Use of First Person Singular Pronoun**
Confederate Sex x Confederate Attractiveness
Mean Ratings

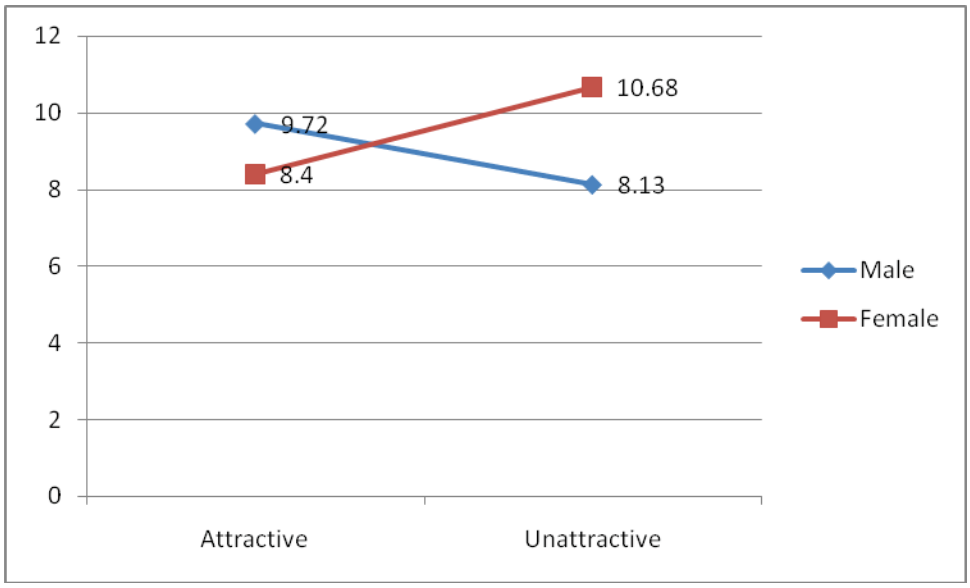
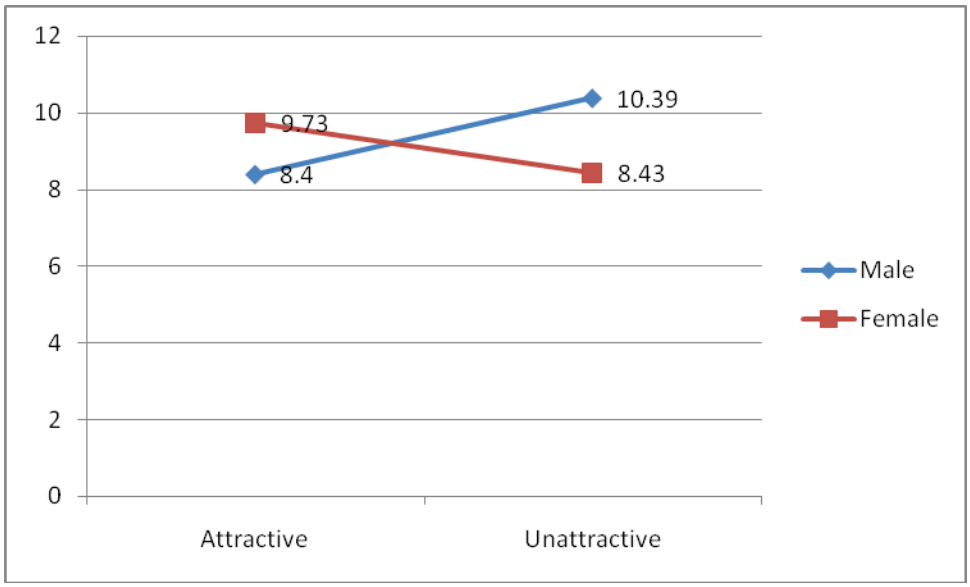
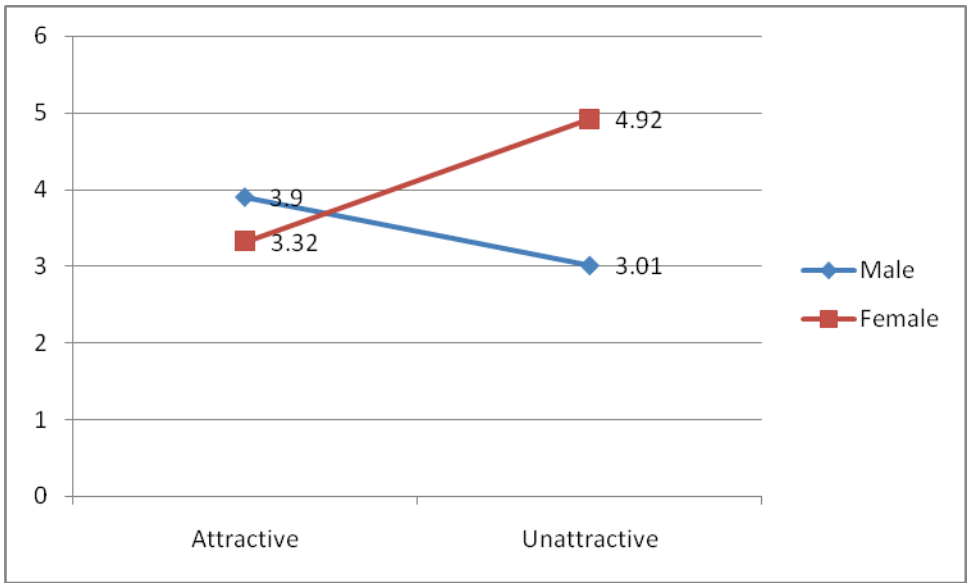


Figure 9: **LIWC Analysis Use of First Person Singular Pronoun Participant Sex x Confederate Attractiveness Mean Ratings***



*Only Marginally Significant.

Figure 10: **LIWC Analysis Use of Cause Words**
Confederate Sex x Confederate Attractiveness
Mean Ratings



VIII. Appendices

Appendix A. Vignette Scenario, Attractive Male

On the next page you will be presented with a hypothetical scenario that involves you taking part in a psychology experiment with another student. Please read the scenario and imagine yourself in it as vividly as you can. Do your best to imagine what it would be like to actually be in this situation. What would you be thinking and feeling? Try to experience these thoughts and feelings as strongly and as deeply as you can. Once you have the scenario in mind, and are responding to it as deeply as you can, please answer the questions that follow.

You have volunteered to take part in a psychology experiment as part of a course requirement for your Psych 101 class. You arrive at the assigned location a couple of minutes early, and the experimenter greets you and asks you to take a seat in what appears to be an entry-way waiting area. She explains that the experiment is one investigating social interaction, and that you are waiting for another participant to arrive, who you will be working with on the experiment. After a couple of minutes the other participant arrives, and the experimenter invites him in to take a seat, and asks you both to introduce yourselves. The other person introduces himself as Jason, and mentions that he is an HOD major at Peabody. As Jason takes his seat, you can't help but notice that he is quite good-looking. He is obviously physically fit, and he is very neatly dressed. Once you are seated, the experimenter explains that you both will be taking part in an experiment on interpersonal communication. As the main task in this experiment, the two of you will be asked to work together to build a model out of Tinker Toys. The way that it will work is that one of you will be assigned to be the "Commander" and the other the "Builder," and that you each will have a different job to do. The Commander will have a chance to study a copy of the model you will be building, and then working from a couple of photographs of the model, the Commander will instruct the Builder on what to do. However, the Commander will not be able to actually touch the Tinker Toys while the model is being built. The Builder, on the other hand, won't be able to see what the model looks like, but rather will need to follow the Commander's instructions to build the model. The experimenter then says that it is time to assign you to your different roles, and picks up a baseball cap. She then puts two folded slips of paper in the cap, and asks you to take one of them out, and to look at it. You take one, open it, and see the word "Commander." You tell the experimenter this, who then says that you will be the Commander, and Jason will be the Builder. The experimenter also notes that, as an incentive, to encourage you to do your best at the task, you will be timed as you work on the model. In addition, she notes that once the study is done, both members of the team that correctly builds the model the fastest will receive $50 gift certificates from Amazon.com.

The experimenter then takes Jason to the main room next door, and asks him to take a seat. Then she takes you to a little side-room, in which you find a model car made out of tinker-toys. The experimenter hands you a clipboard with two different pictures of the model, and tells you that you have three minutes to study the model. During this time you can pick it up and examine it however, you want, but that when it comes time to teach, you will only have the pictures on the clipboard to work from. You study the model. You note that although it has a fair number of parts, the actual design is quite simple, and you also note that the pictures you will be working from do a very good job of depicting how the parts go together. When the experimenter comes to take you to join Jason in the main room, you are thinking that that this task will be pretty easy, and you are expecting that your team will do quite well. The experimenter then seats you across from Jason at a round table that is covered with Tinker Toys. After asking if you both are ready,

she then says “Alright, begin” and starts her stopwatch. The experimenter then goes back into the next room saying, “Call me as soon as you have finished the model.” You start to instruct Jason about what to do to build the model. However, it quickly becomes apparent that things are not going well. Before you have a chance to say much of anything, Jason starts to go through the Tinker-Toys and starts putting them together in seemingly random ways. When you start to give Jason some directions, he responds by saying “Hold on, I’m trying to figure out how these work.” You wait quietly for about 30 seconds while he continues to work with the Tinker Toys on his own. Suddenly, he looks right at you, and with a curt tone in his voice he asks: “Well, are you going to give me instructions, or what? I’m waiting.” You start to give him some instructions and for a little while he does what you suggest, although it seems to you he is moving rather slowly. Then after doing a couple things as you asked, he starts to do things that are contrary to what you ask. For instance, when you ask him to pick up a long, green stick, he picks up a small yellow plastic piece. When you try to correct him, saying “No, we need a green stick now,” he just glares at you and sighs irritably. Things continue like this for a couple of minutes, with Jason sometimes doing what you ask and sometimes not. At one point, when you try to correct him, he snidely asks: “Well, why don’t you just do it yourself?” Things continue for another couple of minutes, with relatively little progress being made on the model, because Jason only does what you ask him to do about half the time. Then, all of a sudden, Jason glares at you, slams down the stick he was holding, and exclaims “This is a waste of my time. You give terrible directions, and there is no way we will win those gift certificates. I’m done with this!” Jason then calls out to the experimenter, who is still in the next room, and asks if he can leave now. The experimenter comes into the room and indicates that, yes, the experiment can be over. She then asks Jason whether he would be willing to fill out a couple of questionnaires before he leaves. Jason asks whether he would have to work anymore with you, and when the experimenter indicates that he would be completing the questionnaires in a different room, Jason says “I guess that’s fine.”

Right now the experimenter has just taken Jason next door to get him set up with the questionnaires, and you are waiting for the experimenter to return. When you are imagining yourself in this situation as vividly as you can, please answer the questions that follow.

Appendix B. Vignette Scenario, Attractive Female

On the next page you will be presented with a hypothetical scenario that involves you taking part in a psychology experiment with another student. Please read the scenario and imagine yourself in it as vividly as you can. Do your best to imagine what it would be like to actually be in this situation. What would you be thinking and feeling? Try to experience these thoughts and feelings as strongly and as deeply as you can. Once you have the scenario in mind, and are responding to it as deeply as you can, please answer the questions that follow.

You have volunteered to take part in a psychology experiment as part of a course requirement for your Psych 101 class. You arrive at the assigned location a couple of minutes early, and the experimenter greets you and asks you to take a seat in what appears to be an entry-way waiting area. She explains that the experiment is one investigating social interaction, and that you are waiting for another participant to arrive, who you will be working with on the experiment. After a couple of minutes the other participant arrives, and the experimenter invites her in to take a seat, and asks you both to introduce yourselves. The other person introduces herself as Jennifer, and mentions that she is an HOD major at Peabody. As Jennifer takes her seat, you can't help but notice that she is quite good-looking. She is obviously physically fit, and she is very neatly dressed.

Once you are seated, the experimenter explains that you both will be taking part in an experiment on interpersonal communication. As the main task in this experiment, the two of you will be asked to work together to build a model out of Tinker Toys. The way that it will work is that one of you will be assigned to be the "Commander" and the other the "Builder," and that you each will have a different job to do. The Commander will have a chance to study a copy of the model you will be building, and then working from a couple of photographs of the model, the Commander will instruct the Builder on what to do. However, the Commander will not be able to actually touch the Tinker Toys while the model is being built. The Builder, on the other hand, won't be able to see what the model looks like, but rather will need to follow the Commander's instructions to build the model. The experimenter then says that it is time to assign you to your different roles, and picks up a baseball cap. She then puts two folded slips of paper in the cap, and asks you to take one of them out, and to look at it. You take one, open it, and see the word "Commander." You tell the experimenter this, who then says that you will be the Commander, and Jennifer will be the Builder. The experimenter also notes that, as an incentive, to encourage you to do your best at the task, you will be timed as you work on the model. In addition, she notes that once the study is done, both members of the team that correctly builds the model the fastest will receive $50 gift certificates from Amazon.com.

The experimenter then takes Jennifer to the main room next door, and asks her to take a seat. Then she takes you to a little side-room, in which you find a model car made out of tinker-toys. The experimenter hands you a clipboard with two different pictures of the model, and tells you that you have three minutes to study the model. During this time you can pick it up and examine it however, you want, but that when it comes time to teach, you will only have the pictures on the clipboard to work from. You study the model. You note that although it has a fair number of parts, the actual design is quite simple, and you also note that the pictures you will be working from do a very good job of depicting how the parts go together. When the experimenter comes to take you to join Jennifer in the main room, you are thinking that that this task will be pretty easy, and you are expecting that your team will do quite well.

The experimenter then seats you across from Jennifer at a round table that is covered with Tinker Toys. After asking if you both are ready, she then says "Alright, begin" and starts her stopwatch.

The experimenter then goes back into the next room saying, “Call me as soon as you have finished the model.” You start to instruct Jennifer about what to do to build the model. However, it quickly becomes apparent that things are not going well. Before you have a chance to say much of anything, Jennifer starts to go through the Tinker-Toys and starts putting them together in seemingly random ways. When you start to give Jennifer some directions, she responds by saying “Hold on, I’m trying to figure out how these work.” You wait quietly for about 30 seconds while she continues to work with the Tinker Toys on her own. Suddenly, she looks right at you, and with a curt tone in her voice she asks: “Well, are you going to give me instructions, or what? I’m waiting.” You start to give her some instructions and for a little while she does what you suggest, although it seems to you she is moving rather slowly. Then after doing a couple things as you asked, she starts to do things that are contrary to what you ask. For instance, when you ask her to pick up a long, green stick, she picks up a small yellow plastic piece. When you try to correct her, saying “No, we need a green stick now,” she just glares at you and sighs irritably. Things continue like this for a couple of minutes, with Jennifer sometimes doing what you ask and sometimes not. At one point, when you try to correct her, she snidely asks: “Well, why don’t you just do it yourself?” Things continue for another couple of minutes, with relatively little progress being made on the model, because Jennifer only does what you ask her to do about half the time. Then, all of a sudden, Jennifer glares at you, slams down the stick she was holding, and exclaims “This is a waste of my time. You give terrible directions, and there is no way we will win those gift certificates. I’m done with this!”. Jennifer then calls out to the experimenter, who is still in the next room, and asks if she can leave now. The experimenter comes into the room and indicates that, yes, the experiment can be over. She then asks Jennifer whether she would be willing to fill out a couple of questionnaires before she leaves. Jennifer asks whether she would have to work anymore with you, and when the experimenter indicates that she would be completing the questionnaires in a different room, Jennifer says “I guess that’s fine.”

Right now the experimenter has just taken Jennifer next door to get her set up with the questionnaires, and you are waiting for the experimenter to return. When you are imagining yourself in this situation as vividly as you can, please answer the questions that follow.

Appendix C. Vignette Scenario, Unattractive Male

On the next page you will be presented with a hypothetical scenario that involves you taking part in a psychology experiment with another student. Please read the scenario and imagine yourself in it as vividly as you can. Do your best to imagine what it would be like to actually be in this situation. What would you be thinking and feeling? Try to experience these thoughts and feelings as strongly and as deeply as you can. Once you have the scenario in mind, and are responding to it as deeply as you can, please answer the questions that follow.

You have volunteered to take part in a psychology experiment as part of a course requirement for your Psych 101 class. You arrive at the assigned location a couple of minutes early, and the experimenter greets you and asks you to take a seat in what appears to be an entry-way waiting area. She explains that the experiment is one investigating social interaction, and that you are waiting for another participant to arrive, who you will be working with on the experiment. After a couple of minutes the other participant arrives, and the experimenter invites him in to take a seat, and asks you both to introduce yourselves. The other person introduces himself as Jason, and mentions that he is an HOD major at Peabody. As Jason takes his seat, you can't help but notice that he is not very good-looking. He is obviously out of shape, and he is very sloppily dressed.

Once you are seated, the experimenter explains that you both will be taking part in an experiment on interpersonal communication. As the main task in this experiment, the two of you will be asked to work together to build a model out of Tinker Toys. The way that it will work is that one of you will be assigned to be the "Commander" and the other the "Builder," and that you each will have a different job to do. The Commander will have a chance to study a copy of the model you will be building, and then working from a couple of photographs of the model, the Commander will instruct the Builder on what to do. However, the Commander will not be able to actually touch the Tinker Toys while the model is being built. The Builder, on the other hand, won't be able to see what the model looks like, but rather will need to follow the Commander's instructions to build the model. The experimenter then says that it is time to assign you to your different roles, and picks up a baseball cap. She then puts two folded slips of paper in the cap, and asks you to take one of them out, and to look at it. You take one, open it, and see the word "Commander." You tell the experimenter this, who then says that you will be the Commander, and Jason will be the Builder. The experimenter also notes that, as an incentive, to encourage you to do your best at the task, you will be timed as you work on the model. In addition, she notes that once the study is done, both members of the team that correctly builds the model the fastest will receive $50 gift certificates from Amazon.com.

The experimenter then takes Jason to the main room next door, and asks him to take a seat. Then she takes you to a little side-room, in which you find a model car made out of tinker-toys. The experimenter hands you a clipboard with two different pictures of the model, and tells you that you have three minutes to study the model. During this time you can pick it up and examine it however, you want, but that when it comes time to teach, you will only have the pictures on the clipboard to work from. You study the model. You note that although it has a fair number of parts, the actual design is quite simple, and you also note that the pictures you will be working from do a very good job of depicting how the parts go together. When the experimenter comes to take you to join Jason in the main room, you are thinking that that this task will be pretty easy, and you are expecting that your team will do quite well.

The experimenter then seats you across from Jason at a round table that is covered with Tinker Toys. After asking if you both are ready, she then says "Alright, begin" and starts her stopwatch.

The experimenter then goes back into the next room saying, “Call me as soon as you have finished the model.” You start to instruct Jason about what to do to build the model. However, it quickly becomes apparent that things are not going well. Before you have a chance to say much of anything, Jason starts to go through the Tinker-Toys and starts putting them together in seemingly random ways. When you start to give Jason some directions, he responds by saying “Hold on, I’m trying to figure out how these work.” You wait quietly for about 30 seconds while he continues to work with the Tinker Toys on his own. Suddenly, he looks right at you, and with a curt tone in his voice he asks: “Well, are you going to give me instructions, or what? I’m waiting.” You start to give him some instructions and for a little while he does what you suggest, although it seems to you he is moving rather slowly. Then after doing a couple things as you asked, he starts to do things that are contrary to what you ask. For instance, when you ask him to pick up a long, green stick, he picks up a small yellow plastic piece. When you try to correct him, saying “No, we need a green stick now,” he just glares at you and sighs irritably. Things continue like this for a couple of minutes, with Jason sometimes doing what you ask and sometimes not. At one point, when you try to correct him, he snidely asks: “Well, why don’t you just do it yourself?” Things continue for another couple of minutes, with relatively little progress being made on the model, because Jason only does what you ask him to do about half the time. Then, all of a sudden, Jason glares at you, slams down the stick he was holding, and exclaims “This is a waste of my time. You give terrible directions, and there is no way we will win those gift certificates. I’m done with this!” Jason then calls out to the experimenter, who is still in the next room, and asks if he can leave now. The experimenter comes into the room and indicates that, yes, the experiment can be over. She then asks Jason whether he would be willing to fill out a couple of questionnaires before he leaves. Jason asks whether he would have to work anymore with you, and when the experimenter indicates that he would be completing the questionnaires in a different room, Jason says “I guess that’s fine.”

Right now the experimenter has just taken Jason next door to get him set up with the questionnaires, and you are waiting for the experimenter to return. When you are imagining yourself in this situation as vividly as you can, please answer the questions that follow.

Appendix D. Vignette Scenario, Unattractive Female

On the next page you will be presented with a hypothetical scenario that involves you taking part in a psychology experiment with another student. Please read the scenario and imagine yourself in it as vividly as you can. Do your best to imagine what it would be like to actually be in this situation. What would you be thinking and feeling? Try to experience these thoughts and feelings as strongly and as deeply as you can. Once you have the scenario in mind, and are responding to it as deeply as you can, please answer the questions that follow.

You have volunteered to take part in a psychology experiment as part of a course requirement for your Psych 101 class. You arrive at the assigned location a couple of minutes early, and the experimenter greets you and asks you to take a seat in what appears to be an entry-way waiting area. She explains that the experiment is one investigating social interaction, and that you are waiting for another participant to arrive, who you will be working with on the experiment. After a couple of minutes the other participant arrives, and the experimenter invites her in to take a seat, and asks you both to introduce yourselves. The other person introduces herself as Jennifer, and mentions that she is an HOD major at Peabody. As Jennifer takes her seat, you can't help but notice that she is not very good-looking. She is obviously out of shape, and she is very sloppily dressed.

Once you are seated, the experimenter explains that you both will be taking part in an experiment on interpersonal communication. As the main task in this experiment, the two of you will be asked to work together to build a model out of Tinker Toys. The way that it will work is that one of you will be assigned to be the "Commander" and the other the "Builder," and that you each will have a different job to do. The Commander will have a chance to study a copy of the model you will be building, and then working from a couple of photographs of the model, the Commander will instruct the Builder on what to do. However, the Commander will not be able to actually touch the Tinker Toys while the model is being built. The Builder, on the other hand, won't be able to see what the model looks like, but rather will need to follow the Commander's instructions to build the model. The experimenter then says that it is time to assign you to your different roles, and picks up a baseball cap. She then puts two folded slips of paper in the cap, and asks you to take one of them out, and to look at it. You take one, open it, and see the word "Commander." You tell the experimenter this, who then says that you will be the Commander, and Jennifer will be the Builder. The experimenter also notes that, as an incentive, to encourage you to do your best at the task, you will be timed as you work on the model. In addition, she notes that once the study is done, both members of the team that correctly builds the model the fastest will receive $50 gift certificates from Amazon.com.

The experimenter then takes Jennifer to the main room next door, and asks her to take a seat. Then she takes you to a little side-room, in which you find a model car made out of tinker-toys. The experimenter hands you a clipboard with two different pictures of the model, and tells you that you have three minutes to study the model. During this time you can pick it up and examine it however, you want, but that when it comes time to teach, you will only have the pictures on the clipboard to work from. You study the model. You note that although it has a fair number of parts, the actual design is quite simple, and you also note that the pictures you will be working from do a very good job of depicting how the parts go together. When the experimenter comes to take you to join Jennifer in the main room, you are thinking that that this task will be pretty easy, and you are expecting that your team will do quite well.

The experimenter then seats you across from Jennifer at a round table that is covered with Tinker Toys. After asking if you both are ready, she then says "Alright, begin" and starts her stopwatch.

The experimenter then goes back into the next room saying, “Call me as soon as you have finished the model.” You start to instruct Jennifer about what to do to build the model. However, it quickly becomes apparent that things are not going well. Before you have a chance to say much of anything, Jennifer starts to go through the Tinker-Toys and starts putting them together in seemingly random ways. When you start to give Jennifer some directions, she responds by saying “Hold on, I’m trying to figure out how these work.” You wait quietly for about 30 seconds while she continues to work with the Tinker Toys on her own. Suddenly, she looks right at you, and with a curt tone in her voice she asks: “Well, are you going to give me instructions, or what? I’m waiting.” You start to give her some instructions and for a little while she does what you suggest, although it seems to you she is moving rather slowly. Then after doing a couple things as you asked, she starts to do things that are contrary to what you ask. For instance, when you ask her to pick up a long, green stick, she picks up a small yellow plastic piece. When you try to correct her, saying “No, we need a green stick now,” she just glares at you and sighs irritably. Things continue like this for a couple of minutes, with Jennifer sometimes doing what you ask and sometimes not. At one point, when you try to correct her, she snidely asks: “Well, why don’t you just do it yourself?” Things continue for another couple of minutes, with relatively little progress being made on the model, because Jennifer only does what you ask her to do about half the time. Then, all of a sudden, Jennifer glares at you, slams down the stick she was holding, and exclaims “This is a waste of my time. You give terrible directions, and there is no way we will win those gift certificates. I’m done with this!”. Jennifer then calls out to the experimenter, who is still in the next room, and asks if she can leave now. The experimenter comes into the room and indicates that, yes, the experiment can be over. She then asks Jennifer whether she would be willing to fill out a couple of questionnaires before she leaves. Jennifer asks whether she would have to work anymore with you, and when the experimenter indicates that she would be completing the questionnaires in a different room, Jennifer says “I guess that’s fine.”

Right now the experimenter has just taken Jennifer next door to get her set up with the questionnaires, and you are waiting for the experimenter to return. When you are imagining yourself in this situation as vividly as you can, please answer the questions that follow.

Appendix E. Free Response Questions

1. In your own words, briefly please describe how you are feeling right now, having just completed the model building task. Why you are feeling this way.

2. How would you characterize the other participant's behavior. Why do you think they behaved this way?

Appendix F. Emotion Ratings

Below are a number of clusters of adjectives that describe different emotions or feelings. Each group of adjectives is meant to get at a single basic feeling or emotion. Please indicate the extent to which each cluster of adjectives characterizes your feelings and emotions in the situation you are imagining yourself in, having just finished the model-building task.

*Items were rated on a Likert-type scale from 1 (not at all) to 9 (extremely much).

Embarrassed, Humiliated
Guilty, Culpable
Afraid, Frightened, Scared
Shy, Timid, Bashful
Relieved, Unburdened
Disgusted, Repulsed, Revolted
Interested, Engaged
Defeated, Resigned, Beaten
Grateful, Appreciative, Thankful
Sad, Downhearted, Blue
Disappointed, Let Down
Surprised, Amazed, Astonished
Determined, Challenged, Motivated
Tranquil, Calm, Serene
Hopeful, Optimistic
Overwhelmed, Overloaded
Nervous, Anxious, Apprehensive
Frustrated, Thwarted, Exasperated
Regretful, Remorseful, Sorry
Joyful, Happy, Glad
Bored, Detached, Uninterested
Proud, Triumphant
Eager, Enthused, Excited
Irritated, Annoyed
Ashamed, Disgraced
Mad, Angry, Irate

Appendix G. Appraisal Ratings

Now you will be presented with a number of questions about your thoughts within the situation you are imagining. For each question, please answer with a number from 1 to 9 to indicate what you are thinking RIGHT NOW, having just finished the model-building task.

*Items were rated on a Likert-type scale from 1 (not at all) to 9 (extremely).
How much effort did you expend in working with the other participant to build the model?
To what degree do you think that what has happened in this experiment has been relevant to issues regarding achievement and success?
How difficult was it for you to work with the other participant to build the model?
To what degree have things in this experiment gone the way you wanted them to go?
How well were you able to work within your assigned role to cooperatively build the model with the other participant?
To what degree do you think that what has happened in this experiment has been relevant to issues regarding relationships between people?

*Items were rated on a Likert-type scale from 1 (not at all) to 9 (as much as I've ever cared about anything).
How much do you care about how well you've done in this experiment?
How much do you care about how things have gone between you and the other participant?

*Items were rated on a Likert-type scale from 1 (not at all) to 9 (extremely).
How satisfied are you with how well you have completed your assigned role?
How satisfied are you with how well things have gone between you and the other participant?

*Items were rated on a Likert-type scale from 1 (not at all) to 9 (completely).
To what extent do you think that YOU are responsible for your team's performance
To what extent do you think that the other participant is responsible for your team's performance?
To what extent do you think that YOU are responsible for how things have gone between you and the other participant?
To what extent do you think that the other participant is responsible for how things have gone between you and the other participant?

*Items were rated on a Likert-type scale from 1 (not at all) to 9 (extremely).
To what degree were you able to influence how things went between you and the other subject?
To what extent do you feel able to deal emotionally with what has happened in this experiment?
How close to/connected with the other subject did you feel (Given the fact that you were strangers)?
To what degree would you like to socialize with this person outside of the experiment?
If you were at a party and saw this person, how likely would you be to go talk to them?
To what extent is this person someone you would be willing to either date or set up with one of your friends?

Appendix G. Impression Ratings

Now you will be asked several questions about your impression of your partner in the model-building task that you are imagining yourself taking part in. Please use the scale below to indicate to what extent the adjectives listed are descriptive of what you think your partner is like as a person.

*Items were rated on a Likert-type scale from 1 (not at all descriptive) to 9 (extremely descriptive).

Happy
Annoying
Immature
Hot
Cooperative
Friendly
Helpful
Over-Critical
Fit
Pleasant
Unproductive
Unpleasant
Impatient
Grouchy
Optimistic
Stupid
Short-Tempered
Nice
Productive
Good-Humored
Enthusiastic
Irrational
Argumentative
Rude
Bossy
Warm
Pessimistic
Uptight
Easygoing
Arrogant
Respectful
Unfriendly
Polite
Patient
Reasonable
Practical
Inefficient
Considerate
Open-Minded
Good-Looking
Positive
Cranky
Agreeable
Incompetent
Appealing
Demanding
Attractive
Sexy
Unenthusiastic
Insulting
Mature
Competent
Cool-Headed
Stubborn
Smart

Appendix H. Bem Sex Roles Inventory

We are now done with the scenario you imagined yourself in, and we would like to get some additional information about you. Please use the scale below to indicate to what extent the adjectives listed are descriptive of your personality.

*Items were rated on a Likert-type scale from 1 (not at all descriptive) to 7 (extremely descriptive).

Self-Reliant
Helpful
Moody
Independent
Conscientious
Affectionate
Assertive
Happy
Loyal
Forceful
Reliable
Sympathetic
Leadership Ability
Truthful
Understanding
Makes Decisions Easily
Sincere
Conceited
Feeling
Soft Spoken
Masculine
Solemn
Willing to Take a Stand
Aggressive
Inefficient
Childlike
Individualistic
Language
Competitive
Tactful
Gentle
Yielding
Defends Own Beliefs
Cheerful
Shy
Athletic
Theatrical
Flatterable
Strong Personality
Unpredictable
Feminine
Analytical
Jealous
Sensitive to Others' Needs
Willing to Take Risks
Secretive
Compassionate
Self-Sufficient
Eager to Soothe Hurt
Dominant
Likable
Warm
Tender
Friendly
Gullible
Acts as a Leader
Adaptable
Does Not Use Harsh
Unsystematic
Loves Children
Ambitious
Conventional

Appendix I. Motivational Orientation Ratings

Please indicate the extent to which you agree or disagree with each of the following statements. Please use the scale below to indicate to what extent you agree with the following statements.

*Items were rated on a Likert-type scale from 1 (completely disagree) to 9 (completely agree).

When faced with a challenging task, my main concern is to perform well in order to prove how skilled I am at that task.
When faced with a challenging task, may main concern is to learn as much as I can about the task and the skills it involves.
I care a great deal about getting along well with others.
I care a great deal about financial success.
The many extra hours of work needed to do a job perfectly are simply not worth the effort.
It means a great deal to me to have a few close friends.
Obtaining rewards or recognition for my accomplishments is very important to me.
Even when people do not see what I do, I try to do things at a level of perfection.
I don't believe in showing lots of affection towards friends.
It is important to me to show others how good I am at accomplishing difficult tasks.
I like the challenge of learning new skills.
My friendships are many.
It's vital to me that I have a successful career.
I hate to do a job halfheartedly.
Giving and receiving affection and love is very important to me.
It is important to me that my achievements get the recognition and respect they deserve.
I don't stick to goals which prove hard to reach.
Sharing a sense of intimacy with someone is very important to me.
Winning is everything.
When confronted with a difficult task, I gladly accept the challenge.
I seldom put out extra effort to make friends.
I like challenges best when I know in advance that I can succeed at them.
I enjoy hard work.
It's very important to me that I have close relationships with others.
Being considered successful by others is an important goal for me.
Its very important to me that I do my best at whatever I do.
I want to be known for my accomplishments.
Learning something new or mastering a new skill is its own reward.
People consider me to be warm and friendly.
Receiving financial rewards for what I achieve is important to me.
In my work I seldom do more than is necessary.
I'm always looking to learn new things.
Having friends is very important to me.